

2. CONTRACT NO. 3. SOLICITATION NO. NNM08125357R 4. TYPE OF SOLICITATION  SEALED BID (IFB)  NEGOTIATED (RFP) 5. DATE ISSUED TBD 6. REQUISITION/PURCHASE NO. 4200201895

7. ISSUED BY National Aeronautics & Space Administration George C. Marshall Space Flight Center Procurement Office Marshall Space Flight Center, AL 35812 CODE MDP 8. ADDRESS OFFER TO (If other than Item 7) NASA/Marshall Space Flight Center Attn: PS21/Kimberly S. Carson Marshall Space Flight Center, AL 35812 Deliver to: Building 4203 Room B109 (256) 961-2035 or (256) 544-0609

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder" SOLICITATION

9. Sealed offers for furnishing the supplies or services in the Schedule will be received at the place specified in Item 8, or if hand carried, in the depository located in **Building 4203 Basement, Elevator Lobby Area** until **4:00 pm** local time, on **(See Provision L.17 DUE DATE FOR RECEIPT OF PROPOSALS)**. CAUTION - LATE Submissions, Modifications, and Withdrawals: See Section L, Provision No. 52.214-7 or 52.215-1. All offers are subject to all terms and conditions contained in this solicitation.

10. FOR INFORMATION CALL:  A. NAME Kimberly S. Carson B. TELEPHONE NO. (NO COLLECT CALLS) AREA CODE (256) NUMBER 544-0609 EXT. N/A C. EMAIL ADDRESS Kimberly.S.Carson@nasa.gov

11. TABLE OF CONTENTS

(X)	.SEC.	DESCRIPTION	PAGE(S)	(X)	SEC.	DESCRIPTION	PAGE(S)
PART I - THE SCHEDULE				PART II - CONTRACT CLAUSES			
<input checked="" type="checkbox"/>	A	SOLICITATION/CONTRACT FORM	1	<input checked="" type="checkbox"/>	I	CONTRACT CLAUSES	26
<input checked="" type="checkbox"/>	B	SUPPLIES OR SERVICES AND PRICES/COSTS	5	PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACH.			
<input checked="" type="checkbox"/>	C	DESCRIPTION/SPECS./WORK STATEMENT	1	<input checked="" type="checkbox"/>	J	LIST OF ATTACHMENTS	185
<input checked="" type="checkbox"/>	D	PACKAGING AND MARKING	1	PART IV - REPRESENTATIONS AND INSTRUCTIONS			
<input checked="" type="checkbox"/>	E	INSPECTION AND ACCEPTANCE	1	<input checked="" type="checkbox"/>	K	REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS	10
<input checked="" type="checkbox"/>	F	DELIVERIES OR PERFORMANCE	3				
<input checked="" type="checkbox"/>	G	CONTRACT ADMINISTRATION DATA	6	<input checked="" type="checkbox"/>	L	INSTRS., CONDS., AND NOTICES TO OFFERORS	178
<input checked="" type="checkbox"/>	H	SPECIAL CONTRACT REQUIREMENTS	14	<input checked="" type="checkbox"/>	M	EVALUATION FACTORS FOR AWARD	14

OFFER (Must be fully completed by offeror) NOTE: Item 12 does not apply if the solicitation includes the provisions at 52.214-16, Minimum Bid Acceptance Period.

12. In compliance with the above, the undersigned agrees, if this offer is accepted within [redacted] calendar days (60 calendar days unless a different period is inserted by the offeror) from the date for receipt of offers specified above, to furnish any or all items upon which prices are offered at the price set opposite each item, delivered at the designated point(s), within the time specified in the schedule.

13. DISCOUNT FOR PROMPT PAYMENT (See Section I, clause No. 52-232-8)  10 CALENDAR DAYS [redacted] %  20 CALENDAR DAYS [redacted] %  30 CALENDAR DAYS [redacted] %  CALENDAR DAYS [redacted] %

14. ACKNOWLEDGMENT OF AMENDMENTS (The offeror acknowledges receipt of amendments to the SOLICITATION). For offerors and related documents numbered and dated:

AMENDMENT NO	DATE	AMENDMENT NO	DATE
[redacted]	[redacted]	[redacted]	[redacted]

15. NAME AND ADDRESS OF OFFEROR CODE [redacted] FACILITY [redacted] 16. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print) [redacted]

15B. TELEPHONE NO. (Include area code) [redacted] 15C. CHECK IF REMITTANCE ADDRESS IS DIFFERENT FROM ABOVE - ENTER  SUCH ADDRESS IN SCHEDULE 17. SIGNATURE [redacted] 18. OFFER DATE [redacted]

AWARD (To be completed by Government)

19. ACCEPTED AS TO ITEMS NUMBERED 20. AMOUNT 21. ACCOUNTING AND APPROPRIATION

22. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION  10 U.S.C. 2304(c) ( )  41 U.S.C. 253(c) ( ) 23. SUBMIT INVOICES TO ADDRESS SHOWN IN: (4 copies unless otherwise specified)  ITEM

24. ADMINISTERED BY (If other than Item 7) CODE [redacted] 25. PAYMENT WILL BE MADE BY CODE [redacted]

26. NAME OF CONTRACTING OFFICER (Type or print) 27. UNITED STATES OF AMERICA (Signature of Contracting Officer) 28. AWARD DATE

IMPORTANT - Award will be made on this Form, or on Standard Form 26, or by other authorized official written notice.

**PART I - THE SCHEDULE**

**SECTION B - SUPPLIES OR SERVICES AND PRICE/COSTS**

**B.1 SERVICES TO BE FURNISHED AND TYPE OF CONTRACT**

(a) The Contractor shall provide all resources (except as expressly stated in the contract as furnished by the Government) necessary to furnish the services delineated in the Performance Work Statement (PWS) in Attachment J-1, entitled: "Marshall Engineering Technicians and Trades Support (METTS) Services."

(b) The services will be procured under two separate portions, Mission Services (MS) and Indefinite Delivery/Indefinite Quantity (IDIQ). The requirement is being procured on a cost-plus-award-fee basis. The contract and supporting data are organized as shown below:

(1) The Mission Services portion covers work identified in 1.0 – 2.0 of the PWS. Project management and administrative resources necessary to manage both the Mission and the IDIQ contract portions are covered in the Mission Services.

(2) IDIQ task orders will be used to procure those services identified in WBS 3.0 of the PWS that cannot be predetermined or quantified in advance.

(End of Clause)

**B.2 1852.216-85 ESTIMATED COST AND AWARD FEE (SEP 1993)**

(a) The total estimated cost of this contract is \$ [See Table B-1 below]. The total award fee for this contract is \$ [See Table B-1 below].

(b) Table B-1 reflects the contract values of individual contract line items (CLINs) and is set forth below:

**TABLE B-1, ESTIMATED COST AND AWARD FEE (AF)**

CLIN	PERIOD COVERED	MISSION SERVICES (BY)		IDIQ SUMMATION OF TASK ORDERS (BY)		TOTAL			
		ESTIMATED COST	MAXIMUM POTENTIAL AWARD FEE	ESTIMATED COST	MAXIMUM POTENTIAL AWARD FEE	TOTAL ESTIMATED COST	TOTAL MAXIMUM POTENTIAL AWARD FEE	TOTAL EARNED AWARD FEE	TOTAL VALUE
1	<u>BASE YEAR</u>								
	Fee Period 1**	\$*	\$*	TBD	TBD	\$*	\$*	TBD	\$*
	Fee Period 2**	\$*	\$*	TBD	TBD	\$*	\$*	TBD	\$*

\* To be completed by Offeror

\*\* 6-month evaluation periods

(c) If the Government exercises any of its Options pursuant to the terms of the contract, the estimated costs and fees for each Mission Services CLIN shall be as set forth in Table B-2 below.

**TABLE B-2, MISSION SERVICES – OPTION VALUES**

CLIN	PERIOD COVERED	MISSION SERVICES (BY)		IDIQ SUMMATION OF TASK ORDERS (BY)		TOTAL			
		ESTIMATED COST	MAXIMUM POTENTIAL AWARD FEE	ESTIMATED COST	MAXIMUM POTENTIAL AWARD FEE	TOTAL ESTIMATED COST	TOTAL MAXIMUM POTENTIAL AWARD FEE	TOTAL EARNED AWARD FEE	TOTAL VALUE
2	<u>OPTION YEAR 1</u>								
	Fee Period 3**	\$*	\$*	TBD	TBD	\$*	\$*	TBD	\$*
	Fee Period 4**	\$*	\$*	TBD	TBD	\$*	\$*	TBD	\$*
3	<u>OPTION YEAR 2</u>								
	Fee Period 5**	\$*	\$*	TBD	TBD	\$*	\$*	TBD	\$*
	Fee Period 6**	\$*	\$*	TBD	TBD	\$*	\$*	TBD	\$*
4	<u>OPTION YEAR 3</u>								
	Fee Period 7**	\$*	\$*	TBD	TBD	\$*	\$*	TBD	\$*
	Fee Period 8**	\$*	\$*	TBD	TBD	\$*	\$*	TBD	\$*
5	<u>OPTION YEAR 4</u>								
	Fee Period 9**	\$*	\$*	TBD	TBD	\$*	\$*	TBD	\$*
	Fee Period 10**	\$*	\$*	TBD	TBD	\$*	\$*	TBD	\$*

\* To be completed by Offeror

\*\* 6-month evaluation periods

**B.3 INDEFINITE DELIVERY/INDEFINITE QUANTITY (IDIQ)**

(a) The IDIQ portion of this contract is only applicable to the work described in Attachment J-1, PWS 3.0, Indefinite Delivery/Indefinite Quantity (IDIQ). This work will be authorized via Task Orders (TO) issued by the Contracting Officer (CO) in accordance with Clauses H.4, H.5, and H.6.

(b) This clause establishes the minimum and maximum quantity values including cost and award fees for each IDIQ CLIN of the contract as set forth in Table B-3 below.

**TABLE B-3 IDIQ MINIMUM AND MAXIMUM VALUES**

IDIQ CLIN	CONTRACT PERIOD	MINIMUM QUANTITY	MAXIMUM QUANTITY
1	Base (Year 1)	\$0.00	\$ 17,700,000
2	Option 1 (Year 2)	\$0.00	\$ 22,400,000
3	Option 2 (Year 3)	\$0.00	\$ 32,200,000
4	Option 3 (Year 4)	\$0.00	\$ 36,900,000
5	Option 4 (Year 5)	\$0.00	\$ 41,600,000

(c) Government task orders for services specified above the minimum and below the maximum shall not constitute a basis for equitable adjustments to the Mission Services CLINs.

(d) The establishment of this IDIQ portion of the contract does not inhibit the Government's right to later award separate contracts for similar or related services.

(e) The actual estimated cost and fee values of the individual CLINs will be the summation of the individual task orders values issued pursuant to this Clause and Clauses H.2 and H.3. A reconciling unilateral modification to the contract will be periodically issued that reflects the current task order summation value in Clause B.2.

(End of Clause)

**B.4 1852.216-76 AWARD FEE FOR SERVICE CONTRACTS (JUN 2000)**

(a) The contractor can earn award fee from a minimum of zero dollars to the maximum stated in NASA FAR Supplement clause 1852.216-85, "Estimated Cost and Award Fee" in this contract.

(b) Beginning 6 months after the effective date of this contract, the Government shall evaluate the Contractor's performance every 6 months to determine the amount of award fee earned by the contractor during the period. The Contractor may submit a self-evaluation of performance for each evaluation period under consideration. These self-evaluations will be considered by the Government in its evaluation. The Government's Fee Determination Official (FDO) will determine the award fee amounts based on the Contractor's performance in accordance with MSFC Award Fee Evaluation Plan (An internal Government document to be provided to the Contractor within 30 days after Contract award, along with Areas of Emphasis). The Government's Award Fee Plan may be revised unilaterally by the Government prior to the beginning of any rating period to redirect emphasis.

(c) The Government will advise the Contractor in writing of the evaluation results. The payment office designated in Clause G.2, Submission of Vouchers for Payment, will make payment based on issuance of a unilateral modification by the Contracting Officer.

**Final RFP NNM08125357R**

(d) After 85 percent of the potential award fee has been paid, the Contracting Officer may direct the withholding of further payment of award fee until a reserve is set aside in an amount that the Contracting Officer considers necessary to protect the Government's interest. This reserve shall not exceed 15 percent of the total potential award fee.

(e) The amount of award fee which can be awarded in each evaluation period is limited to the amounts set forth in Clause B.2, Estimated Cost and Award Fee. Award fee which is not earned in an evaluation period cannot be reallocated to future evaluation periods.

(f) (1) Provisional award fee payments will be made under this contract pending the determination of the amount of fee earned for an evaluation period. Provisional award fee payments will be made to the Contractor on a monthly basis. The total amount of award fee available in an evaluation period that will be provisionally paid is the lesser of 70 percent or the prior period's evaluation score.

(2) Provisional award fee payments will be superseded by the final award fee evaluation for that period. If provisional payments exceed the final evaluation score, the Contractor will either credit the next payment voucher for the amount of such overpayment or refund the difference to the Government, as directed by the Contracting Officer.

(3) If the Contracting Officer determines that the Contractor will not achieve a level of performance commensurate with the provisional rate, payment of provisional award fee will be discontinued or reduced in such amounts as the Contracting Officer deems appropriate. The Contracting Officer will notify the Contractor in writing if it is determined that such discontinuance or reduction is appropriate.

(4) Provisional award fee payments will not be made prior to the first award fee determination by the Government.

(g) Award fee determinations are unilateral decisions made solely at the discretion of the Government.

(End of Clause)

**B.5 1852.232-81 CONTRACT FUNDING (JUN 1990)**

(a) For purposes of payment of cost, exclusive of fee, in accordance with the Limitation of Funds clause, the total amount allotted by the Government to this contract is \$ TBD . This allotment is for the Marshall Engineering Technicians and Trades Support Services and covers the following estimated period of performance: Contract Award through TBD.

(b) An additional amount of \$ TBD is obligated under this contract for payment of fee.

	<u>Previous</u>	<u>This Action</u>	<u>Total</u>
Estimated Cost:	\$	\$	\$
Provisional Award Fee:	\$	\$	\$
Earned Award Fee:	\$	\$	\$
Total Sum Allotted:	\$	\$	\$

**(TO BE COMPLETED AT CONTRACT AWARD)**

(End of Clause)

**B.6 MSFC 52.222-90 PREMIUMS FOR SCHEDULED OVERTIME (FEB 2001)**

Pursuant to the clause entitled "Payment for Overtime Premiums," the amount of overtime premium authorized shall not exceed the amount specified below for the indicated period:

Amount	Period
\$ 200,000	Base Period
\$ 200,000	Option 1
\$ 200,000	Option 2
\$ 200,000	Option 3
\$ 200,000	Option 4

**Note 1** - Overtime premium is defined herein as any payment (for both exempt and non-exempt employees) for time worked exceeding forty hours per week (alternate work schedules will be considered by NASA on a WBS basis). A work week of forty-one hours includes one hour of overtime premium, whether the employee was paid at time-and-a-half, straight time, compensatory time, or as an offset of an earlier thirty-nine hour work week (unless an alternate work schedule has been approved by NASA).

**Note 2** - All overtime shall be coordinated with, and concurred in, by the COTR prior to work commencing.

(End of Clause)

**B.7 ALLOWABLE ITEMS OF COST (MSFC 52.242-90) (FEB 2001)**

(a) In accordance with the advance agreement between the Government and the Contractor for this contract, allowable costs for the items listed below are subject to the ceilings shown:

General and Administrative (G&A) Rate Ceiling (applicable to Mission and IDIQ portions):

Amount	Period
%*	Base Period
%*	Option 1
%*	Option 2
%*	Option 3
%*	Option 4

**\* TO BE COMPLETED BY OFFEROR (Consistent with Form CG)**

(b) It is mutually agreed that when indirect cost rate ceilings are specified, the following conditions shall apply: (1) the Government shall not be obligated to pay any additional amount should the final indirect cost rates exceed the negotiated ceiling rates, and (2) in the event the final indirect cost rates are less than the negotiated ceiling rates, the negotiated rates shall be reduced to conform with the lower rates.

(End of Clause)

**[END OF SECTION]**

**SECTION C - DESCRIPTION/SPECIFICATION/WORK STATEMENT**

**C.1 MSFC 52.211-93 DESCRIPTION/SPECIFICATIONS/STATEMENT OF WORK (FEB 2001)**

The Description/Specifications/Statement of Work is Attachment J-1, Performance Work Statement (PWS).

(End of Clause)

**C.2 EXCLUDED FUNCTIONS AND RESPONSIBILITIES**

Functions and responsibilities directly involved or associated with the management of any MSFC Directorate, Office or Laboratory are expressly excluded from this contract. Any instructions, directives, or orders issued under this contract involving such MSFC management functions and responsibilities shall be null and void. The following activities are representative of the excluded functions and responsibilities that cannot be provided by the Contractor for the Government:

- Policy making or management of MSFC operations;
- Program or project management;
- Technical management of Government contracts;
- MSFC management planning, programming (including preparation of scopes of work and/or procurement requests for items to be contracted for by MSFC), budgeting, review, and analysis;
- Government purchasing, contracting, contract administration, and/or performance, and pay and accounting;
- Direction or supervision of other Government Contractors or Government agencies, or otherwise acting as an agent to obligate or commit MSFC in any capacity;
- Clerical and other administration-type functions required to be performed by civil service personnel; and
- Supervision of Government employees.

(End of clause)

**[END OF SECTION]**

**SECTION D - PACKAGING AND MARKING**

**D.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE**

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

<u>Clause Number</u>	<u>Title</u>	<u>Date</u>
--------------------------	--------------	-------------

None included by reference.

II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES

<u>Clause Number</u>	<u>Title</u>	<u>Date</u>
1852.211-70	Packaging, Handling, and Transportation	SEP 2005

(End of Clause)

**[END OF SECTION]**

**SECTION E - INSPECTION AND ACCEPTANCE**

**E.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE**

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) CLAUSES

<u>Clause Number</u>	<u>Title</u>	<u>Date</u>
52.246-3	Inspection of Supplies – Cost Reimbursement	MAY 2001
52.246-5	Inspection of Services – Cost-Reimbursement	APR 1984

II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES

<u>Clause Number</u>	<u>Title</u>	<u>Date</u>
None included by reference		
(End of Clause)		

**E.2 1852.246-71 GOVERNMENT CONTRACT QUALITY ASSURANCE FUNCTIONS (OCT 1988)**

In accordance with the inspection clause of this contract, the Government intends to perform the following functions at the locations indicated:

<u>Item</u>	<u>Quality Assurance Function</u>	<u>Location</u>
All	Final Inspection and Acceptance	MSFC, AL
Task Order Basis	NASA MSFC Safety & Mission Assurance Surveillance Plan (See Attachment J-20)	MSFC, AL

(End of Clause)

**E.3 HIGHER-LEVEL CONTRACT QUALITY REQUIREMENT (FAR 52.246-11) (FEB 1999)**

The Contractor shall comply with the higher-level quality standard selected below.

<input type="checkbox"/>	<u>Title</u>	<u>Number</u>	<u>Date</u>
<input checked="" type="checkbox"/>	Marshall Management Manual	MPD 1280.1	Latest issue

(End of Clause)

**E.4 CHANGES TO HIGHER-LEVEL CONTRACT QUALITY REQUIREMENTS**

It is mutually agreed and understood that the Government may unilaterally update Clause E.3 with future versions and require full compliance to the latest requirements. Such action shall not give rise to an equitable adjustment to the estimated contract value, including both cost and award fees, or any other expressed terms and conditions of this contract.

(End of Clause)

**[END OF SECTION]**

**SECTION F - DELIVERIES OR PERFORMANCE**

**F.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE**

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

<u>Clause Number</u>	<u>Title</u>	<u>Date</u>
52.242-15	Stop-Work Order (Alternate I)	APR 1984
52.247-34	FOB Destination	NOV 1991

II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES

<u>Clause Number</u>	<u>Title</u>	<u>Date</u>
----------------------	--------------	-------------

None included by reference.

(End of Clause)

**F.2 PERIOD OF PERFORMANCE**

(a) The period of performance of this contract shall be March 1, 2008 through February 28, 2009. If applicable, the contract phase-in period shall be from February 1, 2008 through no later than February 29, 2008.

(b) In the event the Government elects to exercise its option(s) pursuant to the terms of this contract, the period of performance for each option shall be as set forth below:

<u>Contract Periods</u>	<u>Period of Performance</u>
Option 1	March 1, 2009 – February 28, 2010
Option 2	March 1, 2010 – February 28, 2011
Option 3	March 1, 2011 – February 29, 2012
Option 4	March 1, 2012 – February 28, 2013

**F.3 MSFC 52.237-91 PLACE OF PERFORMANCE (FEB 2001)**

The Contractor shall perform the work under this contract at George C. Marshall Space Flight Center, and at such other locations as may be approved in writing by the Contracting Officer.

(End of Clause)

**F.4 52.217-9 OPTION TO EXTEND THE TERM OF THE CONTRACT (MAR 2000)**

(a) The Government may extend the term of this contract by written notice to the Contractor prior to the expiration of the current period of performance provided that the Government shall give the Contractor a preliminary written notice of its intent to extend at least 30 days before the contract expires. The preliminary notice does not commit to the Government to an extension.

- (b) If the Government exercises this option, the extended contract shall be considered to include this option provision.
- (c) The total duration of this contract, including the exercise of any options under this clause shall not exceed 60 months.

(End of Clause)

**F.5 PHASE-IN PURCHASE ORDER (PO) AND PHASE-OUT**

(a) Contractor Phase-In PO

(1) The services provided by this Order are vital to the Government's overall effort. Therefore, continuity of these services must be maintained at a consistently high level without disruption. To this end, the Contractor shall conduct an orderly phase-in of contract activities prior to assumption of responsibility for the effort described in the PWS.

(2) The Contractor shall have up to 29 calendar days immediately prior to the effective date of the contract in which to conduct phase-in. Office space will not be provided by the Government during the phase-in period. During this time, the Contractor shall not be responsible for performance of the effort described in the PWS as it is understood that during phase-in the predecessor contractor(s) will be performing the work described in the PWS.

(3) On March 1, 2008, the Contractor shall assume full responsibility for the effort covered by the PWS.

(4) During phase-in the Contractor shall:

(i) Participate in meetings with the predecessor contractor(s) to identify and discuss problems or areas requiring attention during the phase-in period; and

(ii) Perform all activities described in the Contractor's phase-in plan submitted with its quotation, and all activities necessary to ensure effective transfer of all effort from the predecessor contractor(s) and readiness to assume full contract performance. As part of phase-in activities, the contractor shall provide the following: 1) Final Safety, Health and Environmental Plan; 2) Organizational Conflicts of Interest Avoidance Plan; 3) Badged Employee and Remote IT User Listing; 4) Position Risk Description for Non-NASA Employees; and 5) Qualified staff available and badged (in accordance with the Personal Identity Verification (PIV) Procedures) provided in Attachment J-18, and ready to assume performance.

(b) The total Firm-Fixed Price of the 29-day phase-in period is \$                      **[to be completed by the Offeror]**, and is included in a separate Purchase Order.

(c) The Contractor shall invoice the Government for phase-in activities only at the completion of the Purchase Order. The Government's obligations under this contract will not commence until after the successful completion of the separate phase-in Purchase Order.

(d) Contractor Phase-out

(1) Prior to contract completion, a successor contractor(s) may be selected to perform the work requirements covered by the PWS and TOs. The Contractor shall conduct an orderly phase-out of all required activities prior to completion of this contract and assumption of

**Final RFP NNM08125357R**

responsibility for the effort described in the PWS by a successor contractor(s). The Contractor shall remain responsible for the effort covered by the PWS and TOs during phase-out activities.

(2) Upon written notice by the Contracting Officer prior to the contract completion date, the Contractor shall conduct phase-out activities for up to 30 calendar days in accordance with FAR 52.237-3, Continuity of Services.

(End of Clause)

**[END OF SECTION]**

**SECTION G - CONTRACT ADMINISTRATION DATA**

**G.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE**

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

<u>Clause Number</u>	<u>Title</u>	<u>Date</u>
52.227-11	Patent Rights –Retention by the Contractor	JUN 1997

II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES

<u>Clause Number</u>	<u>Title</u>	<u>Date</u>
1852.227-11	Patent Rights--Retention by the Contractor (Short Form)	
1852.227-70	New Technology	MAY 2002
1852.242-71	Travel Outside of the United States	DEC 1988
1852.242-73	NASA Contractor Financial Management	NOV 2004
1852.245-70	Contractor Requests for Government-Owned Equipment	JUL 1997

(End of Clause)

**G.2 1852.216-87 SUBMISSION OF VOUCHERS FOR PAYMENT (MAR 1998)**

(a) The designated billing office for cost vouchers for purposes of the Prompt Payment clause of this contract is indicated below. Public vouchers for payment of costs shall include a reference to the number of this contract.

(b) (1) If the contractor is authorized to submit interim cost vouchers directly to the NASA paying office, the original voucher should be submitted to:

**NASA/George C. Marshall Space Flight Center  
RS23/Accounting Operations Office  
Marshall Space Flight Center, AL 35812**

**Or other designated billing office as specified in writing by the Contracting Officer.  
(i.e. NASA Shared Services Center, etc.)**

(2) For any period that the Defense Contract Audit Agency has authorized the Contractor to submit interim cost vouchers directly to the Government paying office, interim vouchers are not required to be sent to the Auditor, and are considered to be provisionally approved for payment, subject to final audit.

(3) Copies of vouchers should be submitted as directed by the Contracting Officer.

(c) If the contractor is not authorized to submit interim cost vouchers directly to the paying office as described in paragraph (b), the contractor shall prepare and submit vouchers as follows:

**Final RFP NNM08125357R**

(1) One original Standard Form (SF) 1034, SF 1035, or equivalent Contractor's attachment through the Contractor's cognizant DCAA office to the NASA paying office identified in Paragraph (b)(1)

(2) Five copies of SF 1034, SF 1035A, or equivalent Contractor's attachment to the following offices by insertion in the memorandum block of their names and addresses:

- (i) Copy 1 NASA Contracting Officer
- (ii) Copy 2 Auditor
- (iii) Copy 3 Contractor
- (iv) Copy 4 Contract administration office; and
- (v) Copy 5 Project management office.

(3) The Contracting Officer may designate other recipients as required.

(d) Public vouchers for payment of fee shall be prepared similarly to the procedures in paragraphs (b) or (c) of this clause, whichever is applicable, and be forwarded to the address specified in Paragraph (b)(1). This is the designated billing office for fee vouchers for purposes of the Prompt Payment clause of this contract.

(e) In the event that amounts are withheld from payment in accordance with provisions of this contract, a separate voucher for the amount withheld will be required before payment for that amount may be made.

(End of Clause)

**G.3 1852.227-72 DESIGNATION OF NEW TECHNOLOGY REPRESENTATIVE AND PATENT REPRESENTATIVE (JUL 1997)**

(a) For purposes of administration of the clause of this contract entitled "New Technology" or "Patent Rights -- Retention by the Contractor (Short Form)", whichever is included, the following named representatives are hereby designated by the Contracting Officer to administer such clause:

New Technology Representative

*NASA  
George C. Marshall Space Flight Center  
Attn: ED03/New Technology Representative  
Marshall Space Flight Center, AL 35812*

Patent Representative

*NASA  
George C. Marshall Space Flight Center  
Attn: LS01/Chief Intellectual Property Counsel  
Marshall Space Flight Center, AL 35812*

(b) Reports of reportable items, and disclosure of subject inventions, interim reports, final reports, utilization reports, and other reports required by the clause, as well as any correspondence with respect to such matters, should be directed to the New Technology Representative unless transmitted in response to correspondence or request from the Patent Representative. Inquires or requests regarding disposition of rights, election of rights, or related matters should be directed

to the Patent Representative. This clause shall be included in any subcontract hereunder requiring a "New Technology" clause or "Patent Rights--Retention by the Contractor (Short Form)" clause, unless otherwise authorized or directed by the Contracting Officer. The respective responsibilities and authorities of the above-named representatives are set forth in 1827.305-370 of the NASA FAR Supplement.

(End of Clause)

**G.4 1852.242-70 TECHNICAL DIRECTION (SEP 1993)**

(a) Performance of the work under this contract is subject to the written technical direction of the Contracting Officer Technical Representative (COTR), who shall be specifically appointed by the Contracting Officer in writing in accordance with NASA FAR Supplement 1842.270. "Technical direction" means a directive that approves approaches, solutions, designs, or refinements; fills in details or otherwise completes the general description of work or documentation items; shifts emphasis among work areas or tasks; or furnishes similar instruction to the Contractor. Technical direction includes requiring studies and pursuit of certain lines of inquiry regarding matters within the general tasks and requirements in Section C of this contract.

(b) The COTR does not have the authority to, and shall not, issue any instruction purporting to be technical direction that—

- (1) Constitutes an assignment of additional work outside the statement of work;
- (2) Constitutes a change as defined in the changes clause;
- (3) Constitutes a basis for any increase or decrease in the total estimated contract cost, the fixed fee (if any), or the time required for contract performance;
- (4) Changes any of the expressed terms, conditions, or specifications of the contract; or
- (5) Interferes with the contractor's rights to perform the terms and conditions of the contract.

(c) All technical direction shall be issued in writing by the COTR.

(d) The Contractor shall proceed promptly with the performance of technical direction duly issued by the COTR in the manner prescribed by this clause and within the COTR's authority. If, in the Contractor's opinion, any instruction or direction by the COTR falls within any of the categories defined in paragraph (b) of this clause, the Contractor shall not proceed but shall notify the Contracting Officer in writing within 5 working days after receiving it and shall request the Contracting Officer to take action as described in this clause. Upon receiving this notification, the Contracting Officer shall either issue an appropriate contract modification within a reasonable time or advise the Contractor in writing within 30 days that the instruction or direction is—

- (2) Rescinded in its entirety; or
- (3) Within the requirements of the contract and does not constitute a change under the changes clause of the contract, and that the Contractor should proceed promptly with its performance.

(e) A failure of the contractor and contracting officer to agree that the instruction or direction is both within the requirements of the contract and does not constitute a change under the changes

clause, or a failure to agree upon the contract action to be taken with respect to the instruction or direction, shall be subject to the Disputes clause of this contract.

(f) Any action(s) taken by the contractor in response to any direction given by any person other than the Contracting Officer or the COTR shall be at the Contractor's risk.

(End of Clause)

**G.5 1852.245-71 INSTALLATION-ACCOUNTABLE GOVERNMENT PROPERTY (NOV 2004)**

(a) (1) The Government property described in the clause at 1852.245-77, List of Installation-Accountable Property and Services, shall be made available to the Contractor on a no-charge basis for use in performance of this contract. This property shall be utilized only within the physical confines of the NASA installation that provided the property. Under this clause, the Government retains accountability for, and title to, the property, and the Contractor assumes the following user responsibilities:

(2) The Contractor shall retain responsibility for notifying the cognizant property custodians of all changes associated in status associated with installation provided property. All equipment users shall (1) report any missing or untagged (meeting the criteria for control) property to the cognizant property custodian; (2) notify the cognizant property custodian, supervisor, and the Installation Security Officer immediately if theft, damage, or loss of Government property is suspected; (3) ensure that programs and projects, or as otherwise authorized; (4) identify property not being actively used in pursuit of approved programs and projects; and (5) ensure that property is turned in to the Property Disposal Officer through the cognizant property custodian when no longer needed. Under no circumstances will the Contractor dispose of installation property.

(3) The contractor shall establish and adhere to a system of written procedures for compliance with these user responsibilities. Such procedures must include holding employees liable, when appropriate, for loss, damage, or destruction of Government property.

(b) (1) The official accountable recordkeeping, physical inventory, financial control, and reporting of the property subject to this clause shall be retained by the Government and accomplished by the installation Supply and Equipment Management Officer (SEMO) and Financial Management Officer. If this contract provides for the contractor to acquire property, title to which will vest in the Government, the following additional procedures apply:

(i) The contractor's purchase order shall require the vendor to deliver the property to the installation central receiving area;

(ii) The contractor shall furnish a copy of each purchase order, prior to delivery by the vendor, to the installation central receiving area:

(iii) The contractor shall establish a record of the property as required by FAR 45.5 and 1845.5, and furnish to the Industrial Property Officer a DD Form 1149 Requisition and Invoice/Shipping Document (or installation equivalent) to transfer accountability to the Government within 5 working days after receipt of the property by the contractor. The contractor is accountable for all contractor-acquired property until the property is transferred to the Government's accountability.

(iv) Contractor use of Government property at an off-site location and off-site subcontractor use require advance approval of the contracting officer and notification of

**Final RFP NNM08125357R**

the SEMO. The contractor shall assume accountability and financial reporting responsibility for such property. The contractor shall establish records and property control procedures and maintain the property in accordance with the requirements of FAR Part 45.5 until its return to the installation.

(2) After transfer of accountability to the Government, the contractor shall continue to maintain such internal records as are necessary to execute the user responsibilities identified in paragraph (a) and document the acquisition, billing, and disposition of the property. These records and supporting documentation shall be made available, upon request, to the SEMO and any other authorized representatives of the contracting officer.

(End of Clause)

**G.6 1852.245-77 LIST OF INSTALLATION-ACCOUNTABLE PROPERTY AND SERVICES (JUL 1997)**

In accordance with the clause at 1852.245-71, Installation-Accountable Government Property, the Contractor is authorized use of the types of property and services listed below, to the extent they are available, in the performance of this contract within the physical borders of the installation which may include buildings and space owned or directly leased by NASA in close proximity to the installation, if so designated by the Contracting Officer.

(a) Office space, work area space, and utilities. Government telephones are available for official purposes only; pay telephones are available for contractor employees for unofficial calls.

(b) General- and special-purpose equipment, including office furniture.

(1) Equipment to be made available is listed in Attachment J-9, page J-9-1. The Government retains accountability for this property under the clause at 1852.245-71, Installation-Accountable Government Property, regardless of its authorized location.

(2) If the Contractor acquires property, title to which vests in the Government pursuant to other provisions of this contract, this property also shall become accountable to the Government upon its entry into Government records as required by the clause at 1852.245-71, Installation-Accountable Government Property.

(3) The Contractor shall not bring to the installation for use under this contract any property owned or leased by the Contractor, or other property that the Contractor is accountable for under any other Government contract, without the Contracting Officer's prior written approval.

(c) Supplies from stores stock.

(d) Publications and blank forms stocked by the installation.

(e) Safety and fire protection for Contractor personnel and facilities.

(f) Installation service facilities: See Attachment J-9, pages J-9-2 through J-9-19.

(g) Medical treatment of a first-aid nature for Contractor personnel injuries or illnesses sustained during on-site duty.

(h) Cafeteria privileges for Contractor employees during normal operating hours.

**Final RFP NNM08125357R**

- (i) Building maintenance for facilities occupied by Contractor personnel.
- (j) Moving and hauling for office moves, movement of large equipment, and delivery of supplies. Moving services shall be provided on-site, as approved by the Contracting Officer.
- (k) The user responsibilities of the Contractor are defined in paragraph (a) of the clause at 1852.245-71, Installation-Accountable Government Property.

(End of Clause)

**G.7 MSFC 52.204-90 CONTRACTOR EMPLOYEE BADGING AND EMPLOYMENT  
TERMINATION CLEARANCE (JUL 2006)**

- (a) It is anticipated that performance of the requirements of this contract will require employee access to and picture badging by the Marshall Space Flight Center. Contractor requests for badging of employees shall be by MSFC Form 1739, "MSFC Contractor Badge/Decal Application." Requests for badging shall be submitted to the appointed Contracting Officer Technical Representative or the Contracting Officer for completion and approval prior to processing by the MSFC Protective Services Department.
- (b) The Contractor shall establish procedures to ensure that each badged employee is properly cleared in accordance with MSFC Form 383-1, "Contractor Employee Clearance Document," when the access is no longer needed.
- (c) Requests for copies of MSFC Forms 383-1, and 1739 shall be directed to the MSFC Protective Services Department, Marshall Space Flight Center, Alabama 35812.

(End of Clause)

**[END OF SECTION]**

**SECTION H - SPECIAL CONTRACT REQUIREMENTS**

**H.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE**

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

<u>CLAUSE NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
--------------------------	--------------	-------------

None included by reference.

II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES

<u>CLAUSE NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
1852.208-81	Restrictions On Printing And Duplicating	NOV 2004

(End of Clause)

**H.2 1852.209-71 LIMITATION OF FUTURE CONTRACTING (DEC 1988)**

(a) The Contracting Officer has determined that this acquisition may give rise to a potential organizational conflict of interest. Accordingly, the attention of prospective Offerors is invited to FAR Subpart 9.5--Organizational Conflicts of Interest.

(b) The nature of this conflict is the existence of conflicting roles that might bias the Contractor's judgment (See Clause H-3)

(c) The restrictions upon future contracting are as follows:

(1) If the Contractor, under the terms of this contract, or through the performance of tasks pursuant to this contract, is required to develop specifications or statements of work that are to be incorporated into a solicitation, the Contractor shall be ineligible to perform the work described in that solicitation as a prime or subcontractor under an ensuing NASA contract. This restriction shall remain in effect for a reasonable time, as agreed to by the Contracting Officer and the Contractor, sufficient to avoid unfair competitive advantage or potential bias (this time shall in no case be less than the duration of the initial production contract). NASA shall not unilaterally require the Contractor to prepare such specifications or statements of work under this contract.

(2) To the extent that the work under this contract requires access to proprietary, business confidential, or financial data of other companies, and as long as these data remain proprietary or confidential, the Contractor shall protect these data from unauthorized use and disclosure and agrees not to use them to compete with those other companies.

(End of Clause)

**H.3 ORGANIZATIONAL CONFLICTS OF INTEREST (OCI)**

(a) Pursuant to FAR 9.504, the Contracting Officer is responsible for identifying and evaluating potential Organization Conflicts of Interest early in the acquisition process and either avoiding, neutralizing, or mitigating such conflicts before contract award. The

**Final RFP NNM08125357R**

Offeror's/Teammates'/Subcontractors' attention is invited to this subpart and shall comply with these restrictions.

(b) The Contracting Officer has determined that during the performance of this contract, the successful Offeror or Subcontractor(s) may be put in the position of performing engineering technician and trade support services on space flight hardware, items, and other critical systems designed or built in whole or in part by the Contractor. (For purposes of this clause the term "Contractor" includes any division, separate company, or subsidiary that is wholly-owned by the parent corporation, and includes any of the prime Contractor's teammates and or Subcontractor(s).) The existence of these conflicting roles might bias the contractor's judgment.

(c) Within two working days of receiving any work request that causes such a conflict to arise, the Contractor shall notify the Contracting Officer and provide a report detailing the following:

- (1) Nature of the Conflict
- (2) Plan for avoiding, neutralizing, or mitigating the conflict
- (3) The benefits and risks associated with acceptance of the plan

(d) The Contracting Officer shall review the report and determine which of the following is in the best interests of the Government and shall so advise the Contractor:

- (1) The Contractor shall perform consistent with the request for work
- (2) The Contractor shall not perform the work
- (3) The work will be removed from the contract
- (4) The work may be performed by the Government from another source not possessing the conflict of interest
- (5) The Contractor may identify a subcontractor who can provide the services and all deliverables shall be delivered directly to the Contracting Officer's Technical Representative and the Contracting Officer. This subcontract will not obviate the contractor's responsibility for acceptable technical performance under the Contract.

(e) Any limitations on future contracting resulting from the Contractor's or its Subcontractor's in preparation of specifications/statements of work or access to proprietary, business confidential, or financial data of another company are identified in Clause H.2 "Limitation of Future Contracting"

(f) The terms of this clause and application of this FAR Subpart to the contract are not subject to negotiation.

(g) The contractor shall include this clause in all subcontract(s)

(End of Clause)

**H.4 1852.216-80 TASK ORDERING PROCEDURE (OCT 1996)**

(a) Only the Contracting Officer may issue task orders to the Contractor, providing specific authorization or direction to perform work within the scope of the contract and as specified in the schedule. The Contractor may incur costs under this contract in performance of task orders and task order modifications issued in accordance with this clause. No other costs are authorized unless otherwise specified in the contract or expressly authorized by the Contracting Officer.

(b) Prior to issuing a task order, the Contracting Officer shall provide the Contractor with the following data:

**Final RFP NNM08125357R**

- (e) A functional description of the work identifying the objectives or results desired from the contemplated task order.
- (f) Proposed performance standards to be used as criteria for determining whether the work requirements have been met.
- (g) A request for a task plan from the Contractor to include the technical approach, period of performance, appropriate cost information, and any other information required to determine the reasonableness of the Contractor's proposal.
- (c) Within   5   calendar days after receipt of the Contracting Officer's request, the Contractor shall submit a task plan conforming to the request.
- (d) After review and any necessary discussions, the Contracting Officer may issue a task order to the Contractor containing, as a minimum, the following:
  - (1) Date of the order.
  - (2) Contract number and order number.
  - (3) Functional description of the work identifying the objectives or results desired from the task order, including special instructions or other information necessary for performance of the task.
  - (4) Performance standards, and where appropriate, quality assurance standards.
  - (5) Maximum dollar amount authorized (cost and fee or price). This includes allocation of award fee among award fee periods, if applicable.
  - (6) Any other resources (travel, materials, equipment, facilities, etc.) authorized.
  - (7) Delivery/performance schedule including start and end dates.
  - (8) If contract funding is by individual task order, accounting and appropriation data.
- (e) The Contractor shall provide acknowledgment of receipt to the Contracting Officer within   3   calendar days after receipt of the task order.
- (f) If time constraints do not permit issuance of a fully defined task order in accordance with the procedures described in paragraphs (a) through (d), a task order which includes a ceiling price may be issued.
- (g) The Contracting Officer may amend tasks in the same manner in which they were issued.
- (h) In the event of a conflict between the requirements of the task order and the Contractor's approved task plan, the task order shall prevail.

(End of Clause)

**H.5 SUPPLEMENTAL TASK ORDERING PROCEDURES**

- (a) This clause supplements the Task Ordering Procedure defined in clause H.4, Task Ordering Procedure.

**Final RFP NNM08125357R**

- (b) Work to be performed under this portion of the requirement will be within the parameters of the PWS, paragraph 3.0, and more clearly defined in the Task Orders (TOs) approved by the Contracting Officer and the Contracting Officer's Technical Representative. Additional work will be approved and issued at the IDIQ Task Order WBS elements Level 2 or lower. An overview and flowchart of this process is provided in Attachment J-4, IDIQ Task Order Flow Process.
- (c) When the Government issues a Task Order Request (TOR) in accordance with paragraph (b) of Clause H.5, the Contractor shall prepare as part of the Task Order Plan (TOP), the Contractor's estimate of the labor categories, labor hours, other direct costs, and indirect cost required to perform the Task Order requirements. In preparing the estimate, it is mutually agreed and understood that the Contractor or its Subcontractor(s) shall use the labor categories and the lower of the Contractor's/Subcontractor's average actual rates or the Not-to-Exceed (NTE) rates set forth in Attachment J-6, Schedule of Fully Burdened Labor Rates, for each labor category. It is further agreed and understood that the maximum available award fee, equating to a percentage, set forth in Attachment J-6, shall be used by the Contractor to calculate the maximum potential award fee dollars for each Task Order.
- (d) The TOR will specify a period of performance not to exceed the ultimate contract period of performance (end of Option Year 4). The TOP shall include estimated cost and maximum potential award fee by each evaluation period within the specified task period of performance. Upon exercise of the contract option periods, the TOs with estimates for the exercised option period shall automatically renew.
- (e) Each TO will include the period covered, estimated cost, and maximum potential award fee. At the end of each award fee evaluation period, the current evaluation period values (estimated cost and maximum potential award fee) of all TOs that were active during that evaluation period will be summed and the resulting total value summation will be used as the maximum potential award fee values for that evaluation period. A reconciling unilateral modification to the contract will be issued at that time revising Clause B.2, to reflect the summation of the current total task order values. At the discretion of the Contracting Officer (CO), these reconciling unilateral modifications to reflect the current total TO value summation may be issued at other times as necessary.
- (f) A summation of the issued task orders is provided in Attachment J-7, Task Orders by Reference, which will also be revised unilaterally on a periodic basis.
- (g) The assigned CO and Contracting Officer's Technical Representative (COTR) will review and approve each TO and any revision thereto. The Government will provide a list of any other personnel to be included in the routing of TOs for review and concurrence. The Government retains the right to disapprove any Task Order Plans (TOPs) at the sole discretion of the Government.
- (h) The Contractor shall not begin work until the approved TO is received; however, in extreme emergency situations, the Contractor may be authorized by the CO to begin work immediately. The Contractor shall process the applicable TO within 5 calendar days of being notified of an emergency, and shall not incur costs exceeding \$5,000 during the 5 day period, unless an advance waiver is granted by the Contracting Officer. The Government and Contractor shall finalize the TO within 10 calendar days.
- (i) Approval of TOs does not relieve the Contractor of its obligation under the "Limitation of Funds" clause of the contract.

(End of Clause)

**H.6 TASK ORDER COST INCREASE NOTIFICATION REQUIREMENTS**

(a) The requirements of this clause are in conjunction with the Limitation of Cost clause or the Limitation of Funds clause of this contract.

(b) The Contractor shall notify the Contracting Officer in writing when the Contractor has reason to believe that the total cost for performance of any individual task order, exclusive of any fee, will be either greater or substantially less than the total estimated cost stated in the task order. Notification shall not be delayed pending preparation of a proposal.

(c) A proposal is required to support a request for an increase in the estimated cost of a task order. The proposal should be submitted as soon as possible after the above notification but no later than 30 days before the incurred costs are expected to exceed the estimated cost. This will allow adequate time for the Government to evaluate the proposal and to mutually establish any increase in estimated cost with the Contractor.

(d) (1) The proposal shall be submitted in the following format unless some other format is directed or approved by the Contracting Officer:

- Incurred costs to date
- Projected cost to completion
- Total cost at completion
- Current negotiated estimated cost
- Requested increase in estimated cost

(2) The “projected cost to completion” shall consist of the following “other than cost or pricing data” unless the Contracting Officer requests or approves the submittal of a greater or lesser amount of information:

(i) Elements of cost with supporting detail for estimated direct labor hours, direct and indirect rates, materials and subcontracts, and other elements.

(ii) Supporting explanation for the increases and projections, sufficient for the Government to understand the reasons for the increased estimated cost.

(End of clause)

**H.7 1852.223-70 SAFETY AND HEALTH (APR 2002)**

(a) Safety is the freedom from those conditions that can cause death, injury, occupational illness, damage to or loss of equipment or property, or damage to the environment. NASA's safety priority is to protect: (1) the public, (2) astronauts and pilots, (3) the NASA workforce (including contractor employees working on NASA contracts), and (4) high-value equipment and property.

(b) The Contractor shall take all reasonable safety and occupational health measures in performing this contract. The Contractor shall comply with all Federal, State, and local laws applicable to safety and occupational health and with the safety and occupational health standards, specifications, reporting requirements, and any other relevant requirements of this contract.

**Final RFP NNM08125357R**

(c) The Contractor shall take, or cause to be taken, any other safety, and occupational health measures the Contracting Officer may reasonably direct. To the extent that the Contractor may be entitled to an equitable adjustment for those measures under the terms and conditions of this contract, the equitable adjustment shall be determined pursuant to the procedures of the changes clause of this contract; provided, that no adjustment shall be made under this Safety and Health clause for any change for which an equitable adjustment is expressly provided under any other clause of the contract.

(d) The Contractor shall immediately notify and promptly report to the Contracting Officer or a designee any accident, incident, or exposure resulting in fatality, lost-time occupational injury, occupational disease, contamination of property beyond any stated acceptable limits set forth in the contract Schedule; or property loss of \$25,000 or more, or Close Call (a situation or occurrence with no injury, no damage or only minor damage (less than \$1,000) but possesses the potential to cause any type mishap, or any injury, damage, or negative mission impact) that may be of immediate interest to NASA, arising out of work performed under this contract. The Contractor is not required to include in any report an expression of opinion as to the fault or negligence of any employee. In addition, service contractors (excluding construction contracts) shall provide quarterly reports specifying lost-time case rate, number of lost-time injuries, exposure, and accident/incident dollar losses as specified in the contract Schedule.

(e) The Contractor shall investigate all work-related incidents, accidents, and Close Calls, to the extent necessary to determine their causes and furnish the Contracting Officer a report, in such form as the Contracting Officer may require, of the investigative findings and proposed or completed corrective actions.

(f) (1) The Contracting Officer may notify the Contractor in writing of any noncompliance with this clause and specify corrective actions to be taken. When the Contracting Officer becomes aware of noncompliance that may pose a serious or imminent danger to safety and health of the public, astronauts and pilots, the NASA workforce (including contractor employees working on NASA contracts), or high value mission critical equipment or property, the Contracting Officer shall notify the Contractor orally, with written confirmation. The Contractor shall promptly take and report any necessary corrective action.

(2) If the Contractor fails or refuses to institute prompt corrective action in accordance with subparagraph (f)(1) of this clause, the Contracting Officer may invoke the stop-work order clause in this contract or any other remedy available to the Government in the event of such failure or refusal.

(g) The Contractor (or subcontractor or supplier) shall insert the substance of this clause, including this paragraph (g) and any applicable Schedule provisions and clauses, with appropriate changes of designations of the parties, in all solicitations and subcontracts of every tier, when one or more of the following conditions exist:

- (1) The work will be conducted completely or partly on premises owned or controlled by the Government.
- (2) The work includes construction, alteration, or repair of facilities in excess of the simplified acquisition threshold.
- (3) The work, regardless of place of performance, involves hazards that could endanger the public, astronauts and pilots, the NASA workforce (including Contractor employees working on NASA contracts), or high value equipment or property, and the hazards are not

**Final RFP NNM08125357R**

adequately addressed by Occupational Safety and Health Administration (OSHA) or Department of Transportation (DOT) regulations (if applicable).

(4) When the Contractor (or subcontractor or supplier) determines that the assessed risk and consequences of a failure to properly manage and control the hazard(s) warrants use of the clause.

(h) The Contractor (or subcontractor or supplier) may exclude the provisions of paragraph (g) from its solicitation(s) and subcontract(s) of every tier when it determines that the clause is not necessary because the application of the OSHA and DOT (if applicable) regulations constitute adequate safety and occupational health protection. When a determination is made to exclude the provisions of paragraph (g) from a solicitation and subcontract, the Contractor must notify and provide the basis for the determination to the Contracting Officer. In subcontracts of every tier above the micro-purchase threshold for which paragraph (g) does not apply, the Contractor (or subcontractor or supplier) shall insert the substance of paragraphs (a), (b), (c), and (f) of this clause).

(i) Authorized Government representatives of the Contracting Officer shall have access to and the right to examine the sites or areas where work under this contract is being performed in order to determine the adequacy of the Contractor's safety and occupational health measures under this clause.

(j) The contractor shall continually update the safety and health plan when necessary. In particular, the Contractor shall furnish a list of all hazardous operations to be performed, and a list of other major or key operations required or planned in the performance of the contract, even though not deemed hazardous by the Contractor. NASA and the Contractor shall jointly decide which operations are to be considered hazardous, with NASA as the final authority. Before hazardous operations commence, the Contractor shall submit for NASA concurrence –

- (1) Written hazardous operating procedures for all hazardous operations; and/or
- (2) Qualification standards for personnel involved in hazardous operations.

(End of Clause)

**H.8 1852.223-75 MAJOR BREACH OF SAFETY OR SECURITY (FEB 2002)**

(a) Safety is the freedom from those conditions that can cause death, injury, occupational illness, damage to or loss of equipment or property, or damage to the environment. Safety is essential to NASA and is a material part of this contract. NASA's safety priority is to protect: (1) the public; (2) astronauts and pilots; (3) the NASA workforce (including contractor employees working on NASA contracts); and (4) high-value equipment and property. A major breach of safety may constitute a breach of contract that entitles the Government to exercise any of its rights and remedies applicable to material parts of this contract, including termination for default. A major breach of safety must be related directly to the work on the contract. A major breach of safety is an act or omission of the Contractor that consists of an accident, incident, or exposure resulting in a fatality or mission failure; or in damage to equipment or property equal to or greater than \$1 million; or in any "willful" or "repeat" violation cited by the Occupational Safety and Health Administration (OSHA) or by a state agency operating under an OSHA approved plan.

(b) Security is the condition of safeguarding against espionage, sabotage, crime (including computer crime), or attack. A major breach of security may constitute a breach of contract that entitles the Government to exercise any of its rights and remedies applicable to material parts of

this contract, including termination for default. A major breach of security may occur on or off Government installations, but must be related directly to the work on the contract. A major breach of security is an act or omission by the Contractor that results in compromise of classified information, illegal technology transfer, workplace violence resulting in criminal conviction, sabotage, compromise or denial of information technology services, equipment or property damage from vandalism greater than \$250,000, or theft greater than \$250,000.

(c) In the event of a major breach of safety or security, the Contractor shall report the breach to the Contracting Officer. If directed by the Contracting Officer, the Contractor shall conduct its own investigation and report the results to the Government. The Contractor shall cooperate with the Government investigation, if conducted.

(End of Clause)

**H.9 1852.225-70 EXPORT LICENSES (FEB 2000)**

(a) The Contractor shall comply with all U.S. export control laws and regulations, including the International Traffic in Arms Regulations (ITAR), 22 CFR Parts 120 through 130, and the Export Administration Regulations (EAR), 15 CFR Parts 730 through 799, in the performance of this contract. In the absence of available license exemptions/exceptions, the Contractor shall be responsible for obtaining the appropriate licenses or other approvals, if required, for exports of hardware, technical data, and software, or for the provision of technical assistance.

(b) The Contractor shall be responsible for obtaining export licenses, if required, before utilizing foreign persons in the performance of this contract, including instances where the work is to be performed on-site at MSFC, where the foreign person will have access to export-controlled technical data or software.

(c) The Contractor shall be responsible for all regulatory record keeping requirements associated with the use of licenses and license exemptions/exceptions.

(d) The Contractor shall be responsible for ensuring that the provisions of this clause apply to its subcontractors.

(End of Clause)

**H.10 1852.235-71 KEY PERSONNEL AND FACILITIES (MAR 1989)**

(a) The personnel and/or facilities listed below (or specified in the contract Schedule) are considered essential to the work being performed under this contract. Before removing, replacing, or diverting any of the listed or specified personnel or facilities, the Contractor shall (1) notify the Contracting Officer reasonably in advance and (2) submit justification (including proposed substitutions) in sufficient detail to permit evaluation of the impact on this contract.

(b) The Contractor shall make no diversion without the Contracting Officer's written consent; provided that the Contracting Officer may ratify in writing the proposed change, and that ratification shall constitute the Contracting Officer's consent required by this clause.

(c) The list of personnel and/or facilities (shown below or as specified in the contract Schedule) may, with the consent of the contracting parties, be amended from time to time during the course of the contract to add or delete personnel and/or facilities.

**[Offeror shall provide a list of the personnel and/or facilities considered essential]**

**TO BE COMPLETED BY THE OFFEROR**

(End of Clause)

**H.11 1852.242-72 OBSERVANCE OF LEGAL HOLIDAYS (AUG 1992) -- ALTERNATE II (OCT 2000)**

(a) The on-site Government personnel observe the following holidays:

New Year's Day  
Labor Day  
Martin Luther King, Jr.'s Birthday  
Columbus Day  
President's Day  
Veterans Day  
Memorial Day  
Thanksgiving Day  
Independence Day  
Christmas Day

Any other day designated by Federal statute, Executive order, or the President's proclamation.

(b) When any holiday falls on a Saturday, the preceding Friday is observed. When any holiday falls on a Sunday, the following Monday is observed. Observance of such days by Government personnel shall not by itself be cause for an additional period of performance or entitlement of compensation except as set forth within the contract.

(e) When the NASA installation grants administrative leave to its Government employees (e.g., as a result of inclement weather, potentially hazardous conditions, or other special circumstances), Contractor personnel working on-site should also be dismissed. However, the contractor shall provide sufficient on-site personnel to perform round-the-clock requirements of critical work already in process, unless otherwise instructed by the Contracting Officer or authorized representative.

(f) Whenever administrative leave is granted to Contractor personnel pursuant to paragraph (e) of this clause, it shall be without loss to the Contractor. The cost of salaries and wages to the Contractor for the period of any such excused absence shall be a reimbursable item of cost under this contract for employees in accordance with the Contractor's established accounting policy.

(End of clause)

**H.12 MSFC 52.223-90 ASBESTOS MATERIAL (JUN 2002)**

During performance of this contract, Contractor personnel performing work in MSFC buildings may come in contact with materials containing asbestos. MSFC Buildings 4200, 4201, 4202, 4612, 4619, 4620, 4623, 4663 and 4666 are of special concern since they are known to contain a sprayed on fire insulation on or above the ceiling, usually located on the metal or concrete structure of the buildings. These buildings and all other MSFC buildings may contain asbestos in floor tile, pipe and lagging insulation, exterior siding, roofing felt, and many other building materials. Prior to disturbing suspected asbestos material in any manner, the Contractor shall notify MSFC's Occupational Medicine and Environmental Health Services, for guidance. Contractor shall be responsible for ensuring that all Contractor personnel working onsite are made aware of and comply with this clause.

(End of Clause)

**H.13 MSFC 52.223-91 HAZARDOUS MATERIAL REPORTING (AUG 2005)**

(a) If during the performance of this contract, the Contractor transports or accepts delivery of any hazardous materials (hazardous as defined under the latest version of Federal Standard No. 313, including revisions adopted during the term of the contract) on-site to the Marshall Space Flight Center, the hazardous material shall be processed through MSFC Central Receiving to be bar-coded for inventory. Chemical containers shall be managed in accordance with the provisions of MWI 8550.5, "Hazardous Material Management." The Contractor shall be responsible for ensuring that all Contractor/subcontractor personnel are made aware of and comply with this clause.

(b) Nothing contained in this clause shall relieve the Contractor from complying with applicable Federal, State, and local laws, codes, ordinances, and regulations (including the obtaining of licenses and permits) in connection with hazardous material; or with other clauses regarding hazardous materials which may be contained in the order.

(End of Clause)

**H.14 SECURITY/BADGING REQUIREMENTS FOR FOREIGN NATIONAL VISITORS AND EMPLOYEES OF FOREIGN CONTRACTORS**

(a) An employee of a domestic Marshall Space Flight Center (MSFC) contractor or its subcontractor who is not a U.S. citizen (foreign national) may not be admitted to the MSFC site for purposes of performing work without special arrangements. In addition, all employees or representatives of a foreign MSFC contractor/subcontractor may not be admitted to the MSFC site without special arrangements. For employees as described above, advance notice must be given to the MSFC Protective Services Office at least 2 months prior to the scheduled need for access to the site so that instructions on obtaining access may be provided.

(b) All visit/badge requests for persons described in paragraph (a) above must be entered in the NASA Foreign National Management System (NFMMS) for acceptance, review, concurrence and approval purposes. When an authorized company official requests a MSFC badge for site access, he/she is certifying that steps have been taken to ensure that its contractor or subcontractor employees, visitors, or representatives will not be given access to export-controlled or classified information for which they are not authorized. The authorized company officials shall serve as the contractor's representative(s) in certifying that all visit/badge request forms are processed in accordance with MSFC security and export control procedures. No foreign national, representative, or resident alien contractor/subcontractor employee shall be granted access into MSFC until a completed request has been approved and processed through the NFMMS. Unescorted access will not be granted unless the MSFC Protective Services Office has completed a favorable National Agency Check (NAC).

(c) The contractor agrees that it will not employ for the performance of work onsite at the MSFC any individuals who are not legally authorized to work in the United States. If the MSFC Industrial Security Specialist or the contracting officer has reason to believe that any employee of the contractor may not be legally authorized to work in the United States and/or on the contract, the contractor may be required to furnish copies of Form I-9 (Employment Eligibility Verification), U.S. Department of Labor Application for Alien Employment Certification, and any other type of employment authorization document.

(d) The contractor agrees to provide the information requested by the MSFC Protective Services Office in order to comply with NASA policy directives and guidelines related to foreign visits to NASA facilities so that (1) the visitor/employee/ representative may be allowed access to MSFC or other NASA Centers for performance of this contract, (2) required investigations can be conducted, and (3) required annual or revalidation reports can be submitted to NASA Headquarters. All requested information must be submitted in a timely manner in accordance with instructions provided by MSFC or any other Center to be visited

(End of Clause)

#### **H.15 MSFC 52.223-92 ENVIRONMENTAL – GENERAL CLAUSE**

NASA/Marshall has developed and maintains an Environmental Management System, in accordance with Executive Order 13148, to support and implement its environmental policy of:

“Enabling Marshall’s mission through environmental compliance and stewardship and by providing a safe and healthful workplace.” (MPD 8500.1, “MSFC Environmental Policy”).

Contractors performing on-site shall comply with all applicable Environmental polices and procedures including, but not limited to, MPD 8500.1 and MPR 8500.1, “MSFC Environmental Management Program.” MSFC contractors requiring on-site activities that could potentially impact the environment shall be responsible for following all established NASA/Marshall environmental procedures. These procedures and other applicable policies and procedures are available by contacting the NASA/Marshall Environmental Engineering & Occupational Health Office. Failure to comply with environmental policies and procedures, may result in damage to the environment, and could potentially result in regulatory penalties against NASA and/or the Contractor, and Contractor loss of access to NASA/Marshall facilities.

(End of Clause)

#### **H.16 SAFETY PERFORMANCE EVALUATION**

**1. Contractor Responsibility.** The Contractor is responsible for maintaining an effective safety program during the course of the contract with a goal to achieve a world-class program within the term of the contract. The Contractor will ensure that the requirements of the MSFC approved Contractor’s Safety and Health Plan and applicable Data Requirement Documents (DRD 1102SA-001, 1102SA-003 provided in Attachment J-2, Data Procurement Document) are met. Contractor safety performance evaluation will be based on the MSFC safety program elements. The Contractor shall conduct a quarterly self-evaluation based on these criteria. The CO/COTR, in coordination with the MSFC Safety Office, will validate the Contractor’s self-evaluation. Every quarter, the agreed score will be used to assess performance appropriately - positive or negative. For the purpose of assessing the quarterly score, the Contractor and the CO/COTR, in coordination with the MSFC Safety Office, will reach a mutually agreeable determination based on the metrics reflected in the attachment. In cases where the Contractor and CO/COTR cannot reach agreement, the MSFC Ombudsman will hear arguments from both sides and make a final decision. This process shall not preclude the Contracting Officer from taking immediate action for any serious, willful, blatant, or continued violations of MSFC safety policy or procedures.

**2. Evaluation Criteria.** Contractor self-evaluation and Government validation will be based on the applicable elements and sub-elements of the MSFC safety program shown below. Specific criteria are shown on Attachment J-11 entitled “Safety and Health Management Implementation Guide and Assessment Matrix.” Deviations from the matrix criteria may be made, for cause, and

must be approved by the COTR, CO and Government Safety Representative. It should be noted that Element 1 has a management and an employee component. These are simply averaged to obtain the score for Element 1. The result should be carried to the second decimal point.

<b>Management Commitment and Employee Involvement (ELEMENT 1)</b>	<b>Hazard Prevention and Control (ELEMENT 3)</b>
Documented Safety Policy and Goals	Hazard Identification Process
Safety Committees	Facility and Equipment Maintenance
Safety Meetings	Emergency Program and Drills
Subcontractor Safety	Emergency Medical Care Program
Resources	Personal Protective Equipment
Access to Professional Safety Staff	Health Program
Accountability (Disciplinary Program)	
Annual Evaluation	

<b>System and Worksite Hazard Analysis (ELEMENT 2)</b>	<b>Safety and Health Training (ELEMENT 4)</b>
Complete and Update Baseline Surveys	Employee
Performance Analysis of New Work	Supervisor
Job Hazard Analysis/Process Review	Manager
Self-Inspection	
Employee Hazard Reporting	
Mishap/Close Call Investigation	
Injury/Illness Rates	

**3. Performance Recognition.** Contractor performance will be recognized as follows:

- Level I** – Annual rating score of  $\geq 36$  based on the average of the quarterly assessment scores, and a Lost-Time Case (LTC) Rate. *Formal award with public recognition*

$\leq 50\%$  of the LTC for the applicable Standard Industrial Classification (SIC) rate. *Appropriate past performance referral provided.*

**Exception:** Contractors with less than 100 employees located onsite MSFC. To be rated in Level I, the Contractor shall have no lost time injuries during the past year.

- Level II** – Annual rating score of  $\geq 28$  based on the average quarterly assessment score, and a Lost-Time Case (LTC) Rate < the applicable Standard Industrial Classification (SIC) rate and the scores remain the same, or reflect improved performance, from the previous period. If scores reflect a decrease in performance, no letter of commendation will be issued. *Formal Letter of Commendation*

*Will impact contract evaluation and past performance referrals.*

**Exception:** Contractors with less than 100 employees located onsite MSFC. To be rated in Level II, the Contractor shall have no more than one lost time injury during the past year.

Final RFP NNM08125357R

- **Level III** – Quarterly rating score of  $\leq 16$  or a Lost-Time Case (LTC) Rate  $\geq$  than the Standard Industrial Classification (SIC) rate. *Formal letter expressing concern. Corrective Action Plan Requested. Data Placed in Past Performance Database. **Failure to improve could result in contract options not being exercised.***

**Exception:** Contractors with less than 100 employees located onsite MSFC. *A Level III rating will be given to a contractor having greater than two lost time injuries during the past year.*

- If contractor's Safety Performance evaluation does not fall within the above categories. *No recognition.*

**NOTE:** The most current Department of Labor SIC rate, effective at the beginning of the annual evaluation period, will be utilized for LTC Rate evaluation. Lost Time Cases shall be recorded in accordance with NASA requirements specified in MWI 8621.1, "Close Call and Mishap Reporting and Investigation Program." Final decisions on any disputed lost time injury determinations will be handled by established Government regulatory procedures.

**4. Contractor Accountability for Mishaps.** The Contractor shall not be held accountable for injuries to their personnel or damage to the property they control that is caused by individuals or situations clearly outside the control of their contract.

**5. Evaluation Process.** The evaluation process will be based on the major elements and their sub-elements cited in Paragraph 2. The evaluation process will include these steps:

- Contractor to conduct quarterly self-assessment and assign numerical score to each element.
- Contractor self-assessments will address compliance with their approved Safety and Health Plan.
- Contractor to have self-assessment validated by CO/ COTR and S&MA Directorate.
- On an annual basis, the Contracting Officer will apply contract incentives/recognition or consequences based on the average quarterly scores. The Contracting Officer will make a determination on a quarterly basis for items requested in paragraph 6 that are not reported. (Also, see paragraph 7 below.)

The evaluation process will use the Safety and Health Management Implementation Guide and Assessment Matrix at Attachment J-11.

**6. Safety Metric Reporting.** The Contractor shall utilize MSFC Form 4371 to submit, on a monthly basis, information on all personnel and property mishaps that meet the criteria of a NASA Recordable Mishap (NPG 8621.1). Close calls and minor cases, including first aid and non-injury cases, shall be reported when there is a potential lessons learned or when action needs to be taken to prevent more serious damage, loss, or personal injury, (including communication of the incident to promote employee awareness). The report shall also include total hours worked and the number of safety inspections and safety meetings conducted during the month.

The Contractor shall also utilize NASA Form 1627 to include details of any mishap, results of the investigation, and the corrective action plan.

**7. Failure to Report.** If the Contractor fails to report the items in paragraph 6 above in accordance with this contract, an amount of \$1,000 will be deducted for each occurrence of failure to report the required data.

(End of Clause)

**H.17 ASSOCIATE CONTRACTOR AGREEMENTS**

(a) In order to achieve the requirements of this contract, the Contractor shall establish, in conjunction with the Contracting Officer (CO) and Contracting Officer's Technical Representative (COTR), the means for coordination and exchange of information with multiple onsite MSFC contractors. The purpose of this clause is to facilitate cooperation among MSFC professional services contractors in providing support for accomplishing MSFC's mission. The Contractor Agreements contemplated by this clause, established within 180 days after contract award, will be added by contract modification to this paragraph as required.

(b) MSFC requires Associate Contractor Agreements (prime, teammates, and subcontractors), including, but not limited to, the following:

Systems Development And Operations Support (SDOS)	Teledyne Brown Engineering
Pressurants, Propellants and Calibration (PP&C)	Teledyne Brown Engineering
Engineering, Science & Technical Services (ESTS)	Jacobs Technology, Inc.

(c) The Contractor shall document agreements with other Associate Contractors described in (a) above via Associate Contractor agreements. The Government will not be a party in such Associate Contractor agreements. A copy of each such agreement shall be provided to the CO. All costs associated with such agreements are included in the negotiated cost of this contract.

(d) The Contractor is not relieved of any contract requirements or entitled to any adjustments to the contract terms because of the failure to resolve a disagreement with an Associate Contractor. Liability for the improper disclosure of any proprietary data contained in or referenced by any agreement shall rest with the parties to the agreement, and not the Government.

(End of Clause)

**[END OF SECTION]**

## PART II - CONTRACT CLAUSES

## SECTION I - CONTRACT CLAUSES

## I.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these addresses:

FAR Clauses: <http://www.arnet.gov/far/>

NASA FAR Supplement clauses: <http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm>

MSFC Clauses: [http://ec.msfc.nasa.gov/msfc/msfc\\_uni.html](http://ec.msfc.nasa.gov/msfc/msfc_uni.html)

## PART A: FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

<u>Clause Number</u>	<u>Title</u>	<u>Date</u>
52.202-1	Definitions	JUL 2004
52.203-3	Gratuities	APR 1984
52.203-5	Covenant Against Contingent Fees	APR 1984
52.203-6	Restrictions on Subcontractor Sales to the Government	SEP 2006
52.203-7	Anti-Kickback Procedures	JUL 1995
52.203-8	Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity	JAN 1997
52.203-10	Price or Fee Adjustment for Illegal or Improper Activity	JAN 1997
52.203-12	Limitation on Payments to Influence Certain Federal Transactions	SEP 2005
52.204-2	Security Requirements	AUG 1996
52.204-4	Printed or Copied Double-Sided on Recycled Paper	AUG 2000
52.204-7	Central Contractor Registration	JUL 2006
52.204-9	Personal Identity Verification of Contractor's Personnel (See Attachment J-18 for details)	NOV 2006
52.209-6	Protecting the Government's Interest When Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment	SEP 2006
52.211-15	Defense Priority and Allocation Requirements	SEP 1990
52.215-2	Audit and Records-Negotiation	JUN 1999
52.215-8	Order of Precedence-Uniform Contract Format	OCT 1997
52.215-10	Price Reduction for Defective Cost or Pricing Data	OCT 1997
52.215-11	Price Reduction for Defective Cost or Pricing Data-Modifications	OCT 1997
52.215-12	Subcontractor Cost or Pricing Data	OCT 1997
52.215-13	Subcontractor Cost or Pricing Data-Modifications	OCT 1997
52.215-14	Integrity of Unit Prices	OCT 1997
52.215-15	Pension Adjustments and Asset Reversions	OCT 2004
52.215-17	Waiver of Facilities Capital Cost of Money	OCT 1997
52.215-18	Reversion or Adjustment of Plans for Postretirement Benefits (PRB) Other Than Pensions	JUL 2005

**Final RFP NNM08125357R**

<u>Clause Number</u>	<u>Title</u>	<u>Date</u>
52.215-21	Requirements for Cost or Pricing Data or Information Other Than Cost or Pricing Data-Modifications Alternate I – <b><u>Microsoft Excel (PC Compatible)</u></b> Alternate II – <b><u>Send Copies to ACO &amp; DCAA</u></b> Alternate III – <b><u>TBD by CO at time of submission</u></b>	OCT 1997
52.216-7	Allowable Cost and Payment	DEC 2002
52.217-8	Option to Extend Services – <b><u>30 days</u></b>	NOV 1999
52.219-8	Utilization of Small Business Concerns	MAY 2004
52.219-14	Limitations on Subcontracting	DEC 1996
52.222-1	Notice to the Government of Labor Disputes	FEB 1997
52.222-2	Payment for Overtime Premiums <b><u>“Insert in Section B”</u></b>	JUL 1990
52.222-3	Convict Labor	JUN 2003
52.222-4	Contract Work Hours and Safety Standards Act- Overtime Compensation	JUL 2005
52.222-21	Prohibition of Segregated Facilities	FEB 1999
52.222-26	Equal Opportunity	MAY 2006
52.222-35	Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans	SEP 2006
52.222-36	Affirmative Action for Workers with Disabilities	JUN 1998
52.222-37	Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans	SEP 2006
52.222-41	Service Contract Act of 1965, As Amended	JUL 2005
52.223-3	Hazardous Material Identification and Material Safety Data (Alternate I)	JUL 1995
52.223-5	Pollution Prevention and Right-to-Know Information Alternate I and Alternate II	AUG 2003
52.223-6	Drug-Free Workplace	MAY 2001
52.223-10	Waste Reduction Program	AUG 2000
52.223-14	Toxic Chemical Release Reporting	AUG 2003
52.225-13	Restrictions on Certain Foreign Purchases	FEB 2006
52.227-1	Authorization and Consent	JUL 1995
52.227-2	Notice and Assistance Regarding Patent and Copyright Infringement	AUG 1996
52.227-10	Filing of Patent Applications - Classified Subject Matter	APR 1984
52.227-14	Rights In Data-General	JUN 1987
52.227-16	Additional Data Requirements	JUN 1987
52.228-7	Insurance-Liability to Third Persons	MAR 1996
52.230-2	Cost Accounting Standards	APR 1998
52.230-3	Disclosure and Consistency of Cost Accounting	APR 1998
52.230-6	Administration of Cost Accounting Standards	APR 2005
52.232-9	Limitation on Withholding of Payments	APR 1984
52.232-17	Interest	JUN 1996
52.232-19	Availability of Funds for the Next Fiscal Year <i>Insert: <u>February 28, 2007</u></i>	APR 1984
52.232-22	Limitation of Funds	APR 1984

**Final RFP NNM08125357R**

<u>Clause Number</u>	<u>Title</u>	<u>Date</u>
52.232-23	Assignment of Claims	JAN 1986
52.232-25	Prompt Payment (Alternate I)	FEB 2002
52.232-33	Payment By Electronic Funds Transfer- Central Contractor Registration	OCT 2003
52.233-1	Disputes (Alternate I)	DEC 1991
52.233-3	Protest after Award (Alternate I)	JUN 1985
52.233-4	Applicable Law for Breach of Contract Claim	OCT 2004
52.237-2	Protection Of Government Buildings, Equipment, And Vegetation	APR 1984
52.237-3	Continuity of Services	JAN 1991
52.239-1	Privacy or Security Safeguards	AUG 1996
52.242-1	Notice Of Intent To Disallow Costs	APR 1984
52.242-3	Penalties For Unallowable Costs	MAY 2001
52.242-4	Certification Of Final Indirect Costs	JAN 1997
52.242-13	Bankruptcy	JUL 1995
52.243-2	Changes-Cost Reimbursement (Alternate II)	APR 1984
52.244-5	Competition in Subcontracting	DEC 1996
52.245-1	Government Property	JUN 2007
52.246-25	Limitation on Liability – Services	FEB 1997
52.247-1	Commercial Bill of Lading Notice	FEB 2006
52.248-1	Value Engineering	FEB 2000
52.249-6	Termination (Cost-Reimbursement)	MAY 2004
52.249-14	Excusable Delays	APR 1984
52.251-1	Government Supply Sources Interagency	APR 1984
52.251-2	Fleet Management System Vehicles and Related Services	JAN 1991
52.253-1	Computer Generated Forms	JAN 1991

(End of Clause)

**PART B: NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES**

<u>Clause Number</u>	<u>Title</u>	<u>Date</u>
1852.216-89	Assignment and Release Forms	JUL 1997
1852.219-74	Use of Rural Area Small Businesses	SEP 1990
1852.223-74	Drug and Alcohol-Free Workforce	MAR 1996
1852.227-14	Rights in Data--General **Modifies FAR Clause**	
1852.237-70	Emergency Evacuation Procedures	DEC 1988
1852.242-78	Emergency Medical Services and Evacuation	APR 2001
1852.243-71	Shared Shavings	MAR 1997

(End of Clause)

**I.2 REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFEROR**

The completed provision 52.204-8, Annual Representations and Certifications, including any amended representation(s) made at paragraph (b) of the provision; and other representations, certifications and other statements contained in Section K completed and submitted as part of the offer dated *(Insert date of offer)* are hereby incorporated by reference in this resulting contract.

**(TO BE COMPLETED AT CONTRACT AWARD)**

(End of Clause)

**I.3 1852.204-75 SECURITY CLASSIFICATION REQUIREMENTS (SEP 1989)**

Performance under this contract will involve access to and/or generation of classified information, work in a security area, or both, up to the level of Secret Clearance. See Federal Acquisition Regulation clause 52.204-2 in this contract and DD Form 254, Contract Security Classification Specification, Attachment J-19.

(End of Clause)

**I.4 1852.204-76 SECURITY REQUIREMENTS FOR UNCLASSIFIED INFORMATION TECHNOLOGY RESOURCES (MAY 2007)**

(a) The Contractor shall be responsible for information and information technology (IT) security when--

(1) The Contractor or its subcontractors must obtain physical or electronic (i.e., authentication level 2 and above as defined in National Institute of Standards and Technology (NIST) Special Publication (SP) 800-63, Electronic Authentication Guideline) access to NASA's computer systems, networks, or IT infrastructure; or

(2) Information categorized as low, moderate, or high by the Federal Information Processing Standards (FIPS) 199, Standards for Security Categorization of Federal Information and Information Systems is stored, generated, processed, or exchanged by NASA or on behalf of NASA by a contractor or subcontractor, regardless of whether the information resides on a NASA or a contractor/subcontractor's information system.

(b) IT Security Requirements.

(1) Within 30 days after contract award, a Contractor shall submit to the Contracting Officer for NASA approval an IT Security Plan, Risk Assessment, and FIPS 199, Standards for Security Categorization of Federal Information and Information Systems, Assessment. These plans and assessments, including annual updates shall be incorporated into the contract as compliance documents.

(i) The IT system security plan shall be prepared consistent, in form and content, with NIST SP 800-18, Guide for Developing Security Plans for Federal Information Systems, and any additions/augmentations described in NASA Procedural Requirements (NPR) 2810, Security of Information Technology. The security plan shall identify and document appropriate IT security controls consistent with the sensitivity of the information and the requirements of Federal Information Processing Standards (FIPS) 200, Recommended Security Controls for Federal Information Systems. The plan shall be reviewed and updated in accordance with NIST SP 800-26, Security Self-Assessment Guide for Information Technology Systems, and FIPS 200, on a yearly basis.

(ii) The risk assessment shall be prepared consistent, in form and content, with NIST SP 800-30, Risk Management Guide for Information Technology Systems, and any

additions/augmentations described in NPR 2810. The risk assessment shall be updated on a yearly basis.

(iii) The FIPS 199 assessment shall identify all information types as well as the "high water mark," as defined in FIPS 199, of the processed, stored, or transmitted information necessary to fulfill the contractual requirements.

(2) The Contractor shall produce contingency plans consistent, in form and content, with NIST SP 800-34, Contingency Planning Guide for Information Technology Systems, and any additions/augmentations described in NPR 2810. The Contractor shall perform yearly "Classroom Exercises." "Functional Exercises," shall be coordinated with the Center CIOs and be conducted once every three years, with the first conducted within the first two years of contract award. These exercises are defined and described in NIST SP 800-34.

(3) The Contractor shall ensure coordination of its incident response team with the NASA Incident Response Center (NASIRC) and the NASA Security Operations Center, ensuring that incidents are reported consistent with NIST SP 800-61, Computer Security Incident Reporting Guide, and the United States Computer Emergency Readiness Team's (US-CERT) Concept of Operations for reporting security incidents. Specifically, any confirmed incident of a system containing NASA data or controlling NASA assets shall be reported to NASIRC within one hour that results in unauthorized access, loss or modification of NASA data, or denial of service affecting the availability of NASA data.

(4) The Contractor shall ensure that its employees, in performance of the contract, receive annual IT security training in NASA IT Security policies, procedures, computer ethics, and best practices in accordance with NPR 2810 requirements. The Contractor may use Web-based training available from NASA to meet this requirement.

(5) The Contractor shall provide NASA, including the NASA Office of Inspector General, access to the Contractor's and subcontractors' facilities, installations, operations, documentation, databases, and personnel used in performance of the contract. Access shall be provided to the extent required to carry out IT security inspection, investigation, and/or audits to safeguard against threats and hazards to the integrity, availability, and confidentiality of NASA information or to the function of computer systems operated on behalf of NASA, and to preserve evidence of computer crime. To facilitate mandatory reviews, the Contractor shall ensure appropriate compartmentalization of NASA information, stored and/or processed, either by information systems in direct support of the contract or that are incidental to the contract.

(6) The Contractor shall ensure that system administrators who perform tasks that have a material impact on IT security and operations demonstrate knowledge appropriate to those tasks. Knowledge is demonstrated through the NASA System Administrator Security Certification Program. A system administrator is one who provides IT services (including network services, file storage, and/or web services) to someone other than themselves and takes or assumes the responsibility for the security and administrative controls of that service. Within 30 days after contract award, the Contractor shall provide to the Contracting Officer a list of all system administrator positions and personnel filling those positions, along with a schedule that ensures certification of all personnel within 90 days after contract award. Additionally, the Contractor should report all personnel changes which impact system administrator positions within 5 days of the personnel change and ensure these individuals obtain System Administrator certification within 90 days after the change.

(7) The Contractor shall ensure that NASA's Sensitive But Unclassified (SBU) information as defined in NPR 1600.1, NASA Security Program Procedural Requirements, which includes privacy information, is encrypted in storage and transmission.

(8) When the Contractor is located at a NASA Center or installation or is using NASA IP address space, the Contractor shall--

(i) Submit requests for non-NASA provided external Internet connections to the Contracting Officer for approval by the Network Security Configuration Control Board (NSCCB);

**Final RFP NNM08125357R**

(ii) Comply with the NASA CIO metrics including patch management, operating systems and application configuration guidelines, vulnerability scanning, incident reporting, system administrator certification, and security training; and

(iii) Utilize the NASA Public Key Infrastructure (PKI) for all encrypted communication or non-repudiation requirements within NASA when secure email capability is required.

(c) Physical and Logical Access Requirements.

(1) Contractor personnel requiring access to IT systems operated by the Contractor for NASA or interconnected to a NASA network shall be screened at an appropriate level in accordance with NPR 2810 and Chapter 4, NPR 1600.1, NASA Security Program Procedural Requirements. NASA shall provide screening, appropriate to the highest risk level, of the IT systems and information accessed, using, as a minimum, National Agency Check with Inquiries (NACI). The Contractor shall submit the required forms to the NASA Center Chief of Security (CCS) within fourteen (14) days after contract award or assignment of an individual to a position requiring screening. The forms may be obtained from the CCS. At the option of NASA, interim access may be granted pending completion of the required investigation and final access determination. For Contractors who will reside on a NASA Center or installation, the security screening required for all required access (e.g., installation, facility, IT, information, etc.) is consolidated to ensure only one investigation is conducted based on the highest risk level. Contractors not residing on a NASA installation will be screened based on their IT access risk level determination only. See NPR 1600.1, Chapter 4.

(2) Guidance for selecting the appropriate level of screening is based on the risk of adverse impact to NASA missions. NASA defines three levels of risk for which screening is required (IT-1 has the highest level of risk).

(i) IT-1--Individuals having privileged access or limited privileged access to systems whose misuse can cause very serious adverse impact to NASA missions. These systems include, for example, those that can transmit commands directly modifying the behavior of spacecraft, satellites or aircraft.

(ii) IT-2--Individuals having privileged access or limited privileged access to systems whose misuse can cause serious adverse impact to NASA missions. These systems include, for example, those that can transmit commands directly modifying the behavior of payloads on spacecraft, satellites or aircraft; and those that contain the primary copy of "level 1" information whose cost to replace exceeds one million dollars.

(iii) IT-3--Individuals having privileged access or limited privileged access to systems whose misuse can cause significant adverse impact to NASA missions. These systems include, for example, those that interconnect with a NASA network in a way that exceeds access by the general public, such as bypassing firewalls; and systems operated by the Contractor for NASA whose function or information has substantial cost to replace, even if these systems are not interconnected with a NASA network.

(3) Screening for individuals shall employ forms appropriate for the level of risk as established in Chapter 4, NPR 1600.1.

(4) The Contractor may conduct its own screening of individuals requiring privileged access or limited privileged access provided the Contractor can demonstrate to the Contracting Officer that the procedures used by the Contractor are equivalent to NASA's personnel screening procedures for the risk level assigned for the IT position.

(5) Subject to approval of the Contracting Officer, the Contractor may forgo screening of Contractor personnel for those individuals who have proof of a--

(i) Current or recent national security clearances (within last three years);

(ii) Screening conducted by NASA within the last three years that meets or exceeds the screening requirements of the IT position; or

**Final RFP NNM08125357R**

(iii) Screening conducted by the Contractor, within the last three years, that is equivalent to the NASA personnel screening procedures as approved by the Contracting Officer and concurred on by the CCS.

(d) The Contracting Officer may waive the requirements of paragraphs (b) and (c)(1) through c)(3) upon request of the Contractor. The Contractor shall provide all relevant information requested by the Contracting Officer to support the waiver request.

(e) The Contractor shall contact the Contracting Officer for any documents, information, or forms necessary to comply with the requirements of this clause.

(f) At the completion of the contract, the contractor shall return all NASA information and IT resources provided to the contractor during the performance of the contract and certify that all NASA information has been purged from contractor-owned systems used in the performance of the contract.

(g) The Contractor shall insert this clause, including this paragraph (g), in all subcontracts:

(1) Have physical or electronic access to NASA's computer systems, networks, or IT infrastructure; or

(2) Use information systems to generate, store, process, or exchange data with NASA or on behalf of NASA, regardless of whether the data resides on a NASA or a contractor's information system.

(End of clause)

**I.5 1852.215-84 OMBUDSMAN (OCT 2003) Alternate I (JUN 2000)**

(a) An ombudsman has been appointed to hear and facilitate the resolution of concerns from offerors, potential offerors, and contractors during the preaward and postaward phases of this acquisition. When requested, the ombudsman will maintain strict confidentiality as to the source of the concern. The existence of the ombudsman is not to diminish the authority of the contracting officer, the Source Evaluation Board, or the selection official. Further, the ombudsman does not participate in the evaluation of proposals, the source selection process, or the adjudication of formal contract disputes. Therefore, before consulting with an ombudsman, interested parties must first address their concerns, issues, disagreements, and/or recommendations to the contracting officer for resolution.

(b) If resolution cannot be made by the contracting officer, interested parties may contact the installation ombudsman, DE01/Robin N. Henderson; Address: George C. Marshall Space Flight Center Building 4200, Room 918A Marshall Space Flight Center, Huntsville, AL 35812; Telephone: 256-544-1919, , Fax: 256-544-7920, E-mail: robin.n.henderson@nasa.gov. Concerns, issues, disagreements, and recommendations which cannot be resolved at the installation may be referred to the NASA ombudsman, the Director of the Contract Management Division, at 202-358-0445, facsimile 202-358-3083, e-mail, james.a.balinskas@nasa.gov. Please do not contact the ombudsman to request copies of the solicitation, verify offer due date, or clarify technical requirements. Such inquiries shall be directed to the contracting officer or as specified elsewhere in this document.

(c) If this is a task or delivery order contract, the ombudsman shall review complaints from contractors and ensure they are afforded a fair opportunity to be considered, consistent with the procedures of the contract.

(End of Clause)

**I.6 1852.219-76 NASA 8 PERCENT GOAL (JUL 1997)**

(a) Definitions.

**"Historically Black Colleges or University,"** as used in this clause, means an institution determined by the Secretary of Education to meet the requirements of 34 CFR Section 608.2. The term also includes any nonprofit research institution that was an integral part of such a college or university before November 14, 1986.

**"Minority institutions,"** as used in this clause, means an institution of higher education meeting the requirements of section 1046(3) of the Higher Education Act of 1965 (20 U.S.C. 1135d-5(3)) which for the purposes of this clause includes a Hispanic-serving institution of higher education as defined in section 316(b)(1) of the Act (20 U.S.C. 1059c(b)(1)).

**"Small disadvantaged business concern,"** as used in this clause, means a small business concern that (1) is at least 51 percent unconditionally owned by one or more individuals who are both socially and economically disadvantaged, or a publicly owned business having at least 51 percent of its stock unconditionally owned by one or more socially and economically disadvantaged individuals, and (2) has its management and daily business controlled by one or more such individuals. This term also means a small business concern that is at least 51 percent unconditionally owned by an economically disadvantaged Indian tribe or Native Hawaiian Organization, or a publicly owned business having at least 51 percent of its stock unconditionally owned by one or more of these entities, which has its management and daily business controlled by members of an economically disadvantaged Indian tribe or Native Hawaiian Organization, and which meets the requirements of 13 CFR 124.

**"Women-owned small business concern,"** as used in this clause, means a small business concern (1) which is at least 51 percent owned by one or more women or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women, and (2) whose management and daily business operations are controlled by one or more women.

(b) The NASA Administrator is required by statute to establish annually a goal to make available to small disadvantaged business concerns, Historically Black Colleges and Universities, minority institutions, and women-owned small business concerns, at least 8 percent of NASA's procurement dollars under prime contracts or subcontracts awarded in support of authorized programs, including the space station by the time operational status is obtained.

(c) The contractor hereby agrees to assist NASA in achieving this goal by using its best efforts to award subcontracts to such entities to the fullest extent consistent with efficient contract performance.

(d) Contractors acting in good faith may rely on written representations by their subcontractors regarding their status as small disadvantaged business concerns, Historically Black Colleges and Universities, minority institutions, and women-owned small business concerns.

(End of Clause)

#### **I.7 1852.228-75 MINIMUM INSURANCE COVERAGE (OCT 1988)**

The Contractor shall obtain and maintain insurance coverage as follows for the performance of this contract:

(a) Worker's compensation and employer's liability insurance as required by applicable Federal and state workers' compensation and occupational disease statutes. If occupational diseases are not compensable under those statutes, they shall be covered under the employer's liability section of the insurance policy, except when contract operations are so commingled with the Contractor's commercial operations that it would not be practical. The employer's liability coverage shall be at least \$100,000,

except in States with exclusive or monopolistic funds that do not permit workers' compensation to be written by private carriers.

(b) Comprehensive general (bodily injury) liability insurance of at least \$500,000 per occurrence.

(c) Motor vehicle liability insurance written on the comprehensive form of policy which provides for bodily injury and property damage liability covering the operation of all motor vehicles used in connection with performing the contract. Policies covering motor vehicles operated in the United States shall provide coverage of at least \$200,000 per person and \$500,000 per occurrence for bodily injury liability and \$20,000 per occurrence for property damage. The amount of liability coverage on other policies shall be commensurate with any legal requirements of the locality and sufficient to meet normal and customary claims.

(d) Comprehensive general and motor vehicle liability policies shall contain a provision worded as follows:

"The insurance company waives any right of subrogation against the United States of America which may arise by reason of any payment under the policy."

(e) When aircraft are used in connection with performing the contract, aircraft public and passenger liability insurance of at least \$200,000 per person and \$500,000 per occurrence for bodily injury, other than passenger liability, and \$200,000 per occurrence for property damage. Coverage for passenger liability bodily injury shall be at least \$200,000 multiplied by the number of seats or passengers, whichever is greater.

(End of Clause)

**1.8 1852.237-72 ACCESS TO SENSITIVE INFORMATION (JUN 2005)**

(a) As used in this clause, "sensitive information" refers to information that a contractor has developed at private expense, or that the Government has generated that qualifies for an exception to the Freedom of Information Act, which is not currently in the public domain, and which may embody trade secrets or commercial or financial information, and which may be sensitive or privileged.

(b) To assist NASA in accomplishing management activities and administrative functions, the Contractor shall provide the services specified elsewhere in this contract.

(c) If performing this contract entails access to sensitive information, as defined above, the Contractor agrees to -

(1) Utilize any sensitive information coming into its possession only for the purposes of performing the services specified in this contract, and not to improve its own competitive position in another procurement.

(2) Safeguard sensitive information coming into its possession from unauthorized use and disclosure.

(3) Allow access to sensitive information only to those employees that need it to perform services under this contract.

(4) Preclude access and disclosure of sensitive information to persons and entities outside of the Contractor's organization.

(5) Train employees who may require access to sensitive information about their obligations to utilize it only to perform the services specified in this contract and to safeguard it from unauthorized use and disclosure.

(6) Obtain a written affirmation from each employee that he/she has received and will comply with training on the authorized uses and mandatory protections of sensitive information needed in performing this contract.

(7) Administer a monitoring process to ensure that employees comply with all reasonable security procedures, report any breaches to the Contracting Officer, and implement any necessary corrective actions.

(d) The Contractor will comply with all procedures and obligations specified in its Organizational Conflicts of Interest Avoidance Plan, which this contract incorporates as a compliance document.

(e) The nature of the work on this contract may subject the Contractor and its employees to a variety of laws and regulations relating to ethics, conflicts of interest, corruption, and other criminal or civil matters relating to the award and administration of government contracts. Recognizing that this contract establishes a high standard of accountability and trust, the Government will carefully review the Contractor's performance in relation to the mandates and restrictions found in these laws and regulations. Unauthorized uses or disclosures of sensitive information may result in termination of this contract for default, or in debarment of the Contractor for serious misconduct affecting present responsibility as a government contractor.

(f) The Contractor shall include the substance of this clause, including this paragraph (f) , suitably modified to reflect the relationship of the parties, in all subcontracts that may involve access to sensitive information

(End of Clause)

**I.9 1852.237-73 RELEASE OF SENSITIVE INFORMATION (JUN 2005)**

(a) As used in this clause, "sensitive information" refers to information, not currently in the public domain, that the Contractor has developed at private expense, that may embody trade secrets or commercial or financial information, and that may be sensitive or privileged.

(b) In accomplishing management activities and administrative functions, NASA relies heavily on the support of various service providers. To support NASA activities and functions, these service providers, as well as their subcontractors and their individual employees, may need access to sensitive information submitted by the Contractor under this contract. By submitting this proposal or performing this contract, the Contractor agrees that NASA may release to its service providers, their subcontractors, and their individual employees, sensitive information submitted during the course of this procurement, subject to the enumerated protections mandated by the clause at 1852.237-72, Access to Sensitive Information.

(c) (1) The Contractor shall identify any sensitive information submitted in support of this proposal or in performing this contract. For purposes of identifying sensitive information, the Contractor may, in addition to any other notice or legend otherwise required, use a notice similar to the following:

Mark the title page with the following legend:

**Final RFP NNM08125357R**

This proposal or document includes sensitive information that NASA shall not disclose outside the Agency and its service providers that support management activities and administrative functions. To gain access to this sensitive information, a service provider's contract must contain the clause at NFS 1852.237-72, Access to Sensitive Information. Consistent with this clause, the service provider shall not duplicate, use, or disclose the information in whole or in part for any purpose other than to perform the services specified in its contract. This restriction does not limit the Government's right to use this information if it is obtained from another source without restriction. The information subject to this restriction is contained in pages:

*[insert page numbers or other identification of pages].*

Mark each page of sensitive information the Contractor wishes to restrict with the following legend:

Use or disclosure of sensitive information contained on this page is subject to the restriction on the title page of this proposal or document.

(2) The Contracting Officer shall evaluate the facts supporting any claim that particular information is "sensitive." This evaluation shall consider the time and resources necessary to protect the information in accordance with the detailed safeguards mandated by the clause at 1852.237-72, Access to Sensitive Information. However, unless the Contracting Officer decides, with the advice of Center counsel, that reasonable grounds exist to challenge the Contractor's claim that particular information is sensitive, NASA and its service providers and their employees shall comply with all of the safeguards contained in paragraph (d) of this clause.

(d) To receive access to sensitive information needed to assist NASA in accomplishing management activities and administrative functions, the service provider must be operating under a contract that contains the clause at 1852.237-72, Access to Sensitive Information. This clause obligates the service provider to do the following:

(1) Comply with all specified procedures and obligations, including the Organizational Conflicts of Interest Avoidance Plan, which the contract has incorporated as a compliance document.

(2) Utilize any sensitive information coming into its possession only for the purpose of performing the services specified in its contract.

(3) Safeguard sensitive information coming into its possession from unauthorized use and disclosure.

(4) Allow access to sensitive information only to those employees that need it to perform services under its contract.

(5) Preclude access and disclosure of sensitive information to persons and entities outside of the service provider's organization.

(6) Train employees who may require access to sensitive information about their obligations to utilize it only to perform the services specified in its contract and to safeguard it from unauthorized use and disclosure.

(7) Obtain a written affirmation from each employee that he/she has received and will comply with training on the authorized uses and mandatory protections of sensitive information needed in performing this contract.

(8) Administer a monitoring process to ensure that employees comply with all reasonable security procedures, report any breaches to the Contracting Officer, and implement any necessary corrective actions.

(e) When the service provider will have primary responsibility for operating an information technology system for NASA that contains sensitive information, the service provider's contract shall include the clause at 1852.204-76, Security Requirements for Unclassified Information Technology Resources. The Security Requirements clause requires the service provider to implement an Information Technology Security Plan to protect information processed, stored, or transmitted from unauthorized access, alteration, disclosure, or use. Service provider personnel requiring privileged access or limited privileged access to these information technology systems are subject to screening using the standard National Agency Check (NAC) forms appropriate to the level of risk for adverse impact to NASA missions. The Contracting Officer may allow the service provider to conduct its own screening, provided the service provider employs substantially equivalent screening procedures.

(f) This clause does not affect NASA's responsibilities under the Freedom of Information Act.

(g) The Contractor shall insert this clause, including this paragraph (g), suitably modified to reflect the relationship of the parties, in all subcontracts that may require the furnishing of sensitive information.

(End of Clause)

**I.10 52.216-18 ORDERING (OCT 1995)**

(a) Any supplies and services to be furnished under this contract shall be ordered by issuance of delivery orders or task orders by the individuals or activities designated in the Schedule. Such orders may be issued from March 1, 2008 through February 28, 2013, if options are exercised.

(b) All delivery orders or task orders are subject to the terms and conditions of this contract. In the event of conflict between a delivery order or task order and this contract, the contract shall control.

(c) If mailed, a delivery order or task order is considered "issued" when the Government deposits the order in the mail. Orders may be issued orally, by facsimile, or by electronic commerce methods only if authorized in the Schedule.

(End of Clause)

**I.11 52.216-19 ORDERING LIMITATIONS (OCT 1995)**

(a) *Minimum order.* When the Government requires supplies or services under PWS paragraph 3.0 of this contract in an amount of less than \$1,000.00, the Government is not obligated to purchase, nor is the Contractor obligated to furnish, those supplies or services under the contract.

(b) *Maximum order.* The Contractor is not obligated to honor--

(1) Any order for a single item in excess of \$12,000,000;

(2) Any order for a combination of items in excess of \$41,600,000; or

**Final RFP NNM08125357R**

(3) A series of orders from the same ordering office within 30 days that together call for quantities exceeding the limitation in subparagraph (b)(1) or (2) of this section.

(c) If this is a requirements contract (*i.e.*, includes the Requirements clause at subsection 52.216-21 of the Federal Acquisition Regulation (FAR)), the Government is not required to order a part of any one requirement from the Contractor if that requirement exceeds the maximum-order limitations in paragraph (b) of this section.

(d) Notwithstanding paragraphs (b) and (c) of this section, the Contractor shall honor any order exceeding the maximum order limitations in paragraph (b), unless that order (or orders) is returned to the ordering office within 10 days after issuance, with written notice stating the Contractor's intent not to ship the item (or items) called for and the reasons. Upon receiving this notice, the Government may acquire the supplies or services from another source.

(End of Clause)

**I.12 52.216-22 INDEFINITE QUANTITY (OCT 1995)**

(a) This is an indefinite-quantity contract for the supplies or services specified and effective for the period stated, in the Schedule. The quantities of supplies and services specified in the Schedule are estimates only and are not purchased by this contract.

(b) Delivery or performance shall be made only as authorized by orders issued in accordance with the Ordering clause. The Contractor shall furnish to the Government, when and if ordered, the supplies or services specified in the Schedule up to and including the quantity designated in the Schedule as the "maximum." The Government shall order at least the quantity of supplies or services designated in the Schedule as the "minimum."

(c) Except for any limitations on quantities in the Order Limitations clause or in the Schedule, there is no limit on the number of orders that may be issued. The Government may issue orders requiring delivery to multiple destinations or performance at multiple locations.

(d) Any order issued during the effective period of this contract and not completed within that period shall be completed by the Contractor within the time specified in the order. The contract shall govern the Contractor's and Government's rights and obligations with respect to that order to the same extent as if the order were completed during the contract's effective period; provided, that the Contractor shall not be required to make any deliveries under this contract after February 28, 2013.

(End of Clause)

**I.13 52.208-8 REQUIRED SOURCES FOR HELIUM AND HELIUM USAGE DATA (APR 2002)**

As prescribed in 8.505, insert the following clause:

(a) *Definitions.*

**"Bureau of Land Management"**, as used in this clause, means the Department of the Interior, Bureau of Land Management, Amarillo Field Office, Helium Operations, located at 801 South Fillmore Street, Suite 500, Amarillo, TX 79101-3545.

**"Federal helium supplier"** means a private helium vendor that has an in-kind crude helium sales contract with the Bureau of Land Management (BLM) and that is on the BLM Amarillo Field Office's

**Final RFP NNM08125357R**

Authorized List of Federal Helium Suppliers available via the Internet at [http://www.nm.blm.gov/www/amfo/amfo\\_home.html](http://www.nm.blm.gov/www/amfo/amfo_home.html).

**"Major helium requirement"** means an estimated refined helium requirement greater than 200,000 standard cubic feet (scf) (measured at 14.7 pounds per square inch absolute pressure and 70 degrees Fahrenheit temperature) of gaseous helium or 7510 liters of liquid helium delivered to a helium use location per year.

(b) *Requirements* –

(1) Contractors must purchase major helium requirements from Federal helium suppliers, to the extent that supplies are available.

(2) The Contractor shall provide to the Contracting Officer the following data within 10 days after the Contractor or subcontractor receives a delivery of helium from a Federal helium supplier-

- (i) The name of the supplier;
- (ii) The amount of helium purchased;
- (iii) The delivery date(s); and
- (iv) The location where the helium was used.

(c) *Subcontracts*. The Contractor shall insert this clause, including this paragraph (c), in any subcontract or order that involves a major helium requirement.

(End of Clause)

**I.14 52.215-19 NOTIFICATION OF OWNERSHIP CHANGES (OCT 1997)**

(a) The Contractor shall make the following notifications in writing:

(1) When the Contractor becomes aware that a change in its ownership has occurred, or is certain to occur, that could result in changes in the valuation of its capitalized assets in the accounting records, the Contractor shall notify the Administrative Contracting Officer (ACO) within 30 days.

(2) The Contractor shall also notify the ACO within 30 days whenever changes to asset valuations or any other cost changes have occurred or are certain to occur as a result of a change in ownership.

(b) The Contractor shall-

- (1) Maintain current, accurate, and complete inventory records of assets and their costs;
- (2) Provide the ACO or designated representative ready access to the records upon request;
- (3) Ensure that all individual and grouped assets, their capitalized values, accumulated depreciation or amortization, and remaining useful lives are identified accurately before and after each of the Contractor's ownership changes; and
- (4) Retain and continue to maintain depreciation and amortization schedules based on the asset records maintained before each Contractor ownership change.

(c) The Contractor shall include the substance of this clause in all subcontracts under this contract that meet the applicability requirement of FAR 15.408(k).  
(End of Clause)

**I.15 52.219-18 NOTIFICATION OF COMPETITION LIMITED TO ELIGIBLE 8(a) CONCERNS (JUN 2003) - DEVIATION**

(a) Offers are solicited only from small business concerns expressly certified by the Small Business Administration (SBA) for participation in the SBA's 8(a) Program and which meet the following criteria at the time of submission of offer-

(1) The Offeror is in conformance with the 8(a) support limitation set forth in its approved business plan; and

(2) The Offeror is in conformance with the Business Activity Targets set forth in its approved business plan or any remedial action directed by the SBA.

(b) By submission of its offer, the Offeror represents that it meets all of the criteria set forth in paragraph (a) of this clause.

(c) Any award resulting from this solicitation will be made directly by the Contracting Officer to the successful 8(a) offeror selected through the evaluation criteria set forth in this solicitation.

(d) (1) *Agreement.* A small business concern submitting an offer in its own name shall furnish, in performing the contract, only end items manufactured or produced by small business concerns in the United States or its outlying areas. If this procurement is processed under simplified acquisition procedures and the total amount of this contract does not exceed \$25,000, a small business concern may furnish the product of any domestic firm. This paragraph does not apply to construction or service contracts.

(2) The \_\_\_\_\_ [*insert name of SBA's contractor*] will notify the MSFC/NASA Contracting Officer in writing immediately upon entering an agreement (either oral or written) to transfer all or part of its stock or other ownership interest to any other party.

(End of Clause)

**I.16 52.222-42 STATEMENT OF EQUIVALENT RATES FOR FEDERAL HIRES (MAY 1989)**

In compliance with the Service Contract Act of 1965, as amended, and the regulations of the Secretary of Labor (29 CFR Part 4), this clause identifies the classes of service employees expected to be employed under the contract and states the wages and fringe benefits payable to each if they were employed by the contracting agency subject to the provisions of 5 U.S.C. 5341 or 5332.

*This Statement is for Information Only:  
It is not a Wage Determination*

A. Classification, Grades and Rates

Employee Class	Grade	Monetary Wage – Fringe Benefits Hr/Rate
----------------	-------	---

**Final RFP NNM08125357R**

Accounting Clerk I	GS-3	\$11.10
Accounting Clerk II	GS-4	\$12.47
Accounting Clerk III	GS-5	\$13.95
Order Clerk I	GS-2	\$10.18
Order Clerk II	GS-3	\$10.10
Safety/Training Specialist	GS-7	\$17.28
Quality Control (Mechanical Inspector)	WG-11	\$20.91
Laboratory Technician	GS-6	\$15.55
Manufacturing Process Planner/Estimator	WG-11	\$20.91
Production Control Clerk	GS-6	\$15.55
Material Expediter	WG-7	\$17.46
Metal Cleaner, Immersion	WG-5	\$15.55
Painter	WG-9	\$19.17
Aerospace Structural Welder	WG-11	\$20.91
Welder, Combination	WG-10	\$20.05
Maintenance Trades Helper	WG-5	\$15.55
Machinery Maintenance Mechanic	WG-10	\$20.05
Machine Tool Operator	WG-9	\$19.17
Sheet-metal Worker	WG-10	\$20.05
CNC Programmer	WG-11	\$20.91
Tool and Die Maker/Tool & Parts Attendant	WG-9	\$19.17
Electronics Planner/Lead	WL-11	\$23.06
Electronics Mechanic, Grade 10	WG-10	\$20.05
Electronics Worker, Grade 8	WG-8	\$18.28
Electronics Technician, Maintenance II	WG-9	\$19.17
Engineering Technician I	GS-3	\$11.10
Engineering Technician II	GS-4	\$12.47
Engineering Technician III	GS-5	\$13.95
Engineering Technician IV	GS-7	\$17.28
Engineering Technician V	GS-9	\$21.13
Library Technician	GS-5	\$13.95
Technical Writer II	GS-9	\$21.13
Secretary I	GS-4	\$12.47
Secretary II	GS-5	\$13.95
Secretary III	GS-7	\$15.55
Metrology Technician I	WG-10	\$20.05
Metrology Technician II	WG-11	\$20.91
Metrology Technician III	WG-12	\$21.74
Drafter/CAD Operator III	GS-6	\$15.55
Drafter/CAD Operator IV	GS-8	\$19.13

B. Fringe Benefits (applicable to all classifications)

**Final RFP NNM08125357R**

1. Health and Insurance

Life, accident and health insurance, and sick leave programs, 25% of basic hourly rate.

2. Holidays

- a. New Year's Day
- b. Martin Luther King's Birthday
- c. President's Day
- d. Memorial Day
- e. Independence Day
- f. Labor Day
- g. Columbus Day
- h. Veterans Day
- i. Thanksgiving Day
- j. Christmas Day

3. Vacation or Paid Leave

- a. 2 hours of annual leave each week for an employee with less than 3 years of service.
- b. 3 hours of annual leave each week for an employee with 3 but less than 15 years of service.
- c. 4 hours of annual leave each week for an employee with 15 or more years of service.

4. Retirement

1.5 percent of basic hourly rate plus Thrift Savings Plan plus Social Security.

(End of Clause)

**I.17 52.223-7 NOTICE OF RADIOACTIVE MATERIALS (JAN 1997)**

(a) The Contractor shall notify the Contracting Officer or designee, in writing, **60** days prior to the delivery of, or prior to completion of any servicing required by this contract of, items containing either

(1) radioactive material requiring specific licensing under the regulations issued pursuant to the Atomic Energy Act of 1954, as amended, as set forth in Title 10 of the Code of Federal Regulations, in effect on the date of this contract, or

(2) other radioactive material not requiring specific licensing in which the specific activity is greater than 0.002 microcuries per gram or the activity per item equals or exceeds 0.01 microcuries.

Such notice shall specify the part or parts of the items which contain radioactive materials, a description of the materials, the name and activity of the isotope, the manufacturer of the materials, and any other information known to the Contractor which will put users of the items on notice as to the hazards involved (OMB No. 9000-0107).

**Final RFP NNM08125357R**

\* The Contracting Officer shall insert the number of days required in advance of delivery of the item or completion of the servicing to assure that required licenses are obtained and appropriate personnel are notified to institute any necessary safety and health precautions. See FAR 23.601(d).

(b) If there has been no change affecting the quantity of activity, or the characteristics and composition of the radioactive material from deliveries under this contract or prior contracts, the Contractor may request that the Contracting Officer or designee waive the notice requirement in paragraph (a) of this clause. Any such request shall --

(1) Be submitted in writing;

(2) State that the quantity of activity, characteristics, and composition of the radioactive material have not changed; and

(3) Cite the contract number on which the prior notification was submitted and the contracting office to which it was submitted.

(c) All items, parts, or subassemblies which contain radioactive materials in which the specific activity is greater than 0.002 microcuries per gram or activity per item equals or exceeds 0.01 microcuries, and all containers in which such items, parts or subassemblies are delivered to the Government shall be clearly marked and labeled as required by the latest revision of MIL-STD 129 in effect on the date of the contract.

(d) This clause, including this paragraph (d), shall be inserted in all subcontracts for radioactive materials meeting the criteria in paragraph (a) of this clause.

(End of Clause)

**I.18 52.232-18 – AVAILABILITY OF FUNDS (APR 1984)**

Funds are not presently available for this contract. The Government's obligation under this contract is contingent upon the availability of appropriated funds from which payment for contract purposes can be made. No legal liability on the part of the Government for any payment may arise until funds are made available to the Contracting Officer for this contract and until the Contractor receives notice of such availability, to be confirmed in writing by the Contracting Officer.

(End of Clause)

**I.19 52.222-39 NOTIFICATION OF EMPLOYEE RIGHTS CONCERNING PAYMENT OF UNION DUES OR FEE (DEC 2004)**

(a) *Definition.* As used in this clause-

"United States" means the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.

(b) Except as provided in paragraph (e) of this clause, during the term of this contract, the Contractor shall post a notice, in the form of a poster, informing employees of their rights concerning union membership and payment of union dues and fees, in conspicuous places in and about all its plants and offices, including all places where notices to employees are customarily posted. The

**Final RFP NNM08125357R**

notice shall include the following information (except that the information pertaining to National Labor Relations Board shall not be included in notices posted in the plants or offices of carriers subject to the Railway Labor Act, as amended (45 U.S.C. 151-188)).

**Notice to Employees**

Under Federal law, employees cannot be required to join a union or maintain membership in a union in order to retain their jobs. Under certain conditions, the law permits a union and an employer to enter into a union-security agreement requiring employees to pay uniform periodic dues and initiation fees. However, employees who are not union members can object to the use of their payments for certain purposes and can only be required to pay their share of union costs relating to collective bargaining, contract administration, and grievance adjustment.

If you do not want to pay that portion of dues or fees used to support activities not related to collective bargaining, contract administration, or grievance adjustment, you are entitled to an appropriate reduction in your payment. If you believe that you have been required to pay dues or fees used in part to support activities not related to collective bargaining, contract administration, or grievance adjustment, you may be entitled to a refund and to an appropriate reduction in future payments.

For further information concerning your rights, you may wish to contact the National Labor Relations Board (NLRB) either at one of its Regional offices or at the following address or toll free number:

*National Labor Relations Board  
Division of Information  
1099 14<sup>th</sup> Street, N.W.  
Washington DC, 20570  
1-866-667-6572  
1-866-316-6572 (TTY)*

To locate the nearest NLRB office, see NLRB's website at <http://www.nlr.gov>.

(c) The Contractor shall comply with all provisions of Executive Order 13201 of February 17, 2001, and related implementing regulations at 29 CFR part 470, and orders of the Secretary of Labor.

(d) In the event that the Contractor does not comply with any of the requirements set forth in paragraphs (b), (c), or (g), the Secretary may direct that this contract be cancelled, terminated, or suspended in whole or in part, and declare the Contractor ineligible for further Government contracts in accordance with procedures at 29 CFR part 470, Subpart B-Compliance Evaluations, Complaint Investigations and Enforcement Procedures. Such other sanctions or remedies may be imposed as are provided by 29 CFR part 470, which implements Executive Order 13201, or as are otherwise provided by law.

(e) The requirement to post the employee notice in paragraph (b) does not apply to-

(1) Contractors and subcontractors that employ fewer than 15 persons;

(2) Contractor establishments or construction work sites where no union has been formally recognized by the Contractor or certified as the exclusive bargaining representative of the Contractor's employees;

**Final RFP NNM08125357R**

(3) Contractor establishments or construction work sites located in a jurisdiction named in the definition of the United States in which the law of that jurisdiction forbids enforcement of union-security agreements;

(4) Contractor facilities where upon the written request of the Contractor, the Department of Labor Deputy Assistant Secretary for Labor-Management Programs has waived the posting requirements with respect to any of the Contractor's facilities if the Deputy Assistant Secretary finds that the Contractor has demonstrated that-

(i) The facility is in all respects separate and distinct from activities of the Contractor related to the performance of a contract; and

(ii) Such a waiver will not interfere with or impede the effectuation of the Executive order; or

(5) Work outside the United States that does not involve the recruitment or employment of workers within the United States.

(f) The Department of Labor publishes the official employee notice in two variations; one for contractors covered by the Railway Labor Act and a second for all other contractors. The Contractor shall-

(1) Obtain the required employee notice poster from the Division of Interpretations and Standards, Office of Labor-Management Standards, U.S. Department of Labor, 200 Constitution Avenue, NW, Room N-5605, Washington, DC 20210, or from any field office of the Department's Office of Labor-Management Standards or Office of Federal Contract Compliance Programs;

(2) Download a copy of the poster from the Office of Labor-Management Standards website at <http://www.olms.dol.gov>; or

(3) Reproduce and use exact duplicate copies of the Department of Labor's official poster.

(g) The Contractor shall include the substance of this clause in every subcontract or purchase order that exceeds the simplified acquisition threshold, entered into in connection with this contract, unless exempted by the Department of Labor Deputy Assistant Secretary for Labor-Management Programs on account of special circumstances in the national interest under authority of 29 CFR 470.3(c). For indefinite quantity subcontracts, the Contractor shall include the substance of this clause if the value of orders in any calendar year of the subcontract is expected to exceed the simplified acquisition threshold. Pursuant to 29 CFR part 470, Subpart B-Compliance Evaluations, Complaint Investigations and Enforcement Procedures, the Secretary of Labor may direct the Contractor to take such action in the enforcement of these regulations, including the imposition of sanctions for noncompliance with respect to any such subcontract or purchase order. If the Contractor becomes involved in litigation with a subcontractor or vendor, or is threatened with such involvement, as a result of such direction, the Contractor may request the United States, through the Secretary of Labor, to enter into such litigation to protect the interests of the United States.

(End of clause)

**I.20 52.244-2 SUBCONTRACTS (AUG 1998) (ALTERNATE I) (JUN 2007)**

(a) Definitions. As used in this clause -

"Approved purchasing system" means a Contractor's purchasing system that has been reviewed and approved in accordance with Part 44 of the Federal Acquisition Regulation (FAR).

**Final RFP NNM08125357R**

"Consent to subcontract" means the Contracting Officer's written consent for the Contractor to enter into a particular subcontract.

"Subcontract" means any contract, as defined in FAR Subpart 2.1, entered into by a subcontractor to furnish supplies or services for performance of the prime contract or a subcontract. It includes, but is not limited to, purchase orders, and changes and modifications to purchase orders.

(b) When this clause is included in a fixed-price type contract, consent to subcontract is required only on unpriced contract actions (including unpriced modifications or unpriced delivery orders), and only if required in accordance with paragraph (c) or (d) of this clause.

(c) If the Contractor does not have an approved purchasing system, consent to subcontract is required for any subcontract that -

(1) Is of the cost-reimbursement, time-and-materials, or labor-hour type; or

(2) Is fixed-price and exceeds -

(i) For a contract awarded by the Department of Defense, the Coast Guard, or the National Aeronautics and Space Administration, the greater of the simplified acquisition threshold or 5 percent of the total estimated cost of the contract; or

(ii) For a contract awarded by a civilian agency other than the Coast Guard and the National Aeronautics and Space Administration, either the simplified acquisition threshold or 5 percent of the total estimated cost of the contract.

(d) If the Contractor has an approved purchasing system, the Contractor nevertheless shall obtain the Contracting Officer's written consent before placing the following subcontracts: **ALL INDIVIDUAL CONTRACTS WITH AN ESTIMATED VALUE GREATER THAN \$500,000.00**

(e)(1) The Contractor shall notify the Contracting Officer reasonably in advance of placing any subcontract or modification thereof for which consent is required under paragraph (c) or (d) of this clause, including the following information:

(i) A description of the supplies or services to be subcontracted.

(ii) Identification of the type of subcontract to be used.

(iii) Identification of the proposed subcontractor.

(iv) The proposed subcontract price.

(v) The subcontractor's current, complete, and accurate cost or pricing data and Certificate of Current Cost or Pricing Data, if required by other contract provisions.

(vi) The subcontractor's Disclosure Statement or Certificate relating to Cost Accounting Standards when such data are required by other provisions of this contract.

(vii) A negotiation memorandum reflecting -

(A) The principal elements of the subcontract price negotiations;

**Final RFP NNM08125357R**

(B) The most significant considerations controlling establishment of initial or revised prices;

(C) The reason cost or pricing data were or were not required;

(D) The extent, if any, to which the Contractor did not rely on the subcontractor's cost or pricing data in determining the price objective and in negotiating the final price;

(E) The extent to which it was recognized in the negotiation that the subcontractor's cost or pricing data were not accurate, complete, or current; the action taken by the Contractor and the subcontractor; and the effect of any such defective data on the total price negotiated;

(F) The reasons for any significant difference between the Contractor's price objective and the price negotiated; and

(G) A complete explanation of the incentive fee or profit plan when incentives are used. The explanation shall identify each critical performance element, management decisions used to quantify each incentive element, reasons for the incentives, and a summary of all trade-off possibilities considered.

(2) If the Contractor has an approved purchasing system and consent is not required under paragraph (c), or (d) of this clause, the Contractor nevertheless shall notify the Contracting Officer reasonably in advance of entering into any (i) cost-plus-fixed-fee subcontract, or (ii) fixed-price subcontract that exceeds either the simplified acquisition threshold or 5 percent of the total estimated cost of this contract. The notification shall include the information required by paragraphs (e)(1)(i) through (e)(1)(iv) of this clause.

(f) Unless the consent or approval specifically provides otherwise, neither consent by the Contracting Officer to any subcontract nor approval of the Contractor's purchasing system shall constitute a determination -

(1) Of the acceptability of any subcontract terms or conditions;

(2) Of the allowability of any cost under this contract; or

(3) To relieve the Contractor of any responsibility for performing this contract.

(g) No subcontract or modification thereof placed under this contract shall provide for payment on a cost-plus-a-percentage-of-cost basis, and any fee payable under cost-reimbursement type subcontracts shall not exceed the fee limitations in FAR [15.404-4\(c\)\(4\)\(i\)](#).

(h) The Contractor shall give the Contracting Officer immediate written notice of any action or suit filed and prompt notice of any claim made against the Contractor by any subcontractor or vendor that, in the opinion of the Contractor, may result in litigation related in any way to this contract, with respect to which the Contractor may be entitled to reimbursement from the Government.

(i) The Government reserves the right to review the Contractor's purchasing system as set forth in FAR Subpart 44.3.

(j) Paragraphs (c) and (e) of this clause do not apply to the following subcontracts, which were evaluated during negotiations: [ ]

**(TO BE PROPOSED BY THE OFFEROR)**

(End of Clause)

**I.21 52.244-6 Subcontracts for Commercial Items. (MAR 2007)**

(a) Definitions. As used in this clause--

"Commercial item" has the meaning contained in Federal Acquisition Regulation 2.101, Definitions.

"Subcontract" includes a transfer of commercial items between divisions, subsidiaries, or affiliates of the Contractor or subcontractor at any tier.

(b) To the maximum extent practicable, the Contractor shall incorporate, and require its subcontractors at all tiers to incorporate, commercial items or nondevelopmental items as components of items to be supplied under this contract.

(c)(1) The Contractor shall insert the following clauses in subcontracts for commercial items:

(i) 52.219-8, Utilization of Small Business Concerns (MAY 2004) (15 U.S.C. 637(d)(2) and (3)), in all subcontracts that offer further subcontracting opportunities. If the subcontract (except subcontracts to small business concerns) exceeds \$550,000 (\$1,000,000 for construction of any public facility), the subcontractor must include 52.219-8 in lower tier subcontracts that offer subcontracting opportunities.

(ii) 52.222-26, Equal Opportunity (MAR 2007) (E.O. 11246).

(iii) 52.222-35, Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans (SEP 2006) (38 U.S.C. 4212(a)).

(iv) 52.222-36, Affirmative Action for Workers with Disabilities (JUN 1998) (29 U.S.C. 793).

(v) 52.222-39, Notification of Employee Rights Concerning Payment of Union Dues or Fees (DEC 2004) (E.O. 13201). Flow down as required in accordance with paragraph (g) of FAR clause 52.222-39).

(vi) 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels (FEB 2006) (46 U.S.C. Appx 1241 and 10 U.S.C. 2631) (flow down required in accordance with paragraph (d) of FAR clause 52.247-64).

(2) While not required, the Contractor may flow down to subcontracts for commercial items a minimal number of additional clauses necessary to satisfy its contractual obligations.

(d) The Contractor shall include the terms of this clause, including this paragraph (d), in subcontracts awarded under this contract.

(End of Clause)

**I.22 52.245-2 GOVERNMENT PROPERTY INSTALLATION OPERATION SERVICES (JUN 2007)**

(a) This Government Property listed in paragraph (e) of this clause is furnished to the Contractor in an "as-is, where is" condition. The Government makes no warranty regarding the suitability for use of the Government property specified in this contract. The Contractor shall be afforded the opportunity to inspect the Government property as specified in the solicitation.

(b) The Government bears no responsibility for repair or replacement of any lost, damaged or destroyed Government property. If any or all of the Government property is lost, damaged or destroyed or becomes no longer usable, the Contractor shall be responsible for replacement of the property at Contractor expense. The Contractor shall have title to all replacement property and shall continue to be responsible for contract performance.

(c) Unless the Contracting Officer determines otherwise, the Government abandons all rights and title to unserviceable and scrap property resulting from contract performance. Upon notification to the Contracting Officer, the Contractor shall remove such property from the Government premises and dispose of it at Contractor expense.

(d) Except as provided in this clause, Government property furnished under this contract shall be governed by the Government Property clause of this contract.

(e) Government property provided under this clause:

None

(End of clause)

**I.23 52.245-9 USE AND CHARGES (JUN 2007)**

(a) *Definitions.* As used in this clause:

"Acquisition cost" means the acquisition cost recorded in the Contractor's property control system or, in the absence of such record, the value attributed by the Government to a Government property item for purposes of determining a reasonable rental charge.

"Government property" means all property owned by or leased to the Government or acquired by the Government under the terms of the contract. It includes both government-furnished property and contractor-acquired property as defined in FAR 45.101.

"Real property" means land and rights in land, ground improvement, utility distribution systems, and buildings and other structures. It does not include foundations and other work necessary for installing special tooling, special test equipment, or equipment.

"Rental period" means the calendar period during which Government property is made available for nongovernmental purposes.

"Rental time" means the number of hours, to the nearest whole hour; rented property is actually used for nongovernmental purposes. It includes time to set up the property for such purposes,

**Final RFP NNM08125357R**

perform required maintenance, and restore the property to its condition prior to rental (less normal wear and tear).

(b) *Use of Government property.* The Contractor may use the Government property without charge in the performance of—

(1) Contracts with the Government that specifically authorize such use without charge;

(2) Subcontracts of any tier under Government prime contracts if the Contracting Officer having cognizance of the prime contract—

(i) Approves a subcontract specifically authorizing such use; or

(ii) Otherwise authorizes such use in writing; and

(3) Other work, if the Contracting Officer specifically authorizes in writing use without charge for such work.

(c) *Rental.* If granted written permission by the Contracting Officer, or if it is specifically provided for in the Schedule, the Contractor may use the Government property (except material) for a rental fee for work other than that provided in paragraph (b) of this clause. Authorizing such use of the Government property does not waive any rights of the Government to terminate the Contractor's right to use the Government property. The rental fee shall be determined in accordance with the following paragraphs.

(d) *General.*

(1) Rental requests shall be submitted to the Administrative Contracting Officer (ACO), identify the property for which rental is requested, propose a rental period, and compute an estimated rental charge by using the Contractor's best estimate of rental time in the formulae described in paragraph (e) of this clause.

(2) The Contractor shall not use Government property for nongovernmental purposes, including Independent Research and Development, until a rental charge for real property, or estimated rental charge for other property, is agreed upon. Rented property shall be used only on a non-interference basis.

(e) *Rental charge.*—

(1) *Real property and associated fixtures.*

(i) The Contractor shall obtain, at its expense, a property appraisal from an independent licensed, accredited, or certified appraiser that computes a monthly, daily or hourly rental rate for comparable commercial property. The appraisal may be used to compute rentals under this clause throughout its effective period or, if an effective period is not stated in the appraisal, for one year following the date the appraisal was performed. The Contractor shall submit the appraisal to the ACO at least 30 days prior to the date the property is needed for nongovernmental use. Except as provided in paragraph (e)(1)(iii) of this clause, the ACO shall use the appraisal rental rate to determine a reasonable rental charge.

**Final RFP NNM08125357R**

(ii) Rental charges shall be determined by multiplying the rental time by the appraisal rental rate expressed as a rate per hour. Monthly or daily appraisal rental rates shall be divided by 720 or 24, respectively, to determine an hourly rental rate.

(iii) When the ACO believes the appraisal rental rate is unreasonable, the ACO shall promptly notify the Contractor. The parties may agree on an alternative means for computing a reasonable rental charge.

(iv) The Contractor shall obtain, at its expense, additional property appraisals in the same manner as provided in paragraph (e)(1)(i) if the effective period has expired and the Contractor desires the continued use of property for nongovernmental use. The Contractor may obtain additional appraisals within the effective period of the current appraisal if the market prices decrease substantially.

(2) *Other Government property.* The Contractor may elect to compute the rental charge using the appraisal method described in paragraph (e)(1) of this clause subject to the constraints therein or the following formula in which rental time shall be expressed in increments of not less than one hour with portions of hours rounded to the next higher hour: The rental charge is calculated by multiplying 2 percent of the acquisition cost by the hours of rental time, and dividing by 720.

(3) *Alternative methodology.* The Contractor may request consideration of an alternative basis for computing the rental charge if it considers the monthly rental rate or a time-based rental unreasonable or impractical.

(f) *Rental payments.*

(1) Rent is due 60 days following completion of the rental period or as otherwise specified in the contract. The Contractor shall compute the rental due, and furnish records or other supporting data in sufficient detail to permit the ACO to verify the rental time and computation. Payment shall be made by check payable to the Treasurer of the United States and sent to the contract administration office identified in the contract, unless otherwise specified by the Contracting Officer.

(2) Interest will be charged if payment is not made by the date specified in paragraph (f)(1) of this clause. Interest will accrue at the "Renegotiation Board Interest Rate" (published in the *Federal Register* semiannually on or about January 1<sup>st</sup> and July 1<sup>st</sup>) for the period in which the rent is due.

(3) The Government's acceptance of any rental payment under this clause, in whole or in part, shall not be construed as a waiver or relinquishment of any rights it may have against the Contractor stemming from the Contractor's unauthorized use of Government property or any other failure to perform this contract according to its terms

(g) *Use revocation.* At any time during the rental period the Government may revoke nongovernmental use authorization and require the Contractor, at the Contractor's expense, to return the property to the Government, restore the property to its pre-rental condition (less normal wear and tear), or both.

(h) *Unauthorized use.* The unauthorized use of Government property can subject a person to fines, imprisonment, or both under 18 U.S.C. 641.

(End of Clause)

**[END OF SECTION]**

**PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS**

**SECTION J - LIST OF ATTACHMENTS**

<u>Attachment No.</u>	<u>Description</u>	<u>Pages</u>
1	Performance Work Statement	J-1-1 – J-1-35
2	Data Procurement Document	J-2-1 – J-2-46
3	Work Breakdown Structure (WBS)	J-3-1 – J-3-3
4	IDIQ Process	J-4-1 – J-4-2
5	Description of IDIQ Labor Categories	J-5-1 – J-5-19
6	Schedule of Fully Burdened Labor Rates (Prime, Teammates, and Sub-Contractor)	J-6-1 – J-6-5
7	Task Order by Reference	J-7-1
8	Applicable Regulations, Procedures, and Documents	J-8-1 – J-8-19
9	Installation Provided Equipment & Facilities List	J-9-1 – J-9-19
10	Safety, Health, and Environmental Plan	J-10-1
11	Safety and Health Management Implementation Guide and Assessment Matrix	J-11-1 – J-11-3
12	Reserved	N/A
13	Reserved	N/A
14	Reserved	N/A
15	Wage Determination	J-15-1 – J-15-9
16	Acronym List	J-16-1 – J-16-7
17	Reserved	
18	Personal Identity Verification	J-18-1 – J-18-4
19	DOD Form DD254 Contract Security Classification and Specification	J-19-1 – J-19-2
20	NASA MSFC Safety & Mission Assurance Surveillance Plan	J-20-1 – J-20-6

DATA PROCUREMENT DOC. NO. <b>1163</b>	ISSUE <b>RFP</b>
---	---------------------

**NNM08125357R**

CONTRACT/RFP

EXHIBIT NUMBER

**J-2**

ATTACHMENT NUMBER

**Marshall Engineering Technician and Trade  
Services (METTS)**

PROJECT/SYSTEM

***DATA PROCUREMENT DOCUMENT***

**TBD**

CONTRACTOR

**July 12, 2007**

DATE

National Aeronautics and  
Space Administration

National Aeronautics and Space Administration					DATA PROCUREMENT DOC.	
<b><i>DOCUMENT CHANGE LOG</i></b>					NO.            ISSUE	
					<b>1163        RFP</b>	
INCORPORATED REVISIONS				AS OF:		SUPERSEDING:
OUTSTANDING REVISIONS				07-12-07		PAGE:
AUTHORITY	PORTION AFFECTED - PAGE NO./NO.				REMARKS	
	INTRO	SGR	DRL	DRD		

National Aeronautics and Space Administration			DATA PROCUREMENT DOC.		
<b>PAGE REVISION LOG</b>			NO.	ISSUE	
			<b>1163</b>	<b>RFP</b>	
NOTE: The current revision is denoted by a vertical line in the outer margin adjacent to the affected text.		AS OF:	SUPERSEDING:		PAGE:
		07-12-07			
INSERT LATEST REVISED PAGES. DISCARD SUPERSEDED PAGES.					
ITEM	PAGE	STATUS	ITEM	PAGE	STATUS

## 1.0 INTRODUCTION

1.1 Scope: Subject to the Rights in Data clause, this Data Procurement Document (DPD) sets forth the data requirements in each Data Requirements Description (DRD) and shall govern that data required by the DPD for the contract. The contractor shall furnish data defined by the DRD's listed on the Data Requirements List (DRL) by category of data, attached hereto, and made a part of this DPD. Such data shall be prepared, maintained, and delivered to NASA in accordance with the requirements set forth within this DPD. In cases where data requirements are covered by a Federal Acquisition Regulation (FAR) or NASA FAR Supplement (NFS) clause, that clause shall take precedence over the DPD, consistent with clause FAR 52.215-8.

1.2 DPD Description: This DPD consists of a Document Change Log, a Page Revision Log, a Table of Contents, an Introduction, a Statement of General Requirements, DPD maintenance procedures, a DRL, and the DRD's.

1.2.1 General Requirements: The general requirements, as specified in paragraph 2.0 of this DPD, prescribe those requirements applicable to the preparation, maintenance, and delivery of data that are better defined in aggregate than in the individual DRD's.

1.2.2 Data Requirements List (DRL): Throughout the performance of the contract, the DRL provides a listing by data category of the data requirements of the DPD.

### 1.2.3 Data Requirements Descriptions (DRD's)

1.2.3.1 Each data requirement listed on the DRL is given complete definition by a DRD. The DRD prescribes content, format, maintenance instructions, and submittal requirements.

1.2.3.2 For the purpose of classification and control, DRD's of this DPD are grouped into the following broad functional data categories:

<u>CATEGORY SYMBOL</u>	<u>DESCRIPTION</u>
CD	Contractual Data
CM	Configuration Management
LS	Logistics/Support
MA	Management
QE	Quality
SA	Safety

1.2.3.3 The symbols representing these data categories form part of the prefix of the DRD identification number. The first numerical characters reflect the DPD number.

1.2.3.4 To facilitate the usage and maintenance of the DPD, the DRD's have been sectionalized in accordance with the above data categories.

1.2.3.5 The DRD's are filed by data category and are in alpha-numeric sequence as listed on the DRL page (or pages) that precedes the DRD's.

1.2.4 Document Change Log (DCL) and Page Revision Log (PRL): The Document Change Log chronologically records all revision actions that pertain to the DPD. The Page Revision Log describes the current revision status of each page of the DPD and thus, at all times, provides its exact configuration.

1.2.5 DPD Maintenance Procedures: Maintenance procedures define the detailed methods to be employed in maintaining the DPD. Detailed maintenance procedures are specified in paragraph 3.0 of this DPD.

1.3 Data Types for Contractual Efforts: The types of data and their contractually applicable requirements for approval and delivery are:

<u>TYPE</u>	<u>DESCRIPTION</u>
1*	All issues and interim changes to those issues require written approval from the requiring organization before formal release for use or implementation.
2*	NASA reserves a time-limited right to disapprove in writing any issues and interim changes to those issues. The contractor shall submit the required data to NASA for review not less than 45 calendar days** prior to its release for use. The contractor shall clearly identify the release target date in the "submitted for review" transmittal***. If the data is unacceptable, NASA will notify the contractor within 45 calendar days** from the date of submission, regardless of the intended release date***. The contractor shall resubmit the information for reevaluation if disapproved. The submittal is considered approved if the contractor does not receive disapproval or an extension request from NASA within 45 calendar days**.
3	These data shall be delivered by the contractor as required by the contract and do not require NASA approval. However, to be a satisfactory delivery, the data shall satisfy all applicable contractual requirements and be submitted on time.
4	These data are produced or used during performance of the contract and are retained by the contractor. They shall be delivered only when NASA requests in writing and shall be delivered in accordance with the instructions in the request. The contractor shall maintain a list of these data and shall furnish copies of the list to NASA when requested to do so.
5	These data are incidental to contract performance and are retained by the contractor in those cases where contracting parties have agreed that formal delivery is not required. However, the Contracting Officer or the Contracting Officer's Representative shall have access to and can inspect this data at its location in the contractor's or subcontractor's facilities, or in an electronic database accessible to the Government.
*	Note: Type 1 and Type 2 data may be placed under NASA configuration management control when designated by NASA. CM control requires the contractor to submit Type 1 and Type 2 data updates through Engineering Change Proposals (ECPs).
**	Note: This time limit may be tailored for individual DPD's to meet the requirements of the procuring activity.
***	Note: If the contractor does not identify a release target date or if the intended release date is shorter than 45 calendar days from the date of submission, the 45 calendar days review cycle stands (or the tailored Type 2 time limitation for the specific procurement).

## 2.0 STATEMENT OF GENERAL REQUIREMENTS

2.1 Applicable/Reference Documents: Documents included as applicable documents in this DPD are the issue specified in the Performance Work Statement (PWS), and form a part of the DPD to the extent specified herein. Applicable documents listed in Item 15.2 of a DRD are applicable only to the preparation of the deliverable documentation described by that DRD.

References to documents other than applicable documents in the data requirements of this DPD may sometimes be utilized, and shall be indicated in 13. Remarks of the DRD. These do not constitute a contractual obligation on the contractor. They are to be used only as a possible example or to provide related information to assist the contractor in developing a response to that particular data requirement.

## 2.2 Subcontractor Data Requirements

2.2.1 The contractor shall specify to subcontractors and vendors, if any, the availability source of all data required for the satisfactory accomplishment of their contracts. The contractor shall validate these requirements for documents when appropriate; where the requirement concerns other contractor data, the contractor shall provide his subcontractor or vendor with the necessary documents. All such requests shall be accomplished under the auspices of the contractor.

2.2.2 Reference to subcontractor data in the contractor's responses is permissible, providing the references are adequate and include such identification elements as title, number, revision, etc., and a copy of the referenced data is supplied with the response document at time of delivery to NASA.

## 2.3 Data Distribution, Format, Data Restriction Marking, and Transmittal

2.3.1 Distribution: Distribution of required documentation shall be in quantities determined by the Contracting Officer. Recipient names and email (if applicable) addresses shall be noted on a separate distribution list to be furnished by the Contracting Officer. The Contracting Officer's letter may include other information pertinent to delivery of data, as required.

### 2.3.2 Format

2.3.2.1 Electronic Format: Electronic submission of data deliverables is required. Electronic deliverables shall be printable. Data deliverables shall be delivered to NASA in the format specified below unless a specific format is required by a DRD. Data submittals shall consist of a single Adobe Acrobat PDF file and the native format electronic file(s). The preferred native formats include Microsoft Word, Excel, PowerPoint or CAD drawing plot file, as appropriate. Where a single native format file is not possible, multiple files may be integrated into a single ZIP file for submission. The organization of the contents of the integrated ZIP file shall be made readily apparent to the reader, and each file within the integrated product shall be clearly identifiable and traceable within the organization of the integrated product. If files are fragmented, file names shall be labeled logically and contiguously, and the files shall be easily reassembled or merged (e.g. 1 filename, 2 filename, 2a filename, etc.). The software versions shall be confirmed prior to submittals.

2.3.2.2 Hardcopy Format: In addition to the electronic submittal, one hardcopy package of specific data deliverables shall be delivered to the NASA Contracting Officer for the Government contract file. This requirement is indicated in Item 15.4, Format of each DRD. The hardcopy package shall consist of the contractor's Transmittal Memo and one copy of the data deliverable.

### 2.3.3 Data Restriction Marking

2.3.3.1 Data Restriction Determination and Marking Requirements: The contractor shall determine the data restriction that applies to each data deliverable and mark the data restriction on the data coversheet, or indicate the data restriction in the data transmittal package if the data format precludes identification of data restriction directly in the data. The contractor shall make a determination for each individual data deliverable item, and shall not apply a default or blanket

data restriction marking to all data deliverables (e.g., “data may be export restricted”). If NASA does not agree with the contractor applied data restriction, the NASA Contracting Officer shall return the data to the contractor, cancel the markings, or ignore the markings consistent with the procedures set forth in the “data rights” clause(s) contained in the contract.

- 2.3.3.2 Data Restriction Categories and Marking Statements: The contractor shall consider the following data restriction categories, as a minimum, and utilize specified marking statements.

If data delivered under this contract is subject to the International Traffic in Arms Regulations (ITAR), the data shall contain an “ITAR Notice” as follows:

**International Traffic in Arms Regulations (ITAR) Notice**

This document contains information which falls under the purview of the U.S. Munitions List (USML), as defined in the International Traffic in Arms Regulations (ITAR), 22 CFR 120-130, and is export controlled. It shall not be transferred to foreign nationals in the U.S. or abroad, without specific approval of a knowledgeable NASA export control official, and/or unless an export license/license exemption is obtained/available from the United States Department of State. Violations of these regulations are punishable by fine, imprisonment, or both.

If data delivered under this contract is subject to the Export Administration Regulations (EAR), the data shall contain the “EAR Notice” as follows:

**Export Administration Regulations (EAR) Notice**

This document contains information within the purview of the Export Administration Regulations (EAR), 15 CFR 730-774, and is export controlled. It may not be transferred to foreign nationals in the U.S. or abroad without specific approval of a knowledgeable NASA export control official, and/or unless an export license/license exception is obtained/available from the Bureau of Industry and Security, United States Department of Commerce. Violations of these regulations are punishable by fine, imprisonment, or both.

If the contract contains FAR 52.227-14 *Alternate II*, the “Limited Rights Notice” may be applicable to data (other than computer software) delivered under this contract.

If the contract contains FAR 52.227-14 *Alternate III*, the “Restricted Rights Notice” may be applicable to computer software delivered under this contract.

If the contract contains FAR 52.227-20, the “SBIR Rights Notice” may be applicable to SBIR data delivered under this contract.

If the contract contains NFS 1852.237-73, a sensitive information legend may be applicable to information delivered under this contract.

In accordance with the applicable data clause (e.g., FAR 52.227-14(c) or FAR 52.227-20(c)), the contractor may be able to assert a copyright claim in data delivered under this contract. When claim to copyright is made, the Contractor shall affix the applicable copyright notices of 17 U.S.C. 401 or 402 and acknowledgment of Government sponsorship (including contract number) to the data when such data are delivered to the Government.

2.3.4 Transmittal

- 2.3.4.1 Data shall be transmitted to NASA by email, CD or DVD, hardcopy, or other mechanism agreed to by the Contracting Officer, COTR, and Project representatives who are responsible to receive, index, and store the data deliverables.

- 2.3.4.2 If email is used to transmit data deliverables, the email size shall be 10 Megabytes or less to ensure receipt by the NASA email servers. Encrypted email format shall be used to transmit data which has been judged sensitive by the contractor (e.g., export controlled, limited rights data, SBIR, restricted computer software, copyrighted, etc.).
- 2.3.4.3 Data Transmittal Package: Each data transmittal package shall include:
- a. Transmittal memorandum that specifies the meta-data below for each data transmittal:
    1. Contract number.
    2. Data Requirements Description (DRD) number.
    3. DRD data type (specified in Item 3 on the DRD).
    4. Submission date or milestone being satisfied.
    5. Document number and revision.
    6. Document title.
    7. File names of all files being delivered; file naming convention shall clearly identify the document being delivered.
    8. Distribution (as defined by the Contracting Officer's letter).
    9. Requested response date.
    10. Contractor assigned data restriction (export controlled, limited rights data, SBIR, restricted computer software, copyrighted, etc.) if not marked on data.
    11. NASA Records Retention Schedule (NRRS) number, if applicable. (See NPR 1441.1, NASA Records Retention Schedules).
  - b. Printable electronic files or hardcopy data.
- 2.3.5 Use of the MSFC Documentation Repository: Marshall Policy Directive (MPD) 2210.1 specifies the requirements for utilizing the Documentation Repository. Electronic data deliverables should be transmitted directly to the Repository via a secure web page, available at <https://webpub.nis.nasa.gov/submittal/index.html>. Computer-Aided Design (CAD) drawings shall be submitted in the original native vector, Hewlett-Packard Graphic Language (HPGL) and raster image formats.
- 2.4 Printing: All printing, duplicating, or binding shall be in accordance with NFS 1852.208-81, Restrictions on Printing and Duplicating. Printing of formal reports and Type 1 and 2 data in book format shall be in accordance with the following general specifications:
- a. Method of reproduction - offset/xerography.
  - b. Finished size - 8 1/2" X 11".
  - c. Paper - 20-pound opaque bond.
  - d. Cover - Litho cover stock.
  - e. Pages shall be printed on both sides; blank pages shall be avoided when possible.
  - f. Oversize pages shall be avoided when possible, but if necessary shall be folded to 8 1/2" X 11".
  - g. Binding shall be the most economical method commensurate with the size of the report and its intended use.
- 2.5 Contractor's Internal Documents: The contractor's internal documents shall be used to meet the data requirements of this DPD unless a specific format is required by the applicable DRD.
- 2.6 Document Identification: Type 1 and 2 documents published by the contractor and submitted in response to the data requirements of this DPD shall be identified within an organized identification numbering system prescribed to NASA by the contractor and, if applicable, as approved by NASA. For all data types, the document number, change legend, date, and title constitute the minimum identification of the specific document and shall appear on the cover and title page. The contract number shall also appear on the cover and title page as separate markings.

The originator and organization shall be included on the title page. The document number, change legend, and date shall appear on each page of the document. In the front matter of each document, identify the DPD number and applicable DRD number(s) required for document preparation. Successive issues or revisions of documents shall be identified in the same manner as the basic issue and shall have appropriate change identification. Drawings and ECP's are excluded from the marking provisions of this paragraph. All Type 1 documentation, excluding configuration management requirements, shall be marked "PRELIMINARY PENDING NASA APPROVAL," and once approved shall be reissued with "APPROVED BY NASA" and the date and approval authority annotated on the cover.

- 2.7 Reference to Other Documents and Data Deliverables in Data Submittals: All referenced documents shall be made readily available to the cognizant NASA organization upon request. The contractor should make sure that the references are available to NASA in a manner which does not incur delays in the use of the response document. Reference may be made, within one data submittal, to other data submittals delivered in response to this DPD in those cases where the data required by one DRD may have been delivered by the contractor in response to another DRD. The reference to previously-submitted data shall include the applicable DRD number, data submittal version date, and location within the referenced document.
- 2.8 Maintenance of Type 1 Document Submittals
- 2.8.1 Revisions of Type 1 documentation may be accomplished either by individual page revision or by a complete reissue of the document identified in accordance with requirements of 2.7 above, with the exception of drawings (which shall be revised in accordance with contract configuration management requirements).
- 2.8.2 Individual page revisions shall be made as deemed necessary by the contractor or as directed by the Contracting Officer.
- 2.8.3 A Type 1 document shall be completely reissued when, in the opinion of the contractor and/or NASA, the document has been revised to the extent that it is unusable in its present state, or when directed by the Contracting Officer. When complete reissues are made, the entire contents of the document shall be brought up to date and shall incorporate revised pages. All revisions shall be recorded. A revision log shall identify complete reissues except for periodic reports and documents which are complete within themselves as final.
- 2.8.4 Changes of a minor nature to correct obvious typing errors, misspelled words, etc., shall only be made when a technical change is made, unless the accuracy of the document is affected.
- 2.8.5 All revised pages shall be identified by a revision symbol and a new date. Each document shall contain a log of revised pages that identify the revision status of each page with the revision symbol. This list shall follow the table of contents in each document. The line or lines revised on a given page shall be designated by the use of vertical line in the margin of the page, and the change authority shall be indicated adjacent to the change.
- 2.8.6 Contractor Type 1 documents shall not be submitted containing pen and ink markups which correct, add to, or change the text, unless schedule problems exist and approval is obtained in writing from the Contracting Officer. Such markups, however, shall not exceed 20 percent of the page content and shall be acceptable provided that the reproduced copies are legible. In addition, hand-drawn schematics, block diagrams, data curves, and similar charts may be used in original reports in lieu of formally prepared art work, as long as legibility of copies is not impaired. Acceptability shall be determined by the Contracting Officer.

### 3.0 DPD MAINTENANCE PROCEDURES

3.1 NASA-Initiated Change: New and/or revised data requirements shall be incorporated by contract modification to which the new or revised portion of the DPD shall be appended. The contractor shall notify the Contracting Officer in the event a deliverable data requirement is imposed and is not covered by a DRD, or when a DRD is changed by a contract modification and for which no revision to DPD is appended. In such cases, the contractor shall submit the requested changes to NASA for approval. See paragraph 3.3.1 for change procedures.

3.2 Contractor-Initiated Change: Contractor-proposed data requirements, or proposed changes to existing requirements shall be submitted to NASA for approval.

### 3.3 DPD Change Procedures

3.3.1 Changes to a contractual issue of this DPD shall be identified by NASA on the Document Change Log and Page Revision Log. The actual revised material on the DPD page shall be identified by placing a heavy vertical line in the right-hand margin extending the entire length of the change. In addition, the numerical control number of the contractual direction authorizing the change shall be placed adjacent to the vertical revision line. These revision identifiers shall be used to reflect the current revision only; any previous symbols on a page shall be deleted by the current revision.

3.3.2 The date of the contractual direction paper, e.g., Change Order, Supplemental Agreement, or Contracting Officer's letter shall be entered under the "Status " column of the Page Revision Log adjacent to the affected page or DRD number, and in the "as of" block. The date that was in the "as of" block shall be entered in the "Superseding" block.

3.3.3 The Document Change Log entitled "Incorporated Revisions" shall be changed to indicate the number, portions affected, and associated Supplemental Agreement number, if applicable.

3.3.4 The Document Change Log entitled "Outstanding Revisions" is changed periodically to indicate outstanding Change Orders and Contracting Officer notification letters.

### 3.4 DPD Reissues

3.4.1 When conditions warrant, the DPD shall be reissued by NASA and shall supersede the existing DPD in its entirety. Reissues shall be issued by contractual direction.

3.4.2 All revision symbols (vertical lines and contractual direction control numbers) shall be removed from all pages; revision dates shall remain in the Date Revised block on DRD's that have been revised. The issue symbol, which shall commence with "A" and progress through "Z," shall be entered in the DPD identification block of each DRD page of the DPD.

## Marshall Engineering Technician and Trades Services (METTS)

### Data Requirements Lists

<u>DRD</u>	<u>DATA TYPE</u>	<u>TITLE</u>	<u>OPR</u>
CD - Contractual Data			
1163CD-001	2	Contractor Information Technology Security Program Plan	IS10
1163CD-002	3	Technology Reports	ED03
CM - Configuration Management			
1163CM-001	1	Acceptance Data Package	ED03
1163CM-002	2/3	Functional Configuration/Physical Configuration Audit Documentation	ED03
LS -Logistics			
1163LS-001	2	Government Property Management Plan	AS41
MA - Management			
1163MA-001	1	Management Plan	ED03
1163MA-002	1	Task Order Plan (TOP)	ED03
1163MA-003	3	Financial Management Report (533M)	CS40
1163MA-004	3	Monthly Status Report	ED03
1163MA-005	3	Badged Employee and Remote IT User Listing	AS50
1163MA-006	3	Contractor Employee Clearance Document	AS50
1163MA-007	3	Position Risk Designation for Non-NASA Employee	AS50
1163MA-008	3	Monthly and Semi-Annually Performance Reports	ED03
1163MA-009	2	Organizational Conflict of Interest (OCI) Avoidance Plan	PS21
QE - Quality			
1163QE-001	1	Quality Management System Plan	QD40
SA - Safety			
1163SA-001	2	Safety, Health and Environmental (SHE) Plan	QD50/AS10
1163SA-002	1	Personnel Certification Plan	QD40
1163SA-003	3	Mishap and Safety Statistics Report	QD50

## DATA REQUIREMENTS DESCRIPTION (DRD)

- |   |   |
|---|---|
| <p>1. <b>DPD NO.:</b> 1163            <b>ISSUE:</b> RFP</p> <p>3. <b>DATA TYPE:</b> 2</p> | <p>2. <b>DRD NO.:</b> <b>1163CD-001</b></p> <p>4. <b>DATE REVISED:</b></p> <p>5. <b>PAGE:</b> 1/2</p> |
|---|---|
6. **TITLE:** Contractor Information Technology Security Program Plan
7. **DESCRIPTION/USE:** To ensure that the contractor fully understands their responsibility for information and information technology (IT) security as required in NFS 1852.204-76. This plan will describe the contractor's information technology security program that addresses the management, operational, and technical aspects of protecting the confidentiality, integrity and availability of information and information technology systems.
8. **OPR:** IS10                      9. **DM:** ED03
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** 30 days after Contract Award
12. **SUBMISSION FREQUENCY:** Revise after any significant changes. Review and update every three years.
13. **REMARKS:** The Federal Information Processing Standards (FIPS) Publication Series of the National Institute of Standards and Technology (NIST) is the official series of publications relating to standards and guidelines adopted and promulgated under the provisions of the Federal Information Security Management Act (FISMA) of 2002. FIPS Pub 200, Minimum Security Requirements for Federal Information and Information Systems, specifies minimum security requirements for information and information systems supporting the executive agencies of the federal government and a risk-based process for selecting the security controls necessary to satisfy the minimum security requirements.
- The seventeen security-related areas to be addressed in the content of the Contractor IT Security Program Plan represent a broad-based, balanced information technology security program that addresses the management, operational, and technical aspects of protecting information and information technology systems. Additional information for these security-related areas can be found in FIPS Pub 200.
14. **INTERRELATIONSHIP:** PWS paragraph 1.2.4
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The extent of the Contractor IT Security Program Plan can vary and shall be appropriate to comply with the breadth of sensitivity level security requirements for protecting information and information technology (IT) when the Contractor or its subcontractors must obtain physical or electronic access to NASA's computer systems, networks, or IT infrastructure, or where information is stored, generated, processed or exchanged by/with NASA or on behalf of NASA by a contractor or subcontractor, regardless of whether the information resides on a NASA or a contractor/ subcontractor's information system.
- 15.2 **APPLICABLE DOCUMENTS:**  
NFS 1852.204-76                      *Security Requirements for Unclassified Information Technology Resources (May 2007)*

## DRD Continuation Sheet

**TITLE:** Contractor Information Technology (IT) Security  
Program Plan

**DRD NO.:** 1163CD-001

**DATA TYPE:** 2

**PAGE:** 2/2

---

15. **DATA PREPARATION INFORMATION:**

15.3 **CONTENTS:** The Contractor IT Security Program Plan shall contain:

- a. A brief description of the types of information that will be stored, generated, processed, or exchanged with NASA or on behalf of NASA during the performance of the contract. Provide the security categorization of the information (LOW, MODERATE, or HIGH). A description of the policy or procedure to ensure the return of all NASA information and IT resources provided to the contractor during the performance of the contract and certify that all NASA information has been purged from contractor-owned systems used in the performance of the contract.
- b. A brief description regarding personnel (location, local or remote connections or access, privileged users, etc.) and the IT resources (NASA provided or contractor-owned) and environments utilized in the support of the work to be performed and their access to information identified.
- c. A brief description of policy or procedure that ensures the contractor inserts NFS 1852.204-76 in all subcontracts as required.
- d. Provide a description of each of the security-related areas (see Remarks) with regard to policies and procedures of the contractor's enterprise-wide information technology security program protecting the confidentiality, integrity, and availability of information and information technology systems.
  1. Management.
    - (a) Certification, Accreditation, and Security Assessments.
    - (b) Planning.
    - (c) Risk Assessment.
    - (d) Systems and Services Acquisition.
  2. Operational.
    - (a) Awareness and Training.
    - (b) Configuration Management.
    - (c) Contingency Planning.
    - (d) Incident Response.
    - (e) Maintenance.
    - (f) Media Protection.
    - (g) Physical and Environmental Protection.
    - (h) Personnel Security.
    - (i) System and Information Integrity.
  3. Technical.
    - (a) Access Control.
    - (b) Audit and Accountability.
    - (c) Identification and Authentication.
    - (d) System and Communications Protection.

NOTE: Any security-related area not currently implemented in the Contractor's IT security program shall be identified and the contractor's plan of action for implementation shall be explained.

15.4 **FORMAT:** Contractor format is acceptable and shall be consistent with contents of paragraph 15.3d of this DRD.

15.5 **MAINTENANCE:** Changes shall be incorporated by change page or complete reissue.

## DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1163                      **ISSUE:** RFP
2. **DRD NO.:** **1163CD-002**
3. **DATA TYPE:** 3
4. **DATE REVISED:**
5. **PAGE:** 1/3
6. **TITLE:** Technology Reports
7. **DESCRIPTION/USE:** Provides NASA with technical information concerning any invention, discovery, improvement, or innovation made by a contractor in the performance of work under this contract for the purpose of disseminating this information to obtain increased use. Also, to provide NASA with data to review for possible patentable items.
8. **OPR:** ED03                      9. **DM:** ED03
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:**  
Disclosure of Invention and New Technology (NASA Form 1679): Within 2 months of identification of subject invention.  
Interim NASA New Technology Summary Report (NTSR) Form: 12 months from the date of the contract.  
Utilization Report: Upon Contracting Officer's request.
12. **SUBMISSION FREQUENCY:**  
Disclosure of Invention and New Technology (NASA Form 1679): For each subject invention.  
Interim NASA New Technology Summary Report (NTSR): Every 12 months.  
Final NASA New Technology Summary Report (NTSR): Three months after completion of contracted work.  
Utilization Report: No more frequently than annually.
13. **REMARKS:** Copies of NASA Forms 1679, and the NASA New Technology Summary Report Form (Interim and Final) may be obtained and filled out electronically at: <http://www.webentre.nasa.gov/>. These forms may also be obtained from the New Technology Representative ([mailto: Carolyn E.McMillan@nasa.gov](mailto:Carolyn.E.McMillan@nasa.gov)).
14. **INTERRELATIONSHIP:** PWS paragraph 1.2.3
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Technology Reports include technical detail as is necessary to identify and fully describe a "Subject Invention". Per FAR 52.227-11, "Subject Invention" means any invention of the contractor conceived or first actually reduced to practice in the performance of work under this contract.
- 15.2 **APPLICABLE DOCUMENTS:**  
FAR 52.227-11                      Patent Rights - Retention by Contractor (Short Form) (June 1997) - As modified by  
NASA FAR Supplement 1852.227-11

## DRD Continuation Sheet

TITLE: Technology Reports

DRD NO.: 1163CD-002

DATA TYPE: 3

PAGE: 2/3

15. **DATA PREPARATION INFORMATION (CONTINUED):**

15.3 **CONTENTS:** The Technology Reports consist of:

- a. Disclosure of Invention and New Technology (Including Software): In accordance with FAR 52.227-11(c), the disclosure to the agency shall be in the form of a written report and shall identify the contract under which the invention was made and the inventor(s). It shall be sufficiently complete in technical detail to convey a clear understanding to the extent known at the time of the disclosure, of the nature, purpose, operation, and the physical, chemical, biological or electrical characteristics of the invention. The disclosure shall also identify any publication, on sale or public use of the invention and whether a manuscript describing the invention has been submitted for publication and, if so, whether it has been accepted for publication at the time of disclosure. In addition, after disclosure to the agency, the Contractor shall promptly notify the agency of the acceptance of any manuscript describing the invention for publication or of any on sale or public use planned by the Contractor. This reporting requirement may be met by completing NASA Form 1679 (latest revision) in hardcopy or online at: <http://www.webentre.nasa.gov/>. Use of this form or the online system is preferred; however, if the form is not used the following information should be provided in order to meet the reporting requirement:
  1. Descriptive title.
  2. Innovator(s) name(s), title(s), phone number(s), and home address(es).
  3. Employer when innovation made (name and division).
  4. Address (place of performance).
  5. Employer status (e.g., Government, college or university, non-profit organization, small business firm, large entity).
  6. Origin (e.g., NASA grant number, NASA prime contract number, subcontractor, joint effort, multiple contractor contribution, other).
  7. NASA Contracting Officer's Technical Representative (COTR).
  8. Contractor/grantee New Technology Representative.
  9. Brief abstract providing a general description of the innovation:
    - (a) Description of the problem or objective that motivated the innovation's development.
    - (b) Technically complete and easily understandable description of innovation developed to solve or meet the objective.
    - (c) Unique or novel features of the innovation and the results or benefits of its application.
    - (d) Speculation regarding potential commercial applications and points of contact (including names of companies producing or using similar products).
  10. Additional documentation.
  11. Degree of technological significance (e.g., modification of existing technology, substantial advancement in the art, major breakthrough).
  12. State of development (e.g., concept only, design, prototype, modification, production model, used in current work).
  13. Patent status.
  14. Dates or approximate time period during which this innovation was developed.
  15. Previous or contemplated publication or public disclosure including dates.
  16. Answers to the following questions (for software only):
    - (a) Using outsiders to beta-test code? If yes, done under beta-test agreement?
    - (b) Modifications to this software continue by civil servant and/or contractual agreement?
    - (c) Previously copyrighted (if so, by whom)?

## DRD Continuation Sheet

TITLE: Technology Reports

DRD NO.: **1163CD-002**

DATA TYPE: 3

PAGE: 3/3

15. **DATA PREPARATION INFORMATION (CONTINUED):**

- (d) Were prior versions distributed (if yes, supply NASA or Contractor contract)?
- (e) Contains or is based on code owned by a non-federal entity (if yes, has a license for use been obtained)?
- (f) Has the latest version been distributed without restrictions as to use or disclosure for more than one year (if yes, supply date of disclosure)?

17. Name(s) and signature(s) of innovator(s).

- b. Interim NASA New Technology Summary Report: This report shall consist of a complete listing of subject inventions for the previous 12-month period or certification that there are none. Completion of Interim NASA New Technology Summary Report (NTSR) Form shall satisfy this reporting requirement. Use of the form utilizing the online system at <http://www.webentre.nasa.gov/> is preferred; however an alternate format is acceptable provided all required information is provided.
- c. Final NASA New Technology Summary Report: This report shall consist of a comprehensive list of all subject inventions for the duration of the contract or certification that there are none. Completion of Final NASA New Technology Summary Report (NTSR) Form shall satisfy this reporting requirement. Use of the form utilizing the online system at <http://www.webentre.nasa.gov/> is preferred; however an alternate format is acceptable provided all required information is provided.
- d. Report on utilization of subject inventions: This report provides information on the utilization of a subject invention or on efforts at obtaining such utilization that are being made by the contractor or its licensees or assignees. Per FAR 52.227-11, this report shall include information regarding the status of development, date of first commercial sale or use, gross royalties received by the contractor, and other data requested by the Contracting Officer.

- 15.4 **FORMAT:** The Disclosure of Invention and New Technology (Including Software) report may use NASA Form 1679 (latest revision) or the online system at: <http://www.webentre.nasa.gov/>, or provide sufficient information to meet the reporting requirement.

The interim and final NASA New Technology Reports may use NASA NTSR Form, Interim or Final (whichever is applicable) utilizing the online system at: <http://www.webentre.nasa.gov/>, or provide sufficient information to meet the reporting requirement.

- 15.5 **MAINTENANCE:** None required

## DATA REQUIREMENTS DESCRIPTION (DRD)

- |  |   |
|--|---|
| <p>1. <b>DPD NO.:</b> 1163      <b>ISSUE:</b> RFP</p> <p>3. <b>DATA TYPE:</b> 1</p> <p>6. <b>TITLE:</b> Acceptance Data Package</p> <p>7. <b>DESCRIPTION/USE:</b> To provide the documentation needed by MSFC to establish the acceptability of equipment/software for deliverable products.</p> <p>8. <b>OPR:</b> ED03                      9. <b>DM:</b> ED03</p> <p>10. <b>DISTRIBUTION:</b> Per Contracting Officer's letter</p> <p>11. <b>INITIAL SUBMISSION:</b> Preliminary two weeks prior to each Acceptance Review (AR)</p> <p>12. <b>SUBMISSION FREQUENCY:</b> Final with delivery of each Configuration Item (CI)</p> <p>13. <b>REMARKS:</b></p> <p>14. <b>INTERRELATIONSHIP:</b> PWS paragraph 2.4</p> <p>15. <b>DATA PREPARATION INFORMATION:</b></p> <p>15.1 <b>SCOPE:</b> The Acceptance Data Package (ADP) contains the elements of documentation required to establish the acceptability of DEI products as requested in each customer order.</p> <p>15.2 <b>APPLICABLE DOCUMENTS:</b> None</p> <p>15.3 <b>CONTENTS:</b></p> <p style="padding-left: 20px;">a. The Acceptance Data Package shall include:</p> <ol style="list-style-type: none"> <li>1. Copy of Visual Manufacturing™ customer order and final work order.</li> <li>2. Copy of DD Form 250.</li> <li>3. Original work orders that specify Government mandatory inspection points (GMIPs).</li> <li>4. Final Deliverable End Item (DEI) configuration report/certification.</li> <li>5. DARs (waivers/deviations) and contractor MRB action discrepancy records.</li> <li>6. MSFC internal customer supplied product (ICPS) documentation submitted with articles and materials supplied by the customer, i.e. NASA MSFC parts tags (MSFC Form 312), log books (MSFC Form 3473), Temporary Installation Record (MSFC Form 4340), temporary red streamers (MSFC Tag 16) or other NASA Center or customer documentation.</li> <li>7. Generated log books when specified as an engineering requirement.</li> <li>8. Temporary Installation Record (MSFC Form 4340) as applicable for deliverable hardware products with attached Red Streamers (MSFC Tag 16).</li> </ol> <p style="padding-left: 20px;">b. Additional ADP to support specific customer requirements shall be specified on the customer order, which may include but are not limited to:</p> <ol style="list-style-type: none"> <li>1. Drawings, engineering orders, and engineering parts list.</li> <li>2. Results and draft of oven/furnace temperature survey.</li> <li>3. Results of processed representative sample specimens (hardness values and sketch) as required.</li> <li>4. Hardness values of each heat treated part, indicating the part number, serial number, and hardness.</li> <li>5. Material certification – chemical and/or physical test results.</li> <li>6. Nondestructive Evaluation (NDE) results and personnel certification.</li> </ol> | <p>2. <b>DRD NO.:</b> <b>1163CM-001</b></p> <p>4. <b>DATE REVISED:</b></p> <p>5. <b>PAGE:</b> 1/2</p> |
|--|---|

**DRD Continuation Sheet****TITLE:** Acceptance Data Package**DRD NO.:** 1163CM-001**DATA TYPE:** 1**PAGE:** 2/2

---

15. **DATA PREPARATION INFORMATION (CONTINUED):**

7. Welder's certification/weld procedures.
8. Contractor miscellaneous inspection records.
9. Copy of work orders.
10. Alignment and Center of Gravity (CG) data.
11. Limited life data.
12. Cleanliness data.
13. Assembly integration data.

15.4 **FORMAT:** Contractor format is acceptable.15.5 **MAINTENANCE:** The ADP shall be maintained current for five (5) years.



## DRD Continuation Sheet

**TITLE:** Functional Configuration/Physical Configuration Audit **DRD NO.:** 1163CM-002  
Documentation

**DATA TYPE:** 3

**PAGE:** 2/4

---

15. **DATA PREPARATION INFORMATION (CONTINUED):**

- c. Plan - A plan shall be submitted prior to initiating the audit, stating configuration items to be reviewed; data required to perform the review; how open actions are tracked; defining success criteria; and providing for formal certification of the audit. The plan shall also define extent of contractor and government participation in the review.
- d. Minutes - The minutes shall contain a description of the audit with sufficient detail to enable the audit to be made a matter of record. The minutes shall include the presentation charts, a listing of Findings, action items with actionee and suspense (closure) data, and identification of the documents which describe the approved baseline established at the conclusion of the PCA. See Attachment 2 for distribution and availability of data.
- e. Findings - showing action items, actionees, suspense dates and closure status shall be submitted. See Attachment 2 for distribution and availability of data.

15.4 **FORMAT:** Contractor format is acceptable.

15.5 **MAINTENANCE:** As required to correct errors and to maintain findings closure status.

**Configuration Audit Required Data****Documentation required for FCA**

(As applicable)

- Specifications.
- Drawings and parts list.
- ECPs and DARs incorporated and pending.
- Specification and drawing tree.
- Fracture control plan.
- Structural dynamics, analyses, loads, and models documentation (updated).
- Materials Usage Agreement (MUAs).
- Material Identification Usage List (MIUL).
- Certification of Qualification(s) (COQ's).
- Verification procedures and requirements.
- Complete list of successfully accomplished tests and test results.
- Complete list of successful tests if detailed test data are not recorded.
- Complete list of tests required but not performed.
- Software verification data.
- Software development documents.
- Software version description.
- Critical Design Review (CDR) RIDs and dispositions.
- Mission constraints.
- Nonconformance reports.
- Interface control drawings/documents.
- Hazard analysis/risk assessment.
- Test plans and procedures.
- Test reports.
- Verification closures.
- Verification tracking log.
- Analysis reports.
- ALERTS tracking log.

**Documentation required for the PCA**

(As applicable)

- Final version of all specifications.
- Product drawings and parts list.
- Configuration accounting and status reports.
- Final version of all software documents.
- Final version of software version description document.
- Copy of all FCA findings for each CI.
- List of approved and outstanding ECPs and DARs.
- Copies of ECPs and DARs as requested at the audit.
- Drawing and specification tree.
- Indentured parts list/as-designed configuration definition.
- As run test procedures (when applicable, include any test discrepancy records).
- Copy of parts tags or verification closure for verification items verified by inspection method.
- Manufacturing and inspection (build) records.
- Inspection records or inspection verification closures.
- As-built electronic data.
- Discrepancy Reports (DR's).
- Log Books.

**ATTACHMENT 2**

FCA/PCA Documentation  
Distribution and Availability of Data

Document	Data Type	FCA Copies/ Availability	PCA Copies/ Availability
Agenda	2	One/15 days prior to audit, Approved copies at audit	One/15 days prior to audit, Approved copies at audit
Data Package	3	One/Two weeks prior to audit	One /Two weeks prior to audit
Presentation Charts	3	One for each attendee at audit	One for each attendee at audit
Minutes	2	One at audit/ copy to each attendee within two weeks	One at audit/one to each attendee within two weeks
Findings (generated at Reviews)	2	Provided as hard copy or electronically per the project specific Audit Plan.	Close out to be as specified in the project specific Audit Plan.

## DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1163                    **ISSUE:** RFP
2. **DRD NO.:** **1163LS-001**
3. **DATA TYPE:** 2
4. **DATE REVISED:**
5. **PAGE:** 1/1
6. **TITLE:** Government Property Management Plan
7. **DESCRIPTION/USE:** To describe the method of controlling and managing Government property.
8. **OPR:** AS41                    9. **DM:** ED03
10. **DISTRIBUTION:** Cognizant property administrator
11. **INITIAL SUBMISSION:** Preliminary three months after Authority to Proceed (ATP)
12. **SUBMISSION FREQUENCY:** Final one year after ATP, revise as required
13. **REMARKS:** This document shall be the official contract requirements document for the control and identification of all Government property.
14. **INTERRELATIONSHIP:** PWS paragraph 1.2.2
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Government Property Management Plan defines the contractor's methods of care, accounting, and control of Government property.
- 15.2 **APPLICABLE DOCUMENTS:**

FAR	<i>Federal Acquisition Regulation, Part 45</i>
NPR 5100.4B	<i>Federal Acquisition Regulation Supplement, (NASA/FAR Supplement) Part 18-45 and latest revisions thereto</i>
- 15.3 **CONTENTS:** This plan shall satisfy the requirements of the documents listed in 15.2, and the contract. This plan shall consist of those procedures which constitute the contractor's property management system and shall include the following categories:
 

a. Property management.	i. Reports.
b. Acquisition.	j. Consumption.
c. Receiving.	k. Utilization.
d. Identification.	l. Maintenance.
e. Records.	m. Subcontractor control.
f. Movement.	n. Disposition.
g. Storage.	o. Contract close-out.
h. Physical inventories.	
- 15.4 **FORMAT:** Contractor format is acceptable.
- 15.5 **MAINTENANCE:** Changes shall be incorporated by change page or complete reissue.

## DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1163      **ISSUE:** RFP
2. **DRD NO.:** **1163MA-001**
3. **DATA TYPE:** 1
4. **DATE REVISED:**
5. **PAGE:** 1/1
6. **TITLE:** Management Plan
7. **DESCRIPTION/USE:** To provide a description of the contractor's overall management system and organization for accomplishing the requirements set forth in the contract.
8. **OPR:** ED03                      9. **DM:** ED03
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** Thirty (30) days after Authority to Proceed (ATP)
12. **SUBMISSION FREQUENCY:** Revise as required
13. **REMARKS:**
14. **INTERRELATIONSHIP:** PWS paragraph 1.1
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Management Plan shall describe the contractor's concept plans, practice, and approach for accomplishing the requirements set forth in the contract, i.e., managing and controlling project tasks, experimental work, and management interfaces. The plan shall be in such detail as necessary to convey the contractor's internal procedures.
- 15.2 **APPLICABLE DOCUMENTS:** None
- 15.3 **CONTENTS:** The Management Plan shall include:
  - a. Description of the project tasks to be accomplished and an outline of methods by which the contractor proposes to accomplish each task down to the level III WBS task level.
  - b. Description of management concepts, plans, project management and task/control systems, organizational approach, and communication channels between the contractor and the Government. This shall include descriptions, flow charts, schedules, and other documentation necessary to give a comprehensive plan of organization and accomplishment.
  - c. Receiving, estimating and processing customer orders through the fabrication and assembly of Research and Development (R&D) Space Flight and Associated Hardware.
  - d. Issuing, receiving, and controlling work done by subcontractor(s) to augment the fabrication and assembly capability.
  - e. Fabrication process planning and production control (which includes scheduling and monitoring shop work loads, expediting hardware and status of work orders).
  - f. Description of how outside/commercial work will be solicited, procured, managed, and scheduled. Description of how cost to customer is determined.
- 15.4 **FORMAT:** Contractor format is acceptable.
- 15.5 **MAINTENANCE:** Changes shall be incorporated by change page or by complete reissue.

## DATA REQUIREMENTS DESCRIPTION (DRD)

- |  |   |
|--|---|
| <p>1. <b>DPD NO.:</b> 1163      <b>ISSUE:</b> RFP</p> <p>3. <b>DATA TYPE:</b> 1</p> <p>6. <b>TITLE:</b> Task Order Plan (TOP)</p> <p>7. <b>DESCRIPTION/USE:</b> To provide a plan that satisfies the requirements set forth in a Task Order Request.</p> <p>8. <b>OPR:</b> ED03                      9. <b>DM:</b> ED03</p> <p>10. <b>DISTRIBUTION:</b> Per Contracting Officer's letter</p> <p>11. <b>INITIAL SUBMISSION:</b> Draft submitted within Final fifteen (15) days after Authority to Proceed (ATP)</p> <p>12. <b>SUBMISSION FREQUENCY:</b> Five (5) days of Task Order Request (TOR) or modification request of an existing Task Order Plan</p> <p>13. <b>REMARKS:</b></p> <p>14. <b>INTERRELATIONSHIP:</b> PWS paragraph 1.1.1</p> <p>15. <b>DATA PREPARATION INFORMATION:</b></p> <p>15.1 <b>SCOPE:</b> The Task Order Plan contains the elements of documentation necessary to determine the contractor's understanding of the requirements set forth in the Task Order Request.</p> <p>15.2 <b>APPLICABLE DOCUMENTS:</b> None</p> <p>15.3 <b>CONTENTS:</b> The Task Order Plan shall include:</p> <ul style="list-style-type: none"> <li>a. Contract Number.</li> <li>b. Task Order Title.</li> <li>c. Task Order Plan Number.</li> <li>d. Period of Performance.</li> <li>e. PR Number.</li> <li>f. Task Manager.</li> <li>g. Task Order Lead (contractor).</li> <li>h. Task Order Description.</li> <li>i. Technical Approach (including required input, guidelines and assumptions).</li> <li>j. Discussion of skills required.</li> <li>k. Special tools required.</li> <li>l. Milestones and Deliverables.</li> <li>m. Schedule.</li> <li>n. Special considerations (recruiting, consulting, etc.).</li> </ul> <p>15.4 <b>FORMAT:</b> Contractor format is acceptable.</p> <p>15.5 <b>MAINTENANCE:</b> Changes shall be incorporated by change page or by complete reissue.</p> | <p>2. <b>DRD NO.:</b> <b>1163MA-002</b></p> <p>4. <b>DATE REVISED:</b></p> <p>5. <b>PAGE:</b> 1/1</p> |
|--|---|

## DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1163                    **ISSUE:** RFP
2. **DRD NO.:** **1163MA-003**
3. **DATA TYPE:** 3
4. **DATE REVISED:**
5. **PAGE:** 1/1
6. **TITLE:** Financial Management Report (533M)
7. **DESCRIPTION/USE:** To provide monthly financial reports for monitoring program costs. The 533 reports are the official cost documents used at NASA for cost type, price redetermination, and fixed price incentive contracts.
8. **OPR:** CS40                    9. **DM:** ED03
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** Within 30 days after the incurrence of cost
12. **SUBMISSION FREQUENCY:** No later than 10 working days following the end of the contractor's accounting month
13. **REMARKS:**
14. **INTERRELATIONSHIP:** PWS paragraph 1.4
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Financial Management Report provides data on accumulated costs and funding projections for management of the contract.
- 15.2 **APPLICABLE DOCUMENTS:**  

NFS 1852.242-73	<i>NASA Contractor Financial Management Reporting, (November 2004)</i>
NPR 9501.2D	<i>NASA Contractor Financial Management Reporting</i>
- 15.3 **CONTENTS:** The elements of cost for financial reporting shall be mutually agreed by the contractor and NASA project office and cover labor hours by function, direct labor cost, materials, subcontracts, interdivisional work, other direct rates, overhead by pool, fringe, G&A, and fee. Changes or additions to elements of cost shall be by mutual agreement between the contractor and the NASA project manager. The data contained in the reports shall be auditable using Generally Accepted Accounting Principles. The 533M Report shall include actuals and projections at the total contract level. A summary page at the contract level shall be included reflecting the cumulative since inception cost for the contract. The 533 shall list all costs by Employee & PWS/WBS.
- 15.4 **FORMAT:** The NASA Form 533M shall be prepared per NPR 9501.2D and NFS 1852.242-73. Contractor format is acceptable provided all necessary requirements are met. Electronic submission of contractor data is strongly encouraged.
- 15.5 **MAINTENANCE:** None required

## DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1163                      **ISSUE:** RFP
2. **DRD NO.:** **1163MA-004**
3. **DATA TYPE:** 3
4. **DATE REVISED:**
5. **PAGE:** 1/2
6. **TITLE:** Monthly Status Reports
7. **DESCRIPTION/USE:** To provide visibility to contractor and MSFC project management of actual and potential problems and progress toward meeting the cost, technical and schedule requirements.
8. **OPR:** ED03                      9. **DM:** ED03
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** First calendar month following the end of the first full month after Authority to Proceed (ATP), unless otherwise specified by the Contracting Officer
12. **SUBMISSION FREQUENCY:** 10 days following the end of each month
13. **REMARKS:**
14. **INTERRELATIONSHIP:** PWS paragraph 1.1.4
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Monthly Status Reports provides data for the assessment of monthly cost, technical and schedule progress and summarizes the results of the entire contract work.
- 15.2 **APPLICABLE DOCUMENTS:** None
- 15.3 **CONTENTS:** The Monthly Status Reports shall contain:
  - a. Work accomplished for current reporting period, including a report of overall cost, technical and schedule performance.
  - b. Cost breakdown spreadsheet providing all cost information by employee:
    1. Employee Name.
    2. PWS/WBS supported for each Employee PWS/WBS combination:
      - (a) Hours on each PWS/WBS.
      - (b) Overtime hours for each PWS/WBS.
      - (c) Base Cost for hours.
      - (d) Base Costs to government.
      - (e) Overtime Costs to government.
      - (f) Travel charged to government.
      - (g) Training charged to government.
      - (h) Procurement charged to government for PWS/WBS.
  - c. Work planned for next reporting period.
  - d. Current problems which impede performance or impact schedule or cost, and proposed corrective action.
  - e. Other information that assist the Government in evaluating the contractor's cost, technical and schedule performance, e.g., innovative processes and cost reduction initiatives.
  - f. Man-hours expended and cost in each Level I and II task per WBS for the current months and cumulative months, showing overtime hours separately.
  - g. Personnel statistical information, numbers by functional assignments, etc.

**DRD Continuation Sheet**

TITLE: Monthly Status Reports

DRD NO.: **1163MA-004**

DATA TYPE: 3

PAGE: 2/2

---

15. **DATA PREPARATION INFORMATION (CONTINUED):**

- h. Provide minutes for each of the reviews that include copies of all presentation charts (including back-up charts). Minutes shall be signed by the Contractor and MSFC.
- i. The Final Report shall contain an overview of the entire contract effort.
- j. Additional requirements may be imposed within a Task Order for delivery to the Task Manager.

15.4 **FORMAT:** Contractor format is acceptable.15.5 **MAINTENANCE:** None required

## DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1163            **ISSUE:** RFP
2. **DRD NO.:** **1163MA-005**
3. **DATA TYPE:** 3
4. **DATE REVISED:**
5. **PAGE:** 1/1
6. **TITLE:** Badged Employee and Remote IT User Listing
7. **DESCRIPTION/USE:** To assist NASA in conducting contractor floor checks and to determine if the employees meet the minimum background investigation requirements.
8. **OPR:** AS50            9. **DM:** ED03
10. **DISTRIBUTION:** Per Contracting Officer's letter. One copy each shall go to MSFC's Protective Services Office and Facilities Planning and Business Management Office.
11. **INITIAL SUBMISSION:** No later than 10 working days after Authority to Proceed (ATP)
12. **SUBMISSION FREQUENCY:** Formal update quarterly and email changes as personnel changes occur to distribution. If deemed necessary by the Contracting Officer, the contractor shall submit the list at times other than stated.
13. **REMARKS:** Reference is made to Federal Acquisition Regulation (FAR) Clause, FAR 52.215-2, *Audit and Records--Negotiations* (June 1999), NPR 1600.1, *NASA Security Program Procedural Requirements*.
14. **INTERRELATIONSHIP:** PWS paragraph 1.2.7
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Badged Employee and Remote IT User Listing provides NASA with a list of all MSFC badged contractor employees, as well as, any contractor remote IT users who will have access to the MSFC IT system.
- 15.2 **APPLICABLE DOCUMENTS:** None
- 15.3 **CONTENTS:** The Badged Employee and Remote IT User Listing shall include the following information for each employee: employee's full name (first and middle names must be birth names), last four digits of the Social Security Number (SSN), date of birth, place of birth, duty position, duty location (building/room number), shift assignment, and supervisor's name. Additionally, if applicable, the type of security background check already completed (NACLC or SSBI) and the date it was completed.
- 15.4 **FORMAT:** Contractor format using Excel Spreadsheet is acceptable.
- 15.5 **MAINTENANCE:** None required

## DATA REQUIREMENTS DESCRIPTION (DRD)

- |                         |                                      |
|-------------------------|--------------------------------------|
| 1. <b>DPD NO.:</b> 1163 | 2. <b>DRD NO.:</b> <b>1163MA-006</b> |
| 3. <b>DATA TYPE:</b> 3  | 4. <b>DATE REVISED:</b>              |
|                         | 5. <b>PAGE:</b> 1/1                  |
6. **TITLE:** Contractor Employee Clearance Document
7. **DESCRIPTION/USE:** To ensure that badged contractor employees who no longer require Center access properly clear all accounts when the access is no longer needed.
8. **OPR:** AS50                      9. **DM:** ED03
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** Immediately when the access is no longer needed
12. **SUBMISSION FREQUENCY:** As required
13. **REMARKS:**
14. **INTERRELATIONSHIP:** PWS paragraph 1.1.5
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Contractor Employee Clearance Document provides verification that all badged employees have properly cleared all accounts when the access is no longer needed.
- 15.2 **APPLICABLE DOCUMENTS:** None
- 15.3 **CONTENTS:** The Contractor Employee Clearance Document shall contain all the information required by MSFC Form 383-1.
- 15.4 **FORMAT:** MSFC Form 383-1, "Contractor Employee Clearance Document".
- 15.5 **MAINTENANCE:** None required

## DATA REQUIREMENTS DESCRIPTION (DRD)

- |                         |                                      |
|-------------------------|--------------------------------------|
| 1. <b>DPD NO.:</b> 1163 | 2. <b>DRD NO.:</b> <b>1163MA-007</b> |
| 3. <b>DATA TYPE:</b> 3  | 4. <b>DATE REVISED:</b>              |
|                         | 5. <b>PAGE:</b> 1/1                  |
6. **TITLE:** Position Risk Designation for Non-NASA Employee
7. **DESCRIPTION/USE:** To ensure that contractor employees are screened to an appropriate risk determination in accordance with NPR 1600.1, *NASA Security Program Procedural Requirements*, Chapter 4.
8. **OPR:** AS50                      9. **DM:** ED03
10. **DISTRIBUTION:** Per Contracting Officer's letter. One copy shall go to MSFC Protective Services Office.
11. **INITIAL SUBMISSION:** No later than 10 working days after Authority to Proceed (ATP)
12. **SUBMISSION FREQUENCY:** Update as personnel or position changes occur
13. **REMARKS:**
14. **INTERRELATIONSHIP:** PWS paragraph 1.1.6
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Position Risk Designation for Non-NASA Employee provides information necessary to determine the type of investigation required and how closely an individual is screened for a position.
- 15.2 **APPLICABLE DOCUMENTS:**  
       NPR 1600.1                      *NASA Security Program Procedural Requirements*
- 15.3 **CONTENTS:** The Position Risk Designation for Non-NASA Employee shall contain all the information required by NASA Form 1760 in accordance with NPR 1600.1, *NASA Security Program Procedural Requirements*.
- 15.4 **FORMAT:** NASA Form 1760, "Position Risk Designation for Non-NASA Employee", or as may otherwise be directed by the Contracting Officer.
- 15.5 **MAINTENANCE:** None required

## DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1163                      **ISSUE:** RFP
2. **DRD NO.:** **1163MA-008**
3. **DATA TYPE:** 3
4. **DATE REVISED:**
5. **PAGE:** 1/2
6. **TITLE:** Monthly and Semi-Annually Performance Reports
7. **DESCRIPTION/USE:** To provide visibility to contractor and MSFC technical monitor of actual and potential problems toward meeting established performance measurements in estimating, product delivery dates and quality of products.
8. **OPR:** ED03                      9. **DM:** ED03
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** First calendar month following the end of the first full month after Authority to Proceed (ATP), unless otherwise specified by the Contracting Officer
12. **SUBMISSION FREQUENCY:** Monthly: 10 days following the end of each month. Semi-Annually: 10 days following the end of the reporting period.
13. **REMARKS:**
14. **INTERRELATIONSHIP:** PWS paragraph 2.4
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Monthly and Semi-Annually Performance Reports provides data for the assessment of monthly customer orders and summarizes the performance results of PWS 2.4.
- 15.2 **APPLICABLE DOCUMENTS:** None
- 15.3 **CONTENTS:** The Monthly and Semi-Annually Performance Reports shall include:
  - a. The first monthly report shall contain:
    1. Customer Order Number.
    2. Metric (Fixed Cost, Delivery w/ Fixed Cost, Actuals).
    3. Order Date.
    4. Original Promised Date.
    5. Actual Completion Date.
    6. Duration.
    7. Days Early - Days Late.
    8. Hours Estimated.
    9. Actual Hours.
    10. Hours Deviation.
    11. % Deviation.
    12. Description of Customer Order.
  - b. The second monthly report shall contain:
    1. Identified jobs (by Customer Order) receiving a Non-Conformance.
    2. Number of total jobs completed during the month.
    3. Percentage of Non-conformance versus total jobs for the month (per job and hours).
    4. Identify jobs that receive "Rework".
    5. Identify jobs that receive "Use As Is".

**DRD Continuation Sheet**

TITLE: Monthly Status Reports

DRD NO.: **1163MA-008**

DATA TYPE: 3

PAGE: 2/2

---

15.3 **DATA PREPARATION INFORMATION (CONTINUED):**

6. Identify jobs that receive "Scrap".
  7. Identified Non-Conformance job's original hours to complete.
  8. Number of hours to correct Non-Conformance (even if "Scrapped").
  9. Percentage of correction versus original total hours.
- c. The Semi-Annually Report shall contain a summary of first and second monthly reports.

15.4 **FORMAT:** Microsoft Excel shall be utilized.15.5 **MAINTENANCE:** None required

## DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1163                      **ISSUE:** RFP
2. **DRD NO.:** **1163MA-009**
3. **DATA TYPE:** 2
4. **DATE REVISED:**
5. **PAGE:** 1/2
  
6. **TITLE:** Organizational Conflict of Interest (OCI) Avoidance Plan
  
7. **DESCRIPTION/USE:** To demonstrate to the Government that the Contractor will mitigate organizational conflicts of interest and ensure that the contractor provides unbiased, impartial advice and adequately protects sensitive data.
  
8. **OPR:** PS21                      9. **DM:** ED03
  
10. **DISTRIBUTION:** Per Contracting Officer's letter
  
11. **INITIAL SUBMISSION:** 10 working days following Authority to Proceed (ATP) (including phase-in period)
  
12. **SUBMISSION FREQUENCY:** Update as required
  
13. **REMARKS:** Reference is made to Contract Clauses H.2, *Limitation of Future Contracting (NFS 1852.209-71, H.3, Organizational Conflicts of Interest, I.7, Access to Sensitive Information (NFS 1852.237-72), and I.8, Release of Sensitive Information (NFS 1852.237-73).*
  
14. **INTERRELATIONSHIP:** PWS paragraph 1.1
  
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Organizational Conflicts of Interest Avoidance Plan demonstrates that no organizational conflict of interest exists or that any such potential conflicts have been adequately avoided or mitigated with any prime contractor or subcontractor performing or planning to propose on design, development, and/or delivery of space flight hardware, software, mission integration services or other critical systems related to MSFC. The Contractor should not assume that government performance of a contracted task is a form of mitigation.
  
- 15.2 **APPLICABLE DOCUMENTS:** None
  
- 15.3 **CONTENTS:** The Organizational Conflict of Interest Avoidance Plan shall include the following:
  - a. Organizational conflicts of interest pertaining to impaired objectivity shall be addressed as follows:
    1. Describe the nature of the conflict including any business relationships that might create a conflict with the performance of the work statement
    2. Describe the plan for avoiding, neutralizing, or mitigating the conflict, including the following with regard to subject matter experts/technical experts if applicable:
      - (a) That the management reporting chains between this contract and the work performed by the subject matter experts/technical experts for the conflicting business relationship are separated from each other.
      - (b) That the subject matter experts/technical experts when performing under this contract are physically separated from the portion of the company performing the work for the conflicting business relationships.

## DRD Continuation Sheet

**TITLE:** Organizational Conflict of Interest (OCI) Avoidance Plan **DRD NO.:** 1163MA-009

**DATA TYPE:** 2

**PAGE:** 2/2

15. **DATA PREPARATION INFORMATION (CONTINUED):**

- (c) That each subject matter expert/technical expert performing under this contract signs an express, binding, written agreement setting forth all responsibilities and duties to avoid organizational conflicts of interest and to protect sensitive data provided under this order.
- (d) That techniques are in place to ensure that the contractor shall not favor the conflicting business relationships and will avoid the appearance of conflicts of interest.
- b. With regard to access to nonpublic information, the avoidance plan shall contain a plan to safeguard all proprietary/sensitive data the contractor (including all employees and subject matter experts/technical experts) receives. This plan shall include:
  - 1. A provision that the contractor shall not disclose or improperly use the proprietary/sensitive data received or accessed under this contract.
  - 2. A provision that information, whether in hard copy or on electronic media, shall be marked, handled, stored, and destroyed in order to preclude an unauthorized disclosure of information.
  - 3. A provision that information technology shall be protected to prevent unauthorized disclosure of information.
  - 4. A provision that employees performing the effort must sign an express binding written agreement clearly agreeing to protect sensitive data.
  - 5. A requirement that subcontractors have appropriate OCI avoidance procedures in place for the use of subject matter experts.
  - 6. A requirement for periodic self-audits, the results of which shall be made available to the Government.
  - 7. Initial and periodic refresher OCI training for the contractor employees/experts working on this contract.
  - 8. A description of organizational and employee sanctions for violation of the OCI order clause or OCI Avoidance Plan provisions.
  - 9. Provisions on record keeping requirements regarding OCI (e.g., training, written agreements). The contractor shall make these records available to and cooperate with any neutral third party the Government assigns to review adherence to their OCI mitigation plan.
  - 10. A provision requiring the contractor to report any real, apparent, or potential conflict of interest that may arise to the Contracting Officer.
  - 11. A provision requiring the contractor to update the OCI Avoidance Plan upon occurrence of any event that will cause a change to the plan.

15.4 **FORMAT:** Contractor format is acceptable.

15.5 **MAINTENANCE:** Changes shall be incorporated by change page or complete reissue.

## DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1163            **ISSUE:** RFP
2. **DRD NO.:** **1163QE-001**
3. **DATA TYPE:** 1
4. **DATE REVISED:**
5. **PAGE:** 1/2
6. **TITLE:** Quality Management System Plan
7. **DESCRIPTION/USE:** To define the contractor's planned methods for accomplishing the applicable tasks required to satisfy the quality requirements of NPD 8730.5 for the specific products and engineering technical support being procured.
8. **OPR:** QD40            9. **DM:** ED03
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** Four (4) months after Authority to Proceed (ATP)
12. **SUBMISSION FREQUENCY:** Revise as required to address new or changed Task Orders with submission as agreed upon through the COTR.
13. **REMARKS:** A copy of the current Quality System Manual will be provided to the Contractor upon contract award
14. **INTERRELATIONSHIP:** PWS paragraph 1.1.7
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Quality Management System Plan shall identify, as applicable, the specific quality management system activities related to the procurement of materials/subcomponents, fabrication, assembly, and engineering technical support and services to assure the quality of the products delivered. The plan(s) will reference the contractor's quality manual and procedures as necessary to fully describe the contractor's quality system. Quality planning can be prepared as a single plan or a top level plan with separate task level planning, or any combination thereof. Updates to planning shall be addressed for any additional tasks added to the contract or for any changes if required.
- 15.2 **APPLICABLE DOCUMENTS:**

NPD 8730.5	<i>NASA Quality Assurance Program Policy</i>
NPR 8735.2	<i>Management of Government Safety and Mission Assurance Surveillance Functions for NASA Contracts</i>
SAE AS9100	<i>Quality Management Systems - Aerospace - Requirements</i>
- 15.3 **CONTENTS:** Each quality element of SAE AS9100 (excluding Section 7.3 "Design and Development") shall be addressed to describe the philosophy and approach for implementation of the quality management system. This can be satisfied by contractor's existing quality manual and procedures. The only exceptions allowed will be processes noted in Section 7 of SAE AS9100 and as specified in the contract Performance Work Statement (PWS) and/or in each task agreement. A copy of the Quality System Manual and 1<sup>st</sup> tier procedures shall be submitted with any required quality plan. As a minimum, the subparagraphs below shall be addressed by the quality plan to include details of responsibilities and controls to adequately describe the specific quality assurance and personnel resource activities related to hardware and technical support being procured by MSFC:
  - a. NASA MSFC Performance Work Statement (PWS) Activities – describe how hardware specific quality requirements imposed by contract or component/equipment specification will be assured (i.e., traceability requirements, specific inspection points, specific quality activities).

## DRD Continuation Sheet

TITLE: Quality Management System Plan

DRD NO.: **1163QE-001**

DATA TYPE: 1

PAGE: 2/2

15. **DATA PREPARATION INFORMATION (CONTINUED):**

- b. Responsibilities - describe which contractor organizations will be responsible to perform the applicable quality management system activities which need to include how the Contractor will support the MSFC requirements specified in the Contract Surveillance Plan (Reference NPR 8735.2).
- c. Article, Material, and Service Controls - describe the level of article, material, and service control including traceability requirements invoked by the contractor for the articles, materials, and/or services used in or performed as part of the hardware design and maintenance criteria, including how quality is assured for each material, part, assembly, and/or service performed.
- d. Procurement - include the procurement quality requirements for all materials/parts/ components the contractor purchases. Define the level of control exercised over the suppliers including how suppliers are monitored, and maintained with controls for supplier nonconformances processing in reference to the requirements in section 4.2 of the PWS.
- e. Milestone Reviews - describe how the contractor's quality system will support milestone reviews as requested by MSFC.
- f. Configuration Assurance - describe how the configuration of the hardware build is compared and verified to the approved design baseline drawings and specifications as requested by NASA. Describe how the configuration of Government Furnished Property/Equipment is maintained.
- g. Special Process Controls - describe special process controls implemented for in-house processes and, if applicable, for sub-tier supplier processes. Controls will include required training, certification, and maintenance of competency for technical personnel.
- h. Inspection and Test (describe who will be responsible to perform inspections to include any limitations) - include: how the quality of purchased items is validated at receiving inspection or at sub-tier suppliers facilities, specific in-process (manufacturing) inspections performed, details of final inspection and pre-ship inspections.
- i. Nonconformance Processing - describe how nonconformance will be documented and dispositioned as specified in the PWS, section 4.2.
- j. Record retention - for those records not delivered to MSFC, specify which records are required to be kept, who keeps them, for how long, and how they are to be dispositioned at the end of the retention period, and/or as specified in the contract.
- k. Personnel training and competency processes will need to be specified for all personnel who affect products and technical support delivered on this contract. Resources for training to the requirements of this contract, specified by special processes, will be provided by MSFC. Contractor training management communication with MSFC will need to be specified to assure adequate resources to maintain special process personnel competency.

15.4 **FORMAT:** Contractor format is acceptable.

15.5 **MAINTENANCE:** Changes shall be incorporated by change page or complete reissue.

## DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1163                      **ISSUE:** RFP
2. **DRD NO.:** **1163SA-001**
3. **DATA TYPE:** 2
4. **DATE REVISED:**
5. **PAGE:** 1/4
6. **TITLE:** Safety, Health, and Environmental (SHE) Plan
7. **DESCRIPTION/USE:** To provide the contractor and the Government a baseline document to (1) prevent employee fatalities, (2) reduce the number of incidents, (3) reduce the severity of employee injuries and illnesses, and (4) protect the environment through the ongoing planning, implementation, integration and management control of the contractor's industrial safety, occupational health, and environmental program by compliance with the Marshall Space Flight Center (MSFC) SHE core program requirements in accordance with NFS 1852.223-73.
8. **OPR:** AS10/QD50                      9. **DM:** ED03
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** Detailed Draft with proposal
12. **SUBMISSION FREQUENCY:** Ten days after Authority to Proceed (ATP); update as required
13. **REMARKS:**
14. **INTERRELATIONSHIP:** NFS 1852.223-70, *Safety and Health*; NFS 1852.223-73, *Safety and Health Plan*; FAR 52.223-3, *Hazardous Material Identification and Material Safety Data*; FAR 52.223-4, *Recovered Material Certification*; FAR 52.223-5, *Pollution Prevention and Right-to-Know Information*; FAR 52.223-7, *Notice of Radioactive Materials*; FAR 52.223-9, *Estimate of Percentage of Recovered Material Content for EPA-Designated Products*; FAR 52.223-10, *Waste Reduction Program*; FAR 52.223-11, *Ozone Depleting Substances*; FAR 52.223-12, *Refrigeration Equipment and Air Conditioners*; FAR 52.223-13, *Certification of Toxic Chemical Release Reporting*; and FAR 52.223-14, *Toxic Chemical Release Reporting*. DRD 1163SA-002, *Mishap and Safety Statistics Report*. PWS paragraph 1.3
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Safety, Health, and Environmental Plan shall describe the contractor's methods of planning, implementing and controlling their industrial safety, occupational health, and environmental requirements over the duration of the contract.
- 15.2 **APPLICABLE DOCUMENTS:** Compliance with the following Occupational Safety and Health Standards and applicable requirements shall be specified in the plan (if applicable to the scope of this contract).
 

29 CFR 1910	<i>Department of Labor; Occupational Safety and Health Administration Standards for General Industry</i>
29 CFR 1926	<i>Department of Labor; Occupational Safety and Health Administration Standards for Construction Industry</i>
40 CFR	<i>Protection of the Environment</i>
ANSI Standards applicable to the scope of this contract	
<i>ASME Boiler and Pressure Vessel Code</i> applicable to the scope of this contract	
NFPA Standards <i>National Fire Codes</i>	
NASA-STD-8719.11	<i>Safety Standard for Fire Protection</i>
NPR 8715.3	<i>NASA General Safety Program Requirements</i>
MPR 1040.3	<i>MSFC Emergency Plan</i>

**DRD Continuation Sheet**

TITLE: Safety, Health, and Environmental (SHE) Plan

DRD NO.: **1163SA-001**

DATA TYPE: 2

PAGE: 2/4

15. **DATA PREPARATION INFORMATION (CONTINUED):**

MPD 1800.1	<i>MSFC Smoking Policy</i>
MPR 1800.1	<i>Bloodborne Pathogens</i>
MPR 1810.1	<i>MSFC Occupational Medicine</i>
MPD 1840.1	<i>MSFC Environmental Health Program</i>
MPR 1840.1	<i>MSFC Confined Space Entries</i>
MPD 1840.2	<i>MSFC Hearing Conservation Program</i>
MPR 1840.2	<i>MSFC Hazard Communication Program</i>
MPD 1840.3	<i>MSFC Respiratory Protection Program</i>
MPR 1840.3	<i>MSFC Hazardous Chemicals in Laboratories Protection Program</i>
MPD 1860.1	<i>Laser Safety</i>
MPD 1860.2	<i>MSFC Radiation Safety Program</i>
MPR 3410.1	<i>Training</i>
MWI 3410.1	<i>Personnel Certification Program</i>
MPD 8500.1	<i>MSFC Environmental Management Policy</i>
MPR 8500.1	<i>MSFC Environmental Management Program</i>
MPR 8500.2	<i>MSFC Environmental Management System Manual</i>
MWI 8540.2	<i>Affirmative Procurement Program for Environmentally Preferable Products</i>
MWI 8550.1	<i>Waste Management</i>
MWI 8550.2	<i>Storm Water Management</i>
MWI 8550.3	<i>Wastewater Compliance</i>
MWI 8550.4	<i>Air Emissions Compliance</i>
MWI 8550.5	<i>Chemical Management</i>
MWI 8621.1	<i>Close Call and Mishap Reporting and Investigation Program</i>
MPR 8715.1	<i>Marshall Safety, Health and Environmental (SHE) Program</i>
MWI 8715.1	<i>Electrical Safety</i>
MWI 8715.2	<i>Lockout/Tagout Program</i>
MWI 8715.3	<i>Hazard Identification &amp; Warning System</i>
MWI 8715.4	<i>Personal Protective Equipment (PPE)</i>
MWI 8715.5	<i>Building Manager Program</i>
MWI 8715.9	<i>Occupational Safety Guidelines for Contractors</i>
MWI 8715.10	<i>Explosives, Propellants, &amp; Pyrotechnics Program</i>
MWI 8715.11	<i>Fire Safety Program</i>
MWI 8715.12	<i>Safety, Health, and Environmental Finding Tracking System (SHEtrak)</i>
MWI 8715.13	<i>Safety Concerns Reporting System (SCRS)</i>
MWI 8715.15	<i>Ground Operations Safety Assessment &amp; Risk Mitigation Program</i>
MPD 8900.1	<i>Medical Operations Responsibilities for Human Space Flight Programs (NOTE: This document only applies to Space Station contracts)</i>

- 15.3 **CONTENTS:** The Safety, Health, and Environmental (SHE) Plan shall clearly describe how the contractor shall comply with the MSFC SHE core program requirements listed below to accomplish the following: (1) the methods to ensure compliance with the MSFC SHE core program requirements listed below, (2) the methods to ensure potentially hazardous conditions are identified and corrected, (3) the methods to ensure employees are trained to perform their tasks in a safe and healthful manner, and (4) the methods to ensure compliance with the applicable documents that pertain to the specific work tasks.

## DRD Continuation Sheet

**TITLE:** Safety, Health, and Environmental (SHE) Plan

**DRD NO.:** 1163SA-001

**DATA TYPE:** 2

**PAGE:** 3/4

15. **DATA PREPARATION INFORMATION (CONTINUED):**

- a. Management leadership and employee involvement:
  1. A statement of the management policy and their commitment to (1) provide a safe and healthful workplace for personnel (i.e., employees, customers, and public), (2) protect the property and the environment, and (3) ensure compliance with EPA, OSHA and NASA requirements applicable to the contracted effort.
  2. A description of how management and employees are held accountable for implementing their tasks in a safe and healthful manner while protecting the environment through the use of motivational or innovative techniques and when necessary through the use of a disciplinary program.
  3. A description of safety, health, environmental awareness and motivation programs that, include documented safety meetings and safety awareness training for employees. (Onsite contractors shall document their safety meeting statistics in the MSFC Supervisors Safety Web page (SSWP).
  4. A method of performing and documenting self evaluations of the contractor's safety, health and environmental program including the frequency of these evaluations.
  5. A method of ensuring the flowdown of MSFC safety, health, and environmental responsibilities and requirements applicable to the contracted effort are passed between all company levels and to all subcontractors, when applicable.
  6. The identification by title the individual who is assigned the responsibility for implementing the contractor's SHE program elements and serve as the SHE Point of Contact (POC) for the contracted effort.
  7. A method to ensure compliance with MPR 8715.1 and all other SHE documents that are applicable to the contracted effort.
  8. A method to ensure that each employee has read the SHE plan and fully understands their roles and responsibilities in supporting the MSFC SHE program.
  9. A method to ensure the SHE plan is reviewed annually and updated as necessary.
- b. System and worksite analysis:
  1. The methods of identifying potentially hazardous conditions in the work area and operations, e.g., hazard analysis, safety assessment, change analysis, risk assessment and employee identified concerns.
  2. A description of the OSHA programs that require documented programs that are applicable to the contracted effort (e.g., Respiratory Protection, Hazard Communication, Confined Space, and Lockout/Tagout, etc. Address their interrelationships with the applicable MSFC SHE programs.)
  3. The methods of conducting and documenting supervisors' monthly safety visits. Onsite safety visits shall be performed once per month per supervisor and documented in the Supervisors Safety Web page.
- c. Hazard prevention and control:
  1. The methods of controlling potentially hazardous conditions in the work area or in operations. This includes the generation of plans, procedures, and other working documents which clearly identify the hazardous situations in the work area or operation and the necessary cautions taken to mitigate the hazards. NOTE: MSFC requires an annual review of these plans and procedures. MSFC Safety Department concurrence is required for onsite hazardous procedures.
  2. The methods of ensuring controls over the procurement, storage, issuance, and use of hazardous chemical and materials are in accordance with MPR 8500.1 and the recycling and disposal of any hazardous waste is in accordance with MWI 8550.1.

## DRD Continuation Sheet

**TITLE:** Safety, Health, and Environmental (SHE) Plan

**DRD NO.:** 1163SA-001

**DATA TYPE:** 2

**PAGE:** 4/4

15. **DATA PREPARATION INFORMATION (CONTINUED):**

3. The methods of ensuring a documented emergency management program. Include a list of contractor emergency points that are located onsite. (Note: Onsite contractors may use MPR 1040.3.)
  4. The methods of ensuring the investigation of all mishaps and close calls to determine root cause and the reporting requirements are in accordance with MWI 8621.1. (Reference DRD 1163SA-002, *Mishap and Safety Statistics Report*).
  5. The method for providing safety, health, and environmental services applicable to the contracted effort such as hazardous waste disposal, industrial hygiene monitoring, emergency medical support, hearing conservation program, respiratory protection, and hazard communication. (Note in the SHE plan which, if any of these services are to be provided by MSFC for onsite work.)
  6. The methods employees have to suspend work where safety, health or environmental conditions warrant such action.
- d. Safety, health and environmental training:
1. The methods for ensuring each employee is trained to recognize hazards, avoid accidents, know the hazards specific to their job, and fully understands the contractor's disciplinary program.
  2. The methods for assessing employee training needs specific to their job. (Onsite employee assessments shall be performed using the SHE Training Assessment located on the MSFC Supervisor Safety Web Page.)
  3. The methods for training and documenting this training when designating employees to be competent, qualified, authorized or certified to perform operations that require specific training in accordance with 29 CFR 1910 or 29 CFR 1926.
  4. A list of identified job categories under the contracted effort that require MSFC safety certification in accordance with MWI 3410.1, "Personnel Certification Program". Example job categories that require MSFC safety certification include, but not limited to, operating MSFC lifting equipment (forklifts, cranes, etc.), working with chemicals, hazardous waste, pressure systems, etc. Personnel Certification for onsite job categories identified in MWI 3410.1 shall be tracked in the MSFC Certification Database (CERTRAK). (NOTE: offsite contracts shall list the job categories under the contracted effort that require OSHA documented training and certification.)
- e. Environmental compliance - The methods to ensure compliance with environmental laws and regulations 40 CFR, Alabama Department of Environmental Management (ADEM), and MPR 8500.1 by:
1. Reporting hazardous and toxic substance use.
  2. Implementing and reporting green procurements in accordance with MWI 8540.2.
  3. Reducing, reusing, and recycling of hazardous and toxic substances prior to disposal in accordance with MWI 8550.1.
  4. Minimizing stormwater pollution in accordance with MWI 8550.2.
  5. Ensuring equipment and processes permitted by applicable laws.
  6. Disposing of solid and liquid materials as permitted by applicable laws.

15.4 **FORMAT:** Contractor format is acceptable.

15.5 **MAINTENANCE:** Changes shall be incorporated by change page or complete reissue.

## DATA REQUIREMENTS DESCRIPTION (DRD)

- |                         |                   |                                      |
|-------------------------|-------------------|--------------------------------------|
| 1. <b>DPD NO.:</b> 1163 | <b>ISSUE:</b> RFP | 2. <b>DRD NO.:</b> <b>1163SA-002</b> |
| 3. <b>DATA TYPE:</b> 1  |                   | 4. <b>DATE REVISED:</b>              |
|                         |                   | 5. <b>PAGE:</b> 1/2                  |
6. **TITLE:** Personnel Certification Plan
7. **DESCRIPTION/USE:** To provide the contractor and the Government a baseline document for the identification and definition of personnel certification criteria and the procedures to be implemented by the contractor to ensure a certification program is implemented.
8. **OPR:** QD40                      9. **DM:** ED03
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** 30 days after Authority to Proceed (ATP)
12. **SUBMISSION FREQUENCY:** Revise as required
13. **REMARKS:** Where the contractor is operating under its own quality management system and processes, manufacturing special/critical process personnel qualification/certification controls are not included in this plan, they will be documented as specified in PWS paragraph 1.1.7, DRD 1163QE-001, and contract attachment J-20, NASA MSFC Safety & Mission Assurance Surveillance Plan.
14. **INTERRELATIONSHIP:** PWS paragraphs 1.1.2 and 1.1.3
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** It is mandatory that test facility operations activities be performed by certified personnel. The Personnel Certification Plan provides for training, certification, and re-certification of personnel engaged in the performance of MSFC critical processes. The purpose of a certification program is to assure that all personnel are capable of performing these MSFC critical processes and work assignments without endangering themselves, fellow employees, equipment and/or facilities. It is mandatory that these MSFC critical processes are performed by experienced and certified personnel.
- 15.2 **APPLICABLE DOCUMENTS:**
- |            |  |
|------------|--|
| MWI 3410.1 | <i>Personnel Certification Program</i> |
| NPR 8715.3 | <i>NASA Safety Manual</i>              |
- 15.3 **CONTENTS:** The Personnel Certification Plan shall provide insight to the contractor's certification program. The plan shall include criteria which the contractor can relate directly to work classifications and the required skills, education, experience, training, and other qualifications necessary to perform work in these classifications. The contractor shall assure work performed by these classifications is performed with high quality workmanship to produce a high quality produce in a safe and efficient manner. The plan shall include the contractor methods to track these certifications. The contractor can elect to track their certifications for critical MSFC owned process in MSFC CERTRAK database in accordance with MWI 3410.1. The plan shall fulfill the requirements of the applicable documents listed in 15.2 and include the following:
- a. Certification program:
1. General:
    - (a) Program description.
    - (b) Program administration.
    - (c) Certification duration.
    - (d) Definitions.
    - (e) Job description summaries.
    - (f) Task assignments per job description.
    - (g) Skills required per job description.

## DRD Continuation Sheet

**TITLE:** Personnel Certification Plan

**DRD NO.:** 1163SA-002

**DATA TYPE:** 1

**PAGE:** 2/2

15. **DATA PREPARATION INFORMATION (CONTINUED):**

2. Certification requirements/skills
  - (a) Education.
  - (b) Experience/work history.
  - (c) Specialized training.
  - (d) Physical condition/attitude.
3. Certification process:
  - (a) Supervision responsibilities.
  - (b) Certifying authority.
  - (c) Formal/informal examination.
  - (d) Proficiency demonstration.
- b. Certification documentation.

Specific critical MSFC owned process skills requiring certification and proficiency include the following:

- a. High pressure tubing fabrication and assembly.
- b. Welding:
  1. Carbon steel.
  2. Stainless steel.
  3. Aluminum.
- c. Control system operations.
- d. Schematic drawing comprehension
- e. Other processes identified by the Statement of Work (SOW)

The following certifications, if required, are obtained in accordance with MWI 3410.1

- a. Forklift, crane and hoist operators.
- b. Cryogenic and other hazardous pressure system operators.
- c. Propellant & Explosive Handlers
- c. Hazardous chemical/toxic material handling.
- d. Confined space entry.
- e. Electrical/instrumentation cable fabrication (including test articles):
  1. Crimping.
  2. Cabling, Harnessing, and Wiring.
  3. Soldering including Surface Mount Technology (SMT).
  4. Staking and Conformal Coating
  5. ESD Control
- f. Welding inspection and nondestructive evaluation (NDE).
  1. Penetrant Testing
  2. Magnetic Particle Testing
  3. Eddy Current Testing
  4. Radiographic Testing
  5. Thermal/Infrared Testing
  6. Visual Testing

15.4 **FORMAT:** Contractor format is acceptable.

15.5 **MAINTENANCE:** Changes shall be incorporated by change page or complete reissue.

## DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1163                      **ISSUE:** RFP
2. **DRD NO.:** **1163SA-003**
3. **DATA TYPE:** 3
4. **DATE REVISED:**
5. **PAGE:** 1/3
6. **TITLE:** Mishap and Safety Statistics Reports
7. **DESCRIPTION/USE:** To provide reporting of metrics, mishaps, close calls, and serious non-occupational injuries or illnesses.
8. **OPR:** QD50                      9. **DM:** ED03
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:**
  - a. Safety Statistics submitted by the 10<sup>th</sup> of each month after contract award using one of the following methods: MSFC Form 4371, or electronic notification system equivalent, or direct to NASA Incident Reporting Information System (IRIS) database. Statistics required to be submitted include: contract number, subcontractors, NAISC codes, number of employees, and number of supervisors, hours worked. Access to IRIS database can be obtained from the Industrial Safety Department after contract award. (Applicable to all onsite contracts)
  - b. Mishaps, Close Calls, and serious non-occupational injuries or illnesses as defined in Section 15.6 and in NPR 8621.1:
    1. Type A, B, mishaps, high visibility mishaps or close calls: Upon occurrence or awareness of mishap:
      - a. Immediate notification to the Contracting Officer and Industrial Safety (256-544-HELP, Safety Option) (Include location and time of incident, number of fatalities, number hospitalized, type of damage, estimated cost, brief description, and contact person's name and phone number), accompanied by IRIS Quick Incident submittal.
      - b. Update within 24 hours through IRIS entry, or electronic submittal (per NPR 8621.1, paragraph 1.5.5).
    2. Non-occupational fatality or serious injury occurring onsite or to an onsite contractor employee: Notification to Contracting Officer and Industrial Safety within 24 hour of occurrence or awareness. (Offsite non-occupational injury or illness notification is at the discretion of the family.)
    3. Type C mishaps: Upon occurrence or awareness of mishap:
      - a. Immediate notification to the Contracting Officer and Industrial Safety (256-544-HELP, Safety Option) (Include location and time of incident, type of lost-time injury or damage, estimated cost, brief description, and contact person's name and phone number), accompanied by IRIS Quick Incident submittal.
      - b. Update within 6 days through IRIS entry, or electronic submittal.
    4. Type D, and Close Call mishaps (Onsite): Notification by telephone (256-544-HELP, Safety Option) or electronic submittal within 4 hours of occurrence or awareness, and within 24 hours with IRIS Quick Incident. Update within 6 days may be through IRIS entry, or electronic submittal.
    5. Type A, B, and Close Calls with high Type A or B potential: Mishap Board Report submitted after completion of investigation. Corrective Action Plan submitted upon Endorsing Official approval.
    6. All Mishaps: Follow-up Corrective Action Plan/Status 30 days after first mishap.
  - c. Safety Concerns, Hazards, and non-reportable mishaps should be reported per MPR 8715.1 (**Onsite**) or the appropriate contractor method (**Offsite**).

## DRD Continuation Sheet

**TITLE:** Mishap and Safety Statistics Reports

**DRD NO.:** 1163SA-003

**DATA TYPE:** 3

**PAGE:** 2/3

12. **SUBMISSION FREQUENCY:** *Safety Statistics (MSFC Form 4371, IRIS entry, or equivalent)* - By the 10<sup>th</sup> of each month. All Mishaps: Monthly Follow-up Corrective Action Plan/Status until corrective actions implemented and closure received by updating record in IRIS data base (preferred) or electronic submittal.
13. **REMARKS:**
14. **INTERRELATIONSHIP:** DRD 1163SA-001, *Safety, Health, and Environmental (SHE) Plan*. PWS paragraph 1.3
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Mishap and Safety Statistics Reports document all mishaps and close calls as required in NPR 8621.1.
- 15.2 **APPLICABLE DOCUMENTS:**
- |            |   |
|------------|---|
| NPR 8621.1 | <i>NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping</i> |
| MPR 8715.1 | <i>MSFC Safety, Health, and Environmental (SHE) Program</i>   |
| MWI 8621.1 | <i>Close Call and Mishap Reporting and Investigation Program</i>  |
- 15.3 **CONTENTS:** The Mishap and Safety Statistics Reports shall contain the information required by NPR 8621.1 and MWI 8621.1.
- 15.4 **FORMAT:** The following formats or electronic equivalent shall be submitted:
- a. MSFC Form 4370, "MSFC Flash Mishap Report."
  - b. Additional Information Submittal per NPR 8621.1.
  - c. MSFC Form 4371, "MSFC Contractor Accident and Safety Statistics."
  - d. Mishap Board Report using the format provided in NPR 8621.1.
- 15.5 **MAINTENANCE:** None required
- 15.6 **DEFINITIONS:**
- Close Call. An event in which there is no injury or only minor injury requiring first aid and/or no equipment/property damage or minor equipment/property damage (less than \$1000), but which possesses a potential to cause a mishap.
- High Visibility (Mishaps or Close Calls). Those particular mishaps or close calls, regardless of the amount of property damage or personnel injury, that the Administrator, Chief/OSMA, CD, AA/OIA, or the Center SMA director judges to possess a high degree of programmatic impact or public, media, or political interest including, but not limited to, mishaps and close calls that impact flight hardware, flight software, or completion of critical mission milestones.
- Type A Mishap. A mishap resulting in one or more of the following: (1) an occupational injury or illness resulting in a fatality, a permanent total disability, or the hospitalization for inpatient care of 3 or more people within 30 workdays of the mishap; (2) a total direct cost of mission failure and property damage of \$1 million or more; (3) a crewed aircraft hull loss; (4) an occurrence of an unexpected aircraft departure from controlled flight (except high performance jet/test aircraft such as F-15, F-16, F/A-18, T-38, OV-10, and T-34, when engaged in flight test activities).

**DRD Continuation Sheet**

TITLE: Mishap and Safety Statistics Reports

DRD NO.: **1163SA-003**

DATA TYPE: 3

PAGE: 3/3

---

15. **DATA PREPARATION INFORMATION (CONTINUED):**

Type B Mishap. A mishap that caused an occupational injury or illness that resulted in a permanent partial disability, the hospitalization for inpatient care of 1-2 people within 30 workdays of the mishap, or a total direct cost of mission failure and property damage of at least \$250,000 but less than \$1,000,000.

Type C Mishap. A mishap resulting in a nonfatal occupational injury or illness that caused any days away from work, restricted duty, or transfer to another job beyond the day or shift on which it occurred, or a total direct cost of mission failure and property damage of at least \$25,000 but less than \$250,000.

Type D Mishap. A mishap that caused any nonfatal OSHA recordable occupational injury and/or illness that does not meet the definition of a Type C mishap, or a total direct cost of mission failure and property damage of at least \$1,000 but less than \$25,000.

**ATTACHMENT J-3**

**WBS Breakdown for Engineering Technicians and Trades Support (METTS)  
Services Contract**

**1.0 Management**

- 1.1 Contract Management
  - 1.1.1 Task Management
  - 1.1.2 Contractor Employee Center-wide Training and Certifications
  - 1.1.3 Contractor Employee Specialized Training and Unique Certifications
  - 1.1.4 Monthly Status Reports
  - 1.1.5 Contractor Employee Clearance Document
  - 1.1.6 Position Risk Designation for Non-NASA Employee
  - 1.1.7 Quality Systems Management
- 1.2 Planning and Control
  - 1.2.1 Work Management
  - 1.2.2 Property Management
  - 1.2.3 Technology Reports
  - 1.2.4 Security and Information Technology
  - 1.2.5 Contractor Employee Travel
  - 1.2.6 Contractor Employee Overtime
  - 1.2.7 Badged Employee and Remote IT User Listing
  - 1.2.8 Commercial Work
  - 1.2.9 Contractor Procurements
    - 1.2.9.1 Operations
    - 1.2.9.2 Direct
- 1.3 Safety, Health and Environmental
- 1.4 Financial Reporting

**2.0 Mission Services Technicians and Trades Support**

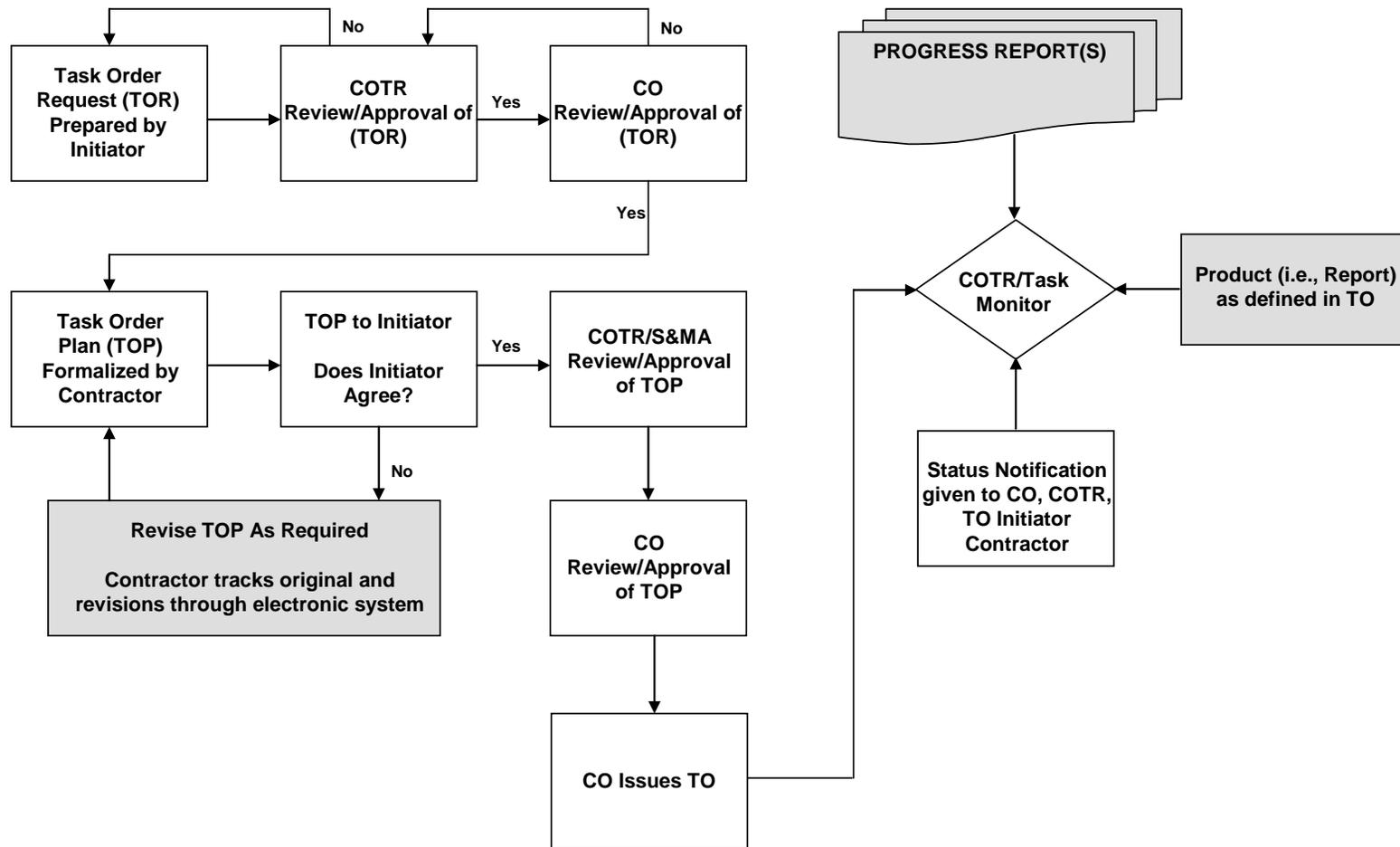
- 2.1 Materials Testing
  - 2.1.1 Promoted Ignition-Combustion Testing
  - 2.1.2 Flammability Testing
  - 2.1.3 Liquid and Gaseous Oxygen Mechanical Impact Testing
  - 2.1.4 Advanced Materials Ignition/Combustion Testing
  - 2.1.5 Thermal Vacuum Stability (Outgassing) Testing
  - 2.1.6 Toxic Offgassing (Toxicity) Testing
  - 2.1.7 Test Sample Verification and Preparation
  - 2.1.8 Engineering Analysis of Materials Testing, Data, and Results
  - 2.1.9 Test Innovations
  - 2.1.10 Oxygen Compatibility Assessments
  - 2.1.11 Development of Internal, Scientific and Data Documentation and Publications
  - 2.1.12 Materials Research and Special Studies
- 2.2 ETF/EFDTF Test Support
  - 2.2.1 Planning and Control
  - 2.2.2 Maintenance and Repair
  - 2.2.3 Test Coordination and Scheduling
  - 2.2.4 ETF Chamber Operations and Support
  - 2.2.5 EFDTF Facilities Operations and Support

- 2.3 Structural Test Support
    - 2.3.1 Structural Test Facility Planning and Control
    - 2.3.2 Structural test Facility Support
    - 2.3.3 Master Schedule
  - 2.4 Fabrication and Assembly of R&D Space Flight and Associated Hardware
    - 2.4.1 Precision and General Assembly
    - 2.4.2 Machining
    - 2.4.3 Sheet Metal
    - 2.4.4 Surface Treatment
    - 2.4.5 Welding and Heat Treatment
    - 2.4.6 Fabric Shop
    - 2.4.7 Maintenance
    - 2.4.8 Calibration
    - 2.4.9 Chemical Analysis
    - 2.4.10 Quality Control
    - 2.4.11 Planning and Control
  - 2.5 Electrical Fabrication, Test, and Assembly
    - 2.5.1 Fabrication
    - 2.5.2 Testing
    - 2.5.3 Assembly
    - 2.5.4 Calibrating
    - 2.5.5 Quality Control
  - 2.6 Reserved
  - 2.7 Space Environmental Effects Testing
    - 2.7.1 Contamination Control Support
    - 2.7.2 Space Environmental Effects Testing
    - 2.7.3 Electrostatic Levitator (ESL) Systems Operations
    - 2.7.4 Development of Internal, Scientific and Data Documentation and Publications
  - 2.8 Soil Moisture Testing
  - 2.9 Environmental Gas Laboratory Support
  - 2.10 Computer Aided Design Drawing
  - 2.11 Data Analysis and Database Entry for Material and Processes Technical Information System (MAPTIS)
  - 2.12 Optics Support
  - 2.13 Tool Crib Operations
- 3.0 IDIQ Support**
- 3.1 Materials Testing
  - 3.2 ETF/EFDTF Test Support
  - 3.3 Structural Test Support
  - 3.4 Fabrication and Assembly of R&D Space Flight and Associated Hardware
  - 3.5 Electrical Fabrication, Test, and Assembly
  - 3.6 Calibration
  - 3.7 Space Environmental Effects Testing
  - 3.8 Soil Moisture Testing
  - 3.9 Environmental Gas Laboratory Support
  - 3.10 Computer-Aided Design Drawing

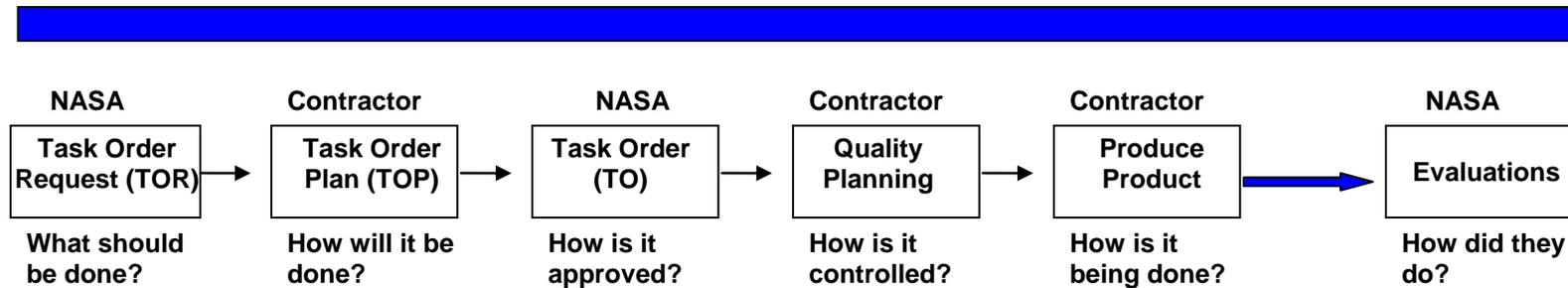
**Final RFP NNM08125357R**

- 3.11 Data Analysis and Database Entry for Material and Processes Technical Information System (MAPTIS)
- 3.12 Optics Support
- 3.13 Tool Crib Operations
- 3.14 Engineering Technician Support
- 3.15 Trade Service Support
- 3.16 Valve and Component Servicing
- 3.17 Space Systems Integrated Test Facility Support
- 3.18 Propulsion Test Support
- 3.19 Support Functions
  - 3.19.1 Chemical Analysis
  - 3.19.2 Quality Systems Management
  - 3.19.3 Planning and Control
  - 3.19.4 Contamination Control
  - 3.19.5 Engineering
  - 3.19.6 Other Support Functions

# IDIQ Process



# Task Flow Description



- Specific Task Description
- Technical Requirements
- Milestones
- Deliverables
- Evaluation Technical Management Cost

- Technical Skills
- Tools Required
- Schedule
- Cost WYEs Material ODC
- Risk Assessment

- COTR determines TOR is within PWS scope
- TOP is developed
- Initiator agrees/disagrees w/TOP
- COTR approves/disapproves TOP
- CO approves/disapproves TOP

- Quality System Management

- Testing
- Analysis
- Fabricating
- Progress Reports Technical Schedule Cost Actual vs Plan

- Award Fee Technical Management Cost
- Evaluations as scheduled
- Evaluations per Surveillance and Evaluation Plans
- Evaluations using Performance Evaluation Board (PEB)
- Contractor provides self-evaluation to PEB

**ATTACHMENT J-5**

**Description of Labor Categories**

**Service Contract Act Position Descriptions**

**01010 ACCOUNTING CLERK (Occupational Base)**

The Accounting Clerk performs one or more accounting tasks such as; posting to registers and ledgers; balancing and reconciling accounts; verifying the internal consistency, completeness, and mathematical accuracy of accounting documents. In addition, tasks include; assigning prescribed accounting distribution codes; examining and verifying the clerical accuracy of various types of reports, lists, calculations, and postings.

This position is responsible for preparing journal vouchers; making entries of adjustments to accounts; and working with spreadsheets. Level I requires a basic knowledge of routine clerical methods, office practices and procedures as they relate to the clerical processing and recording of transactions. Levels II and III require a knowledge and understanding of the established and standardized bookkeeping and accounting procedures and techniques used in an accounting system, or a segment of an accounting system where there are few variations in the types of transactions handled. In addition, most jobs at each level will require a basic knowledge and understanding of the terminology, codes, and processes used in an automated accounting system.

**01011 ACCOUNTING CLERK I**

This position is responsible for performing one or more routine accounting clerical operations such as: examining, verifying, and correcting various accounting documents to ensure completeness and accuracy of data in accordance to accounting procedures. Specific tasks/duties are assigned under adequate supervision. Entry-level reconciliation and posting will be assigned under detailed guidance. In most instances, an employee in this position will rely on the supervisors' instructions. Completed work will be reviewed for accuracy and compliance with procedures.

**01012 ACCOUNTING CLERK II**

This position uses knowledge of double entry bookkeeping in performing one or more of the following: posting actions to journals, identifying subsidiary accounts affected, making debit and credit entries, and assigning proper codes. The Accounting Clerk II may review computer printouts against manually maintained journals, detect and correct erroneous postings, and prepare documents to adjust accounting classifications and other data, or review lists of transactions rejected by an automated system. In this instance, the Accounting Clerk II will determine reasons for rejections, and prepare necessary correcting material. On routine assignments, an employee will select and apply established procedures and techniques. Detailed instructions are provided for difficult or unusual assignments. Completed work and methods used, are reviewed for technical accuracy.

**01013 ACCOUNTING CLERK III**

The Accounting Clerk III maintains journals or subsidiary ledgers of an accounting system and balances and reconciles accounts. Typical duties include one or both of the following: 1.) reviewing invoices and statements verifying information, ensuring sufficient funds have been obligated, and if questionable, resolving with the submitting unit determining accounts involved. The review will include coding transactions, and processing material through data processing for application in the accounting system; 2.) analysis and reconciliation of computer printouts with operating unit reports (contacting units, researching causes of discrepancies, and taking action to ensure that accounts balance). Supervisor provides suggestions for handling unusual or non-recurring transactions. Conformance with requirements

and technical soundness of completed work are reviewed by the supervisor, or are controlled by mechanisms built into the accounting processes.

**01190 ORDER CLERK (Occupational Base)**

The Order Clerk receives written or verbal purchase orders. Work typically involves some combination of the following duties: quoting prices, determining availability of ordered items and suggesting substitutes when necessary, advising expected delivery date and method of delivery, recording order and customer information on order sheets. The Order Clerk is responsible for checking order sheets for accuracy and adequacy of information; ascertaining credit rating of customer; furnishing customer with confirmation of receipt of order; order follow up, or informing customer of a delay in delivery. The Order Clerk maintains order files and verifies shipping invoices against original orders.

This position excludes workers paid on a commission basis or whose duties include any of the following: Receiving orders for services rather than for material or merchandise; providing customers with consultative advice using knowledge gained from engineering or extensive technical training; emphasizing selling skills; handling material or merchandise as an integral part of the job.

**01191 ORDER CLERK I**

This position handles orders involving items that have readily identified uses and applications. The Order Clerk I may refer to a catalog, manufacturer's manual or similar document to insure that the proper item is supplied or to verify the price of order.

**01192 ORDER CLERK II**

This position handles orders that involve making judgments such as choosing which specific product or material from the establishment's product lines will satisfy the customer's needs, or determining the price to be quoted when pricing involves more than merely referring to a price list or making some simple mathematical calculations.

**01270 PRODUCTION CONTROL CLERK**

This position compiles and records production data for industrial establishments to compare records and reports on volume of production, consumption of material, quality control, and other aspects of production. May perform any combination of the following duties: compile and record production data from customer orders, work tickets, product specifications, and individual worker production sheets following prescribed recording procedures and using different word processing techniques. This Clerk calculates such factors as types and quantities of items produced, materials used, amount of scrap, frequency of defects, and worker and department production rates, using a computer, calculator, and/or spreadsheets. Additional tasks include: writing production reports based on data compiled, tabulated and computed, following prescribed formats, maintaining files of documents used and prepared, compiling detailed production sheets or work tickets for use by production workers as guides in assembly or manufacture of products. This Clerk prepares written work schedules based on established guidelines and priorities, compiles material inventory records and prepares requisitions for procurement of materials and supplies charts production using chart, graph, or pegboard based on statistics compiled for reference by production and management personnel. This Clerk also sorts and distributes work tickets or material and may compute wages from employee time cards and post wage data on records used for preparation of payroll.

**01311 Secretary I**

**01312 Secretary II**

**01313 Secretary III**

## **01310 SECRETARY\* (Classification Standard)**

This position provides principal secretarial support in an office, usually to one individual, and, in some cases, to the subordinate staff of that individual. The Secretary maintains a close and highly responsive relationship to the day-to-day activities of the supervisor and staff, works fairly independently receiving a minimum of detailed supervision and guidance, and performs various clerical and secretarial duties requiring knowledge of office routine and an understanding of the organization, programs, and procedures related to the work of the office. Computers may exist in the environment, requiring working knowledge of certain office software programs.

### **Classification by Level**

Secretary jobs that meet the required characteristics are matched at one of three levels according to two factors: (a) level of the secretary's supervisor within the overall organizational structure, and (b) level of the secretary's responsibility. The table following the explanations of these factors indicates the level of the secretary for each combination of factors.

#### **Level of Secretary's Supervisor (LS)**

Secretaries should be matched with one of the three LS levels below that best describes the organization of the secretary's supervisor.

- LS-1 Organizational structure is not complex and internal procedures and administrative controls are simple and informal; supervisor directs staff through face-to-face meetings.
- LS-2 Organizational structure is complex and is divided into subordinate groups that usually differ from each other as to subject matter, function, etc. Supervisor usually directs staff through intermediate supervisors. Internal procedures and administrative controls are formal. An entire organization (e.g., division, subsidiary, or parent organization) may contain a variety of subordinate groups that meet the LS-2 definition. Therefore, it is not unusual for one LS-2 supervisor to report to another LS-2 supervisor.

The presence of subordinate supervisors does not by itself, mean LS-2 applies. For example, a clerical processing organization divided into several units, each performing very similar work, is placed in LS-1.

In smaller organizations or industries such as retail trades, with relatively few organizational levels, the supervisor may have an impact on the policies and major programs of the entire organization, and may deal with important outside contacts as described in LS-3.

- LS-3 Organizational structure is divided into two or more subordinate supervisory levels (of which at least one is a managerial level) with several subdivisions at each level. Executive's program(s) are usually interlocked on a direct and continuing basis with other major organizational segments, requiring constant attention to extensive formal coordination, clearances, and procedural controls. Executive typically has: financial decision-making authority for assigned program(s); considerable impact on the entire organization's financial position or image; and responsibility for, or has staff specialists in such areas as, personnel and administration for assigned organization. Executive plays an important role in determining the policies and major programs of the entire organization, and spends considerable time dealing with outside parties actively interested in assigned program(s) and current or controversial issues.

#### **Level of Secretary's Responsibility (LR)**

This factor evaluates the nature of the work relationship between the secretary and the supervisor or staff, and the extent to which the secretary is expected to exercise initiative and judgment. Secretaries should be matched at the level best describing their level of responsibility. When a position's duties span more than one LR level, the introductory paragraph at the beginning of each LR level should be used to determine which of the levels best matches the position. (Typically, secretaries performing at the higher levels of responsibility also perform duties described at the lower levels.)

- LR-1 Carries out recurring office procedures independently, and selects the guideline or reference that fits the specific case. The supervisor provides specific instructions on new assignments and checks completed work for accuracy. The LR-1 performs varied duties including or comparable to the following:
  - a. Respond to routine telephone requests that have standard answers; refer calls and visitors to appropriate staff. Control mail and assure timely staff response, and send form letters;
  - b. As instructed, maintain supervisor's calendar, make appointments, and arrange for meeting rooms;
  - c. Review materials prepared for supervisor's approval for typographical accuracy and proper format;
  - d. Maintain recurring internal reports, such as time and leave records, office equipment listings, correspondence controls, and training plans;
  - e. Requisition supplies, printing, maintenance or other services, type, take and transcribe dictation, create and maintain office files.
  
- LR-2 handles differing situations, problems, and deviations in the work of the office according to the supervisor's general instructions, priorities, duties, policies, and program goals. Supervisor may assist secretary with special assignments. Duties include or are comparable to the following:
  - a. Screen telephone calls, visitors, and incoming correspondence; personally respond to requests for information concerning office procedures; determine which requests should be handled by the supervisor, appropriate staff member or other offices, prepare and sign routine non-technical correspondence in own or supervisor's name;
  - b. Schedule tentative appointments without prior clearance. Make arrangements for conferences and meetings and assemble established background materials as directed. May attend meetings and record and report on the proceedings;
  - c. Review outgoing materials and correspondence for internal consistency and conformance with supervisor's procedures; assure that proper clearances have been obtained, when needed;
  - d. Collect information from the files or staff for routine inquiries on office program(s) or periodic reports, and refer non-routine requests to supervisor or staff; e. Explain to subordinate staff supervisor's requirements concerning office procedures, coordinate personnel and administrative forms for the office and forwards for processing.
  
- LR-3 uses greater judgment and initiative to determine the approach or action to take in non-routine situations, interprets and adapts guidelines, including unwritten policies, precedents, and practices, which are not always completely applicable to changing situations. Duties include or are comparable to the following:
  - a. Based on knowledge of the supervisor's views, compose correspondence on own initiative about administrative matters and general office policies for supervisor's approval;
  - b. Anticipate and prepare materials needed by the supervisor for conferences, correspondence, appointments, meetings, telephone calls, etc., and informs supervisor on matters to be considered;

- c. Read publications, regulations, and directives and take action or refer those that are important to the supervisor and staff;
- d. Prepare special or one-time reports, summaries, or replies to inquiries, selecting relevant information from a variety of sources such as reports, documents, correspondence, other offices, etc., under general directions;
- e. Advise secretaries in subordinate offices on new procedures; request information needed from the subordinate office(s) for periodic or special conferences, reports, inquiries, etc., and shifts clerical staff to accommodate workload needs.

**Excludes secretaries performing any of the following duties:**

Acting as office manager for the executive's organization, e.g., determines when new procedures are needed for changing situations and devises and implements alternatives; revising or clarifying procedures to eliminate conflict or duplication; identifying and resolving various problems that affect the orderly flow of work in transactions with parties outside the organization.

Preparing agenda for conferences; explain discussion topics to participants; drafts introductions and develops background information and prepares outlines for executive or staff member(s) to use in writing speeches.

The LR-3 advises individuals outside the organization on the executive's views on major policies or current issues facing the organization; contacts or responds to contact from high-ranking outside officials (e.g., city or state officials, members of congress, presidents of national unions or large national or international firms, etc.) in unique situations. These officials may be relatively inaccessible, and each contact typically must be handled differently, using judgment and discretion.

**CRITERIA FOR MATCHING SECRETARIES BY LEVEL**  
 Secretary I (01311), Secretary II (01312), Secretary III (01313),

Intentionally blank	LR-1	LR-2	LR-3
LS-1	I 01311	II 01312	III 01313
LS-2	I 01311	III 01313	See Note
LS-3	I 01311	See Note	See Note

**NOTE: Employees whose duties meet this level of responsibility and supervision may be properly classified under the Administrative Assistant category or the class may need to be conformed.**

**13058 LIBRARY TECHNICIAN**

The Library Technician provides information service such as answering questions regarding card catalogs and assists in the use of bibliographic tools, such as Library of Congress catalog. The incumbent performs routine cataloging of library materials, files cards in catalog drawers according to system used, answers routine inquiries, and refers persons requiring professional assistance to Librarian. This Technician verifies bibliographic information on order requests, works or directs workers in maintenance of stacks or in section of department or division with tasks such as ordering or receiving section of acquisitions department, card preparation activities in catalog department, or limited loan or reserve desk operation of circulation department.

**19000 MACHINE TOOL OPERATION AND REPAIR OCCUPATIONS**

This category includes occupations concerned with setting up and operating machine tools, and using hand tools to make or repair (shape, fit, finish, assemble) metal parts, tool, gauges, models, patterns, mechanism, and machines.

### **19010 MACHINE-TOOL OPERATOR (TOOLROOM)**

Someone in this position specializes in operating one or more than one type of machine tool (e.g., jig borer, grinding machine, engine lathe, milling machine) to machine metal for use in making or maintaining jigs, fixtures, cutting tools, gauges, or metal dies or molds used in shaping or forming metal or nonmetallic material (e.g., plastic, plaster, rubber, glass). Work typically involves: planning and performing difficult machining operations which require complicated setups or a high degree of accuracy, setting up machine tool or tools (e.g., installing cutting tools and adjusting guides, stops, working tables, and other controls to handle the size of stock to be machined.

The Machine Tool Operator determines proper feeds, speeds, tooling, and operation sequence or selects those prescribed in drawings, blueprints, or layouts). Work also involves using a variety of precision measuring instruments, making necessary adjustments during machining operation to achieve requisite dimensions to very close tolerances. This worker may be required to select proper coolants and cutting and lubricating oils to recognize when tools need dressing, and to dress tools. In general, the work of a Machine-Tool Operator (Tool room) at the skill level called for in this classification, requires extensive knowledge of machine shop and tool room practice usually acquired though considerable on-the-job training and experience.

### **19040 TOOL AND DIE MAKER**

The Tool and Die Maker constructs and repairs jigs, fixtures, cutting tools, gauges, or metal dies or molds used in shaping or forming metal or nonmetallic material (e.g., plastic, plaster, rubber, glass). Work typically involves: planning and laying out work according to models, blueprints, drawings, or other written or oral specifications, understanding the working properties of common metals and alloys, selecting appropriate materials, tools, and processes required to complete task, making necessary shop computations, and setting up and operating various machine tools and related equipment. Work for someone in this position also involves using various Tool and Die Maker's hand tools and precision measuring instrument, working to very close tolerances, heat-treating metal parts and finished tools and dies to achieve required qualities, and fitting and assembling parts to prescribed tolerances and allowances. In general, the Tool and Die Maker's work requires rounded training in machine shop and tool room practice usually acquired through formal apprenticeship or equivalent training and experience.

### **21000 MATERIALS HANDLING AND PACKING OCCUPATIONS**

This category includes occupations concerned with preparing and arranging materials and products in bulk and non-bulk forms for distribution or storage; moving and loading or unloading equipment, materials, and products; operating or tending pipelines pumps and valves to transfer liquids; driving forklifts and related material-handling machinery and equipment; and using scoops, hand trucks, and wheelbarrows to load and move materials.

### **21040 MATERIAL EXPEDITER**

The Material Expediter executes the following: locates and moves materials and parts between work areas of plant to expedite processing of goods, according to pre-determined schedules and priorities, and keeps related record, reviews production schedules inventory reports, and work orders to determine types, quantities, and availability of required material and priorities of customer orders, confers with department supervisors to determine materials overdue and to inform them of location, availability, and condition of materials, locates and moves materials to specified production areas, using cart or hand truck, and records quantity and type of materials distributed and on hand. Work may include the following tasks: directing Power-Truck Operator or Material Handling Laborer to expedite movement of materials between storage and production areas, compare work ticket specifications with material at work stations

to verify appropriateness of material in use, prepare worker production records and timecards, and may update and maintain inventory records, using computer terminal.

### **21210 TOOLS AND PARTS ATTENDANT (Tool Crib Attendant)**

This incumbent receives, stores, and issues hand tools, machine tools, dies, replacement parts, shop supplies and equipment, such as measuring devices, in an industrial establishment. The Tools and Parts Attendant does the following keeps records of tools issued to and returned by workers, searches for lost or misplaced tools, prepares periodic inventory or keeps perpetual inventory and requisitions stock as needed, unpacks and stores new equipment; visually inspects tools or measures with micrometer for wear or defects and reports damaged or worn-out equipment to superiors; may coat tools with grease or other preservative, using a brush or spray gun, and may attach identification tags or engrave identifying information on tools and equipment using electric marking tool.

### **23010 AEROSPACE STRUCTURAL WELDER**

This worker performs fusion welding on aircraft and ground support equipment to a qualified Welding Procedures Specification (WPS), performs structural fusion welding on aerospace parts and components per the requirements of specifications as prescribed by Engineering Drawings and Work Orders. The incumbent is required to read and understand engineering drawings and welding symbols, fabricates manufacture-welded parts from engineering drawing with out direct supervision, performs fusion welding and torch brazing for ground support equipment, ensuring the procedure is completed per the requirements of the national welding and brazing codes and specifications. This welder welds a wide variety of materials such as aluminum, magnesium, alloyed and low alloy steel, stainless steel and nickel alloy steels. The incumbent is required to have knowledge of the materials to select the correct filler materials and shielding gas when generating the Weld Procedure Specification (WPS), and produce flight critical welds and assist in the development process of generating Weld Procedure Specifications as mandated by welding codes and specifications. The Aerospace Structural Welder determines the sequence of welding in order to prevent or reduce the amount of warp to the weld, designs and fabricates weld holding fixtures as necessary to perform individual welding projects, performs pre-heat and post weld stress relief operations, maintains weld records. The incumbent may perform duties as a Qualified Weld Inspector by inspecting own welds and those of less qualified welders, and may perform duties such as training and re-certification in the various welding processes.

### **23180 ELECTRONICS TECHNICIAN, MAINTENANCE (Occupational Base)**

The Electronics Technician, Maintenance maintains, repairs, troubleshoots, modifies and installs various types of electronic equipment and related devices such as electronic transmitting and receiving equipment (e.g., radar, radio, television, telecommunication, sonar, and navigational aids); personal and main frame computers and terminals, industrial, medical, measuring, and controlling equipment; and industrial robotic devices. The successful incumbent applies technical knowledge of electronics principles in determining equipment malfunctions, and applies skill in restoring equipment operation, evaluates performance and reliability of prototype or production mode, and recommends changes in circuitry or installation specifications to simplify assembly and maintenance.

### **23182 ELECTRONICS TECHNICIAN, MAINTENANCE II**

The Electronics Technician Maintenance II applies basic and some advanced technical knowledge to solve routine problems by interpreting manufacturer's manuals or similar documents. Work requires familiarity with the interrelationships of circuits and judgment in planning work sequence, in selecting tools, testing instruments, and is reviewed for compliance with accepted practices. This technician works under immediate supervision and achieves technical guidance, as required, from supervisor or higher-level technician.

### **23530 MACHINERY MAINTENANCE MECHANIC**

The Machinery Maintenance Mechanic repairs machinery or mechanical equipment. Work involves most of the following: examining machines and mechanical equipment to diagnose source of trouble, dismantling or partly dismantling machines and performing repairs that mainly involve the use of hand tools in scraping and fitting parts. Responsibilities include replacing broken or defective parts with items obtained from stock, and ordering the production of a replacement part by a machine shop or sending the machine to a machine shop for major repairs. Duties also include preparing written specifications for major repairs or for the production of parts ordered from machine shops, reassembling machines and making all necessary adjustments for operation. In general, the work of a Machinery Maintenance Mechanic requires rounded training and experience usually acquired through a formal apprenticeship or equivalent training and experience.

**Excluded from this classification are workers whose primary duties involve setting up or adjusting machines.**

### **23550 MACHINIST, MAINTENANCE**

The Machinist, Maintenance produces replacement parts and new parts in making repairs of metal parts of mechanical equipment. Work involves most of the following: interpreting written instructions and specifications, planning and laying out of work, using a variety of machinist's hand tools and precision measuring instruments, setting up and operating standard machine tools. This incumbent is responsible for the shaping of metal parts to close tolerances, making standard shop computations relating to dimensions of work, tooling, feeds, and speeds of machining; knowledge of the working properties of the common metals, selecting standard materials, parts, and equipment required for this work; and fitting and assembling parts into mechanical equipment. In general, the machinist's work normally requires a rounded training in machine-shop practice, usually acquired through a formal apprenticeship or equivalent training and experience.

### **23580 MAINTENANCE TRADES HELPER**

The Maintenance Trades Helper assists one or more workers in the skilled maintenance trades by performing specific or general duties of lesser skill such as: keeping a worker supplied with materials and tools, cleaning working area, machine, and equipment; assisting journeyman by holding materials or tools; and performing other unskilled tasks as directed by journeyman. The kind of work the helper is permitted to perform varies from trade to trade. In some trades the helper is confined to supplying, lifting, and holding materials and tools, and cleaning working areas and in others, the worker is permitted to perform specialized machine operations, or parts of a trade that are also performed by workers on a full-time basis.

### **23590 METROLOGY TECHNICIAN (Occupational Base)**

This category includes occupations responsible for the calibration and certifying of electronic and physical/dimensional measuring and test equipment to technical specifications, maintaining traceability to the National Institute of Standards and Technology (NIST).

### **23591 METROLOGY TECHNICIAN I**

The Metrology Technician I will do most or all of the following: calibrate and certify electronic and physical/dimensional measuring and test equipment to technical data specifications, maintaining traceability to the NIST, US Department of Commerce or by reference to natural constants. This person will utilize calibration methods and techniques based on principles of measurement science, technical analysis of measurement problems, accuracy and precision requirements, troubleshoot, align, and repair malfunctioning measuring and test equipment using theories of operation, block diagrams, schematics, logic trees, and software diagnostics. This worker inspects measuring and test equipment for preventive

maintenance, cleanliness, and safety requirements, and will document results of measurements and calibrations on calibration certificates.

### **23592 METROLOGY TECHNICIAN II**

The Metrology Technician II independently determines and performs operations required to calibrate and certify electronic and physical/dimensional measuring and test equipment, maintaining traceability to the National Institute of Standards and Technology (NIST), US Department of Commerce, or by reference to natural constants. The incumbent will utilize calibration methods and techniques based on principles of measurement science, technical analysis of measurement problems, and accuracy and precision requirements.

The Metrology Technician II identifies magnitude of error sources contributing to uncertainty of results to determine reliability of measurement process in quantitative terms, diagnoses and repairs malfunction in complex measuring and test equipment using theories of operation, block diagrams, schematics, logic trees, and software diagnostics to the component level. This worker provides training to apprentice technicians on metrology principle, resolving technical problems, and complicated electronic theory. This worker will inspect measuring and test equipment for preventive maintenance, cleanliness, and safety requirements, analyze and interpret results of measurements and calibrations using mathematical formulas, and document results of measurements and calibrations on calibration certificates and calibration correction charts.

### **23593 METROLOGY TECHNICIAN III**

The Metrology Technician III will independently determine and perform operations required to calibrate and certify electronic and physical/dimensional measuring and test equipment, maintaining traceability to the National Institute of Standards and Technology (NIST), US Department of Commerce, or by reference to natural constants. This Worker assess and utilize calibration methods and techniques based on principles of measurement science, technical analysis of measurement problems, and accuracy and precision requirements, analyzes magnitude of error sources contributing to uncertainty of results and/or test accuracy ratios to determine reliability of measurement process in quantitative terms. The Incumbent will recommend substitution of standards or measuring equipment if required, diagnose and repair malfunctions in complex measuring and test equipment using theories of operation, block diagrams, schematics, logic trees, and software diagnostics to the component level.

The Metrology Technician III will provide training to apprentice and journeyman technicians on metrology principle, resolving technical problems, and complicated electronic theory, implement quality control plan, identify nonconformities, analyze and interpret trends; recommend corrective actions, investigate and identify root causes of problems.

The Metrology Technician III interprets engineering drawings, schematic diagrams, or formulas to determine quality and reliability standards, inspects measuring and test equipment for preventive maintenance, cleanliness, and safety requirements, analyzes and interprets results of measurements and calibrations using mathematical formulas and authenticate calibration certificates for measurements and calibrations and calibration correction charts.

### **23760 PAINTER, MAINTENANCE**

The Painter, Maintenance paints and redecorates walls, woodwork and fixtures. Work involves the following: knowledge of surface peculiarities and types of paint required for different applications, preparing surface for painting by removing old finish or by placing putty or filler in nail holes and interstices, and applying paint with spray gun or brush. This person may mix colors, oils, white lead and other paint ingredients to obtain proper color or consistency. In general, the work of the maintenance painter requires rounded training and experience usually acquired through a formal apprenticeship or equivalent training and experience.

### **23890 SHEET-METAL WORKER**

The Sheet-Metal Worker, Maintenance fabricates, installs and maintains in good repair the sheet-metal equipment and fixtures (such as machine guards, grease pans, shelves, lockers, tanks, ventilators, chutes, ducts, metal roofing) of an establishment. Work involves most of the following: planning and laying out all types of sheet-metal maintenance work from blueprints, models, or other specifications, setting up and operating all available types of sheet-metal working machines, using a variety of hand tools in cutting, bending, forming, shaping, fitting and assembling, and installing sheet-metal articles as required. In general, the work of the maintenance sheet-metal worker requires rounded training and experience usually acquired through a formal apprenticeship or equivalent training and experience.

### **23960 WELDER, COMBINATION, MAINTENANCE** **[Also see 23010 AEROSPACE STRUCTURAL WELDER (above)]**

This incumbent welds metal components together to fabricate or repair products, such as machine parts, plant equipment, mobile homes, motors and generators, according to layouts, blueprints or work orders, using brazing and a variety of arc and gas welding equipment. This worker welds metal parts together, using both gas welding or brazing and any combination of arc welding processes, performs related tasks such as thermal cutting and grinding, repairs broken or cracked parts, fills holes and increases size of metal parts, positions and clamps together components of fabricated metal products preparatory to welding. This worker may locate and repair cracks in industrial engine cylinder heads, using inspection equipment and gas torch, may perform repairs only and be required to pass employer performance tests or standard tests to meet certification standards of governmental agencies or professional and technical associations.

**Note: Employees welding aircraft and ground support equipment should be classified as an Aerospace Structural Welder.**

### **30060 DRAFTER/CAD OPERATOR (Occupational Base)**

The Draft/CAD Operator performs drafting work manually or using a computer, requiring knowledge and skill in drafting methods, procedures, and techniques, prepares drawings of structures, facilities, land profiles, water systems, mechanical and electrical equipment, pipelines, duck systems, and similar equipment, systems, and assemblies. Drawings are used to communicate engineering ideas, design, and information. This operator uses recognized systems of symbols, legends, shadings, and lines having specific meanings in drawings.

#### **Excluded are:**

- a. Designers using technical knowledge and judgment to conceive, plan, or modify designs;
- b. Illustrators or graphic artists using artistic ability to prepare illustrations;
- c. Office drafters preparing charts, diagrams, and room arrangements to depict statistical and administrative data;
- d. Cartographers preparing maps and charts primarily using a technical knowledge of cartography;
- e. Positions below level I; workers in these trainee positions either trace or copy finished drawings under close supervision or, receive instruction in the elementary methods and techniques of drafting; and
- f. Supervisors.

Positions are classified into levels based on the following definitions.

### **30063 DRAFTER/CAD OPERATOR III**

This operator prepares complete sets of complex drawings or computer models that include multiple views, detail drawings, and assembly drawings. Drawings or models include complex design features that require considerable drafting skill to visualize and portray. Assignments regularly require the use of mathematical formulas to draw land contours or to compute weights, center of gravity, load capacities, dimensions, quantities of material, etc. The Draft/CAD Operator works from sketches, computer models, and verbal information supplied by an engineer, architect, or designer to determine the most appropriate views, detail drawings, and supplementary information needed to complete assignments. This operator selects required information from computer programs, and internet sites, precedents, manufacturers' catalogs, and technical guides. This operator independently resolves most of the problems encountered. Supervisor or design originator may suggest methods of approach or provide advice on unusually difficult problems. Typical assignments include:

- a. Prepares complete sets of drawings of test equipment to be manufactured from layouts, models, or sketches. Several cross-sectional and subassembly drawings are required. From information supplied by the design originator and from technical handbooks and manuals, this operator describes dimensions, tolerances, fits, fabrication techniques, and standard parts to use in manufacturing the equipment.
- b. From electronic schematics, information as to maximum size, and manuals giving dimensions of standard parts, determines the arrangement and prepares drawing of printed circuit boards.
- c. From precedents, drafting standards, and established practices, prepares final construction drawings for floodgates, navigation locks, dams, bridges, culverts, levees, channel excavations, dikes and berms, prepares boring profiles, typical cross-sections, and land profiles; and delineates related topographical details as required.
- d. Prepares final drawings for street paving and widening or for water and sewer lines having complex trunk lines; reduces field notes and calculates true grades. From engineering designs, lays out plan, profile and detail appur- tenances required; and notifies supervisor of conflicting details in design.

**Excludes drafter performing work of similar difficulty to that described at this level but who provides support for a variety of organizations that have widely differing functions or requirements.**

### **30064 DRAFTER/CAD OPERATOR IV**

This operator works closely with design originators, preparing drawings or computer models of unusual, complex, or original designs that require a high degree of precision, performs unusually difficult assignments requiring considerable initiative, resourcefulness, and drafting expertise. This incumbent assures that anticipated problems in manufacture, assembly, installation, and operation are resolved by the drawing produced, exercises independent judgment in selecting and interpreting data based on knowledge of the design intent. Although working primarily as a drafter, this worker may occasionally interpret general designs prepared by others to complete minor details, may provide advice and guidance to lower level drafters or serve as coordinator and planner for large and complex drafting projects.

### **30080 ENGINEERING TECHNICIAN (Occupational Base)**

To be covered by these definitions, employees must meet all of the following criteria: Be able to provide semi-professional technical support for engineers working in such areas as research, design, development, testing, or manufacturing process improvement. Work pertains to electrical, electronic, or mechanical components or equipment. These technicians are required to have some practical knowledge of science or engineering. Some positions may require a practical knowledge of mathematics or computer science. Included are workers who prepare design drawings and assist with the design, evaluation, and/or modification of machinery and equipment.

**Excluded are:**

- a. Production and maintenance workers, including workers engaged in calibrating, repairing, or maintaining electronic equipment (see Maintenance Electronics Technicians);
- b. Model Makers and other craft workers;
- c. Quality Control Technicians and Testers;
- d. Chemical and other non-engineering laboratory technicians;
- e. Civil Engineering Technicians and Drafters;
- f. Positions (below Level I) which are limited to simple tasks such as: measuring items or regular shapes with a caliper and computing cross-sectional areas; identifying, weighing, and marking easy-to-identify items; or recording simple instrument readings at specified intervals; and engineers required to apply a professional knowledge of engineering theory and principles.

### **30081 ENGINEERING TECHNICIAN I**

This technician performs simple routine tasks under close supervision or from detailed procedures. Work is checked in progress or on completion. This person performs one or a combination of such typical duties as:

- a. Assembling or installing equipment or parts requiring simple wiring, soldering, or connecting.
- b. Performing simple or routine tasks or tests such as tensile or hardness tests; operating and adjusting simple test equipment; records test data.
- c. Gathering and maintaining specified records of engineering data such as tests, drawings, etc.; performing computations by substituting numbers in specified formulas; plotting data and draws simple curves and graphs.

### **30082 ENGINEERING TECHNICIAN II**

The Engineering Technician II performs standardized or prescribed assignments involving a sequence of related operations, follows standard work methods on recurring assignments but receives explicit instructions on unfamiliar assignments. Technical adequacy of routine work is reviewed on completion; non-routine work may be reviewed in progress. This technician performs at this level, one or a combination of such typical duties as:

- a. Following specific instructions, assembles or constructs simple or standard equipment or parts, servicing or repairing simple instruments or equipment;
- b. Conducting a variety of tests using established methods, preparing test specimens, adjusting and operating equipment, recording test data, and pointing out deviations resulting from equipment malfunction or observational errors;
- c. Extracting engineering data from various prescribed but non-standardized sources, processing the data following well-defined methods including elementary algebra and geometry, and presenting the data in prescribed form.

### **30083 ENGINEERING TECHNICIAN III**

The Engineering Technician III performs assignments that are not completely standardized or prescribed, selects or adapts standard procedures or equipment, using fully applicable precedents, receives initial instructions, equipment requirements, and advice from supervisor or engineer as needed, performs recurring work independently. Work is reviewed for technical adequacy or conformity with instructions. This technician performs at this level one or a combination of such typical duties as:

- a. Constructing components, subunits, or simple models or adapts standard equipment; may troubleshoot and correct malfunctions;

- b. Following specific layout and scientific diagrams to construct and package simple devices and subunits of equipment.
- c. Conducting various tests or experiments which may require minor modifications in test setups or procedures as well as subjective judgments in measurement, selecting, preparing, and operating standard test equipment and records test data;
- d. Extracting and compiling a variety of engineering data from field notes, manuals, lab reports, etc., processing data, identifying errors or inconsistencies, selecting methods of data presentation.
- e. Assisting in design modification by compiling data related to design, specifications, and materials that are pertinent to specific items of equipment or component parts; developing information concerning previous operational failures and modifications, and using judgment and initiative to recognize inconsistencies or gaps in data and seek sources to clarify information.

### **30084 ENGINEERING TECHNICIAN IV**

The Engineering Technician IV performs non-routine assignments of substantial variety and complexity, using operational precedents that are not fully applicable, such assignments that are typically parts of broader assignments, are screened to eliminate unusual design problems. This incumbent may plan such assignments. This technician receives technical advice from supervisor or engineer. Work is reviewed for technical adequacy (or conformity with instructions). This position may be assisted by lower level technicians and have frequent contact with professionals and others within the establishment, and performs one or a combination of such typical duties as:

- a. Developing or reviewing designs by extracting and analyzing a variety of engineering data, applying conventional engineering practices to develop, prepare, or recommend schematics, designs, specifications, electrical drawings and parts lists. (Examples of designs include: detailed circuit diagrams; hardware fittings or test equipment involving a variety of mechanisms; conventional piping systems; and building site layouts).
- b. Conducting tests or experiments requiring selection and adaptation or modification of a wide variety of critical test equipment and test procedures, preparing and operating equipment, recording data, measuring and recording problems of significant complexity that sometimes require resolution at a higher level, and analyzes data and prepares test reports.
- c. Applying methods outlined by others to limited segments of research and development projects, constructing experimental or prototype models to meet engineering requirements; conducts tests or experiments and redesigns as necessary and recording and evaluating data and reports findings.

### **30085 ENGINEERING TECHNICIAN V**

This technician performs non-routine and complex assignments involving responsibility for planning and conducting a complete project of relatively limited scope or a portion of a larger and more diverse project, selects and adapts plans, techniques, designs, or layouts, contacts personnel in related activities to resolve problems and coordinate the work, reviews, analyzes, and integrates the technical work of others. Supervisor or professional engineer outlines objectives, requirements, and design approaches. Completed work is reviewed for technical adequacy and satisfaction of requirements. This incumbent may train and be assisted by lower level technicians, and performs one or a combination of the following:

- a. Designs, develops, and constructs major units, devices, or equipment; conducts tests or experiments; analyzes results and redesigns or modifies equipment to improve performance; and reports results.
- b. From general guidelines and specifications (e.g., size or weight requirements), develops designs for equipment without critical performance requirements that are difficult to satisfy such as engine parts, research instruments, or special purpose circuitry. Analyzes technical data to determine applicability to design problems; selects from several possible design

layouts; calculates design data; and prepares layouts, detailed specifications, parts lists, estimates, procedures, etc. May check and analyze drawings or equipment to determine adequacy of drawings and design.

- c. Plans or assists in planning tests to evaluate equipment performance. Determines test requirements, equipment modification, and test procedures; conducts tests using all types of instruments; analyzes and evaluates test results, and prepares reports on findings and recommendations.

### **30210 LABORATORY TECHNICIAN (Laboratory Tester)**

The Laboratory Technician (Laboratory Tester) performs laboratory tests according to prescribed standards to determine chemical and physical characteristics or composition of solid, liquid, or gaseous materials and substances for purposes such as quality control, process control, product development, or determining conformity to specifications. This incumbent sets up and adjusts laboratory apparatus, and operates grinders, agitators, centrifuges, ovens, condensers, and vibrating screens to prepare material for testing according to established laboratory procedure. This worker performs physical tests on samples of cement or raw materials and controls quality of materials and mix during manufacturing process.

Work involves running tests of the following: raw materials, such as aggregate, limestone, and sand, for such qualities as permeability, load-bearing capacity, or cohesiveness; dry and liquid substances used as ingredients in adhesives, propellants, lubricants, refractories, synthetic rubber, paint, paper, and other compounds for purity, viscosity, density, absorption or burning rate, melting point, or flash point, using viscometer, torsion balance scale, and pH meter; solutions used in processes, such as anodizing, waterproofing, cleaning, bleaching, and pickling, for chemical strength, specific gravity, or other specifications; materials for presence and content of elements or substances, such as hydrocarbons, manganese, natural grease or impurities, tungsten, sulfur, cyanide, ash or dust, and samples of manufactured products, such as cellophane or glassware, to verify conformity with heat resistance, tensile strength, ductibility, and other specifications, and examines materials, using microscope.

The Laboratory Technician (Laboratory Tester) records test results on standard forms, writes test reports describing procedures used, and prepares graphs and charts, cleans and sterilizes laboratory apparatus, may prepare chemical solutions according to standard formulae, and may add chemicals or raw materials to process solutions or product batches to correct deviations from specifications.

### **30460 TECHNICAL WRITER (Occupational Base)**

Under general supervision, the Technical Writer writes and edits technical reports, brochures, and/or manuals for internal documentation, customer reference, or publication. This person researches and analyzes available literature and verifies copy with appropriate departments, and may coordinate production and distribution of materials.

### **30462 TECHNICAL WRITER II**

In this capacity, the Technical Writer revises or writes material that is mostly standardized for reports, manuals, briefs, proposals, instruction books, catalogs, and related technical and administrative publications concerned with work methods and procedures, and installation, operation, and maintenance of machinery and other equipment. The incumbent receives assignment and technical information from a supervisor or senior writer, may be provided notes or manuals containing operating procedures and details, and may observe production, developmental or experimental activities to expand or verify the provided operating procedures and details.

This worker accesses manufacturers' catalogs, drawings and other data relative to operation, maintenance, and service of equipment, may have access to blueprints, sketches, drawings, parts lists,

specifications, mockups, and product samples to integrate and delineate technology, operating procedure, and production sequence and detail. This writer organizes material and completes writing assignment according to set standards regarding order, clarity, conciseness, style, and terminology, may maintain records and files of work and revisions, may select photographs, drawings, sketches, diagrams, and charts to illustrate material, assist in laying out material for publication, and arrange for typing, duplication and distribution of material. This writer may draft speeches, articles, and public or employee relations releases, or specialize in writing material regarding work methods and procedures.

### **99610 QUALITY CONTROL INSPECTOR**

(FGE is one grade above the class that performs the work being inspected.)

This inspector implements quality control and safety plans to ensure compliance with contract specifications and applicable regulations, inspects all phases of a variety of goods, services or operation for conformity to established quality, health and safety, and other operational standards by performing on-going work for compliance with contractual provisions; ensures all services listed on the performance requirement summary are performed in a satisfactory manner, specifies areas to be inspected (scheduled and unscheduled) and how often inspections will be accomplished, communicates deficiencies to proper persons, maintains Quality Control files, and document results of all inspections.

### **METAL-CLEANER, IMMERSION**

Tends equipment that chemically cleans grease, scale, dirt, and other foreign matter from metal objects to prepare them for processes, such as electroplating and galvanizing: Removes shavings, dirt, and rust spots from objects, using air-hose, file, or sandpaper. Loads objects on conveyor which carries them through series of chemical and rinsing baths, or places objects on racks or in containers and immerses objects in chemical and rinsing solutions, manually or using hoist. Moves controls to start conveyor and to regulate temperature of solution or conveyor speed. Maintains consistency of cleaning solutions by adding specified amount of chemical to solutions. Drains, cleans, and refills tanks with chemicals. May dry objects, using dryer. May examine cleaned objects to ensure conformance to standards.

### **CNC PROGRAMMER**

Computer control programmers and operators use computer numerically controlled (CNC) machines to cut and shape precision products, such as automobile parts, machine parts, and compressors. CNC machines include machining tools such as lathes, multiaxis spindles, milling machines, laser cutting, water jet cutting, and wire electrical discharge machines (EDM), but the functions formerly performed by human operators are performed by a computer-control module. CNC machines cut away material from a solid block of metal, plastic, or glass—known as a workpiece—to form a finished part. Computer control programmers and operators normally produce large quantities of one part, although they may produce small batches or one-of-a-kind items. They use their knowledge of the working properties of metals and their skill with CNC programming to design and carry out the operations needed to make machined products that meet precise specifications.

CNC programmers turn the planned machining operations into a set of instructions. These instructions are translated into a computer aided/automated manufacturing (CAM) program containing a set of commands for the machine to follow. These commands normally are a series of numbers (hence, numerical control) that describes where cuts should occur, what type of cut should be used, and the speed of the cut. CNC programmers and operators check new programs to ensure that the machinery will function properly and that the output will meet specifications. Because a problem with the program could damage costly machinery and cutting tools or simply waste valuable time and materials, computer simulations may be used to check the program instead of a trial run. If errors are found, the program must be changed and retested until the problem is resolved. In addition, growing connectivity between CAD/CAM software and CNC machine tools is raising productivity by automatically translating designs

into instructions for the computer controller on the machine tool. These new CAM technologies enable programs to be easily modified for use on other jobs with similar specifications.

After the programming work is completed, CNC operators—also referred to as computer-controlled machine tool operators, metal and plastic—perform the necessary machining operations. The CNC operators transfer the commands from the server to the CNC control module using a computer network link or floppy disk. Many advanced control modules are conversational, meaning that they ask the operator a series of questions about the nature of the task. CNC operators position the metal stock on the CNC machine tool—spindle, lathe, milling machine, or other—set the controls, and let the computer make the cuts. Heavier objects may be loaded with the assistance of other workers, autoloaders, a crane, or a forklift. During the machining process, computer-control operators constantly check to see if any problems exist. Machine tools have unique characteristics, which can be problematic. During a machining operation, the operator modifies the cutting program to account for any problems encountered. Operators who make these adjustments need a basic knowledge of CNC programming. Unique, modified CNC programs are saved for every different machine that performs a task.

## **ELECTRONICS MECHANIC**

Electrical and electronics development mechanic; prototype assembler, electronics assembles, tests, and modifies prototype or custom electronic parts, systems, and apparatus to develop assembly methods and techniques for use by production workers, applying knowledge of electronic theory and assembly techniques: Reads blueprints, wiring diagrams, process sheets, and assembly and schematic drawings, and receives verbal instructions regarding work assignment. Aligns and assembles parts, such as leads, coils, wires, tabs, and terminals into housing, using hand tools, power tools, soldering iron, brazing fixture, and welding head. Routes and laces cables. Installs components and parts, such as switches, coils, transformers, relays, transistors, and semiconductor circuits on chassis, circuit boards, panels, and other units, using hand tools, power tools, soldering and welding equipment, and thermocompression bonding, mass reflow soldering, or resistance welding techniques. Routes and attaches wires and connectors to form circuitry and connects assembly to power supply sources, switch panels, or junction boxes. Attaches hardware and seals assembly, using rivets, screws, hand tools, power tools, resistance welder or thermocompression bonding. Examines parts for defects, such as pinholes or chips. Replaces defective components and wiring, using hand tools and soldering iron. Calibrates unit according to specifications. Enters information on production records, logs, and other report forms. May assemble prototype microelectronic units, using binocular microscope. May assemble prototype electronics using automatic and semi-automatic fabrication equipment. May repair defective units rejected by inspection or test personnel.

## **ELECTRONICS WORKER**

Electrical and electronics development worker; prototype assembler, electronics assembles, tests, and modifies prototype or custom electronic parts, systems, and apparatus to develop assembly methods and techniques for use by production workers, applying knowledge of electronic theory and assembly techniques: Reads blueprints, wiring diagrams, process sheets, and assembly and schematic drawings, and receives verbal instructions regarding work assignment. Aligns and assembles parts, such as leads, coils, wires, tabs, and terminals into housing, using hand tools, power tools, soldering iron, brazing fixture, and welding head. Routes and laces cables. Installs components and parts, such as switches, coils, transformers, relays, transistors, and semiconductor circuits on chassis, circuit boards, panels, and other units, using hand tools, power tools, soldering and welding equipment, and thermocompression bonding, mass reflow soldering, or resistance welding techniques. Routes and attaches wires and connectors to form circuitry and connects assembly to power supply sources, switch panels, or junction boxes. Attaches hardware and seals assembly, using rivets, screws, hand tools, power tools, resistance welder or thermocompression bonding. Examines parts for defects, such as pinholes or chips. Replaces defective components and wiring, using hand tools and soldering iron. Calibrates unit according to specifications. Enters information on production records, logs, and other report forms. May assemble

prototype microelectronic units, using binocular microscope. May assemble prototype electronics using automatic and semi-automatic fabrication equipment. May repair defective units rejected by inspection or test personnel. **Works under the guidance, directions, instructions, and oversight of the Electronics Mechanics.**

### **ELECTRONICS PLANNER/LEAD**

Reviews and provides manufacturability input to engineering drawings. Develops detailed fabrication planning to implement engineering requirements contained in engineering drawings, standards, and procedures. Detailed planning is typically documented in shop travelers, work orders or detailed test procedures and includes step-by-step instructions for electronics mechanics to fabricate or test prototype electronics. Prioritizes work and resolves in-process problems which may include developing work around instructions for material review board consideration. Develops customer quotes based on historical information, engineering data, and process capability. Maintains status of jobs in-progress. Develops detailed reports which may include actual job hours accrued and issues encountered. Oversees work and provides detailed written and verbal instructions to electronics mechanics on methods and techniques to accomplish jobs. Makes recommendations for process improvements and maintains inventory of consumables and other items necessary to accomplish jobs.

### **SAFETY/TRAINING SPECIALIST**

Develops and implements safety program to prevent or correct unsafe environmental working conditions, utilizing knowledge of industrial processes, mechanics, chemistry, and industrial health and safety laws: Examines plans and specifications for new machinery or equipment to determine if all safety precautions have been included. Tours work areas to inspect fire and safety equipment, machinery, and facilities to identify and correct potential hazards and ensure compliance with safety regulations. Determines requirements for safety clothing and devices, and designs, builds, and installs, or directs installation of safety devices on machinery. Conducts or coordinates safety and first aid training to educate workers about safety policies, laws, and practices. Investigates industrial accidents to minimize recurrence and prepares accident reports.

### **MANUFACTURING PROCESS PLANNER / ESTIMATOR**

Develops detailed fabrication planning to implement engineering requirements contained in engineering drawings, standards, and procedures. Provides detailed manpower and material cost estimates for fabrication and assembly tasks based on design documentation and drawings. Detailed planning is typically documented in shop travelers, work orders or detailed test procedures and includes step-by-step instructions for electronics mechanics to fabricate or test prototype electronics. Prioritizes work and resolves in-process problems which may include developing work around instructions for material review board consideration. Develops customer quotes based on historical information, engineering data, and process capability. Maintains status of jobs in-progress. Develops detailed reports which may include actual job hours accrued and issues encountered. Oversees work and provides detailed written and verbal instructions to electronics mechanics on methods and techniques to accomplish jobs. Makes recommendations for process improvements and maintains inventory of consumables and other items necessary to accomplish jobs.

### **PRODUCIBILITY**

Works with designers, engineers, and manufacturing personnel to determine capability of producing deliverable end items. Reviews design drawings for geometric dimensions and tolerances (GD&T) for item fabrication and assembly. Provides fabrication recommendations to cut tolerance restrictions for most efficient machining processes while maintaining integrity of deliverable end item.

## EXEMPT

### **\*\*OPERATIONS MANAGER**

Provides leadership and management to ensure all technical operations of the contract are accomplished to adequately meet the requirements of the Government while ensuring the safety and health of the work force and compliance with all environmental laws, regulations, and NASA/MSFC environmental standards. Individual shall also ensure operations are conducted in a manner that will protect the Government's property from damage. Using lower level technical leads and supervisors, individual accomplishes these goals with a large multi skilled workforce operating in numerous hazardous and non-hazardous work environments. Responsible for ensuring only qualified personnel are utilized in conducting work under this contract and, where applicable, that only individuals with proper certification conduct work that requires certification.

### **TEST COORDINATOR**

This task requires that the employee work closely with customers to ensure that our facilities will surpass their expectations. Ability to communicate complex issues verbally and in writing to others in formal and informal settings and a high degree of organizational skills and demonstrated ability to manage multiple projects. Must work effectively with engineers and scientists from multiple disciplines as well as procurement and resource management personnel. Must be highly proficient with MS Office and Acrobat). Working knowledge of Project Management software is a plus.

Job duties include:

- 1) Coordinate test requirements, develop estimates, and finalize test data delivery with billing to commercial customers.
- 2) Coordinate test requirements, develop estimates, and finalize data delivery to MSFC's clientele.
- 3) Maintain and monitor test schedules to accommodate customers' timeline.
- 4) Maintain schedules for Environmental, Structural Strength, and Structural Dynamics facilities with primary Test Laboratory management.
- 5) Assist with promotional elements (website, brochures, posters, presentations, conferences) as needed.

### **\*\*QUALITY ASSURANCE MANAGER**

Manages the quality assurance functions. Is responsible for developing, implementing, and managing the quality system, safety system, and acceptance/inspection of deliverable end items.

### **\*\*BUSINESS MANAGER**

Manages the accounting and administration functions. Maintains cost control and cost reporting and interfaces with the Government and Corporate Office on business and cost issues.

### **\*\*MANAGER**

Principal onsite manager responsible for overall contract compliance, administration, and operation.

### **CHEMIST**

Conducts research, analysis, synthesis, and experimentation on substances, for such purposes as product and process development and application, quantitative and qualitative analysis, and improvement of analytical methodologies: Devises new equipment, and develops formulas, processes,

and methods for solution of technical problems. Analyzes organic and inorganic compounds to determine chemical and physical properties, utilizing such techniques as chromatography, spectroscopy, and spectrophotometry. Induces changes in composition of substances by introduction of heat, light, energy, and chemical catalysts. Conducts research on manufactured products to develop and improve products. Conducts research into composition, structure, properties, relationships, and reactions of matter. Confers with scientists and engineers regarding research, and prepares technical papers and reports. Prepares standards and specifications for processes, facilities, products, and tests.

## **ENGINEER**

Researches, plans, and designs chemical, mechanical and electromechanical products and systems, and directs and coordinates activities involved in fabrication, operation, application, installation, and repair of chemical, mechanical or electromechanical products and systems: Researches and analyzes data, such as customer design proposal, specifications, and manuals to determine feasibility of design or application. Designs products or systems, such as instruments, controls, robots, engines, machines, and mechanical, thermal, hydraulic, or heat transfer systems, applying knowledge of engineering principles. Plans and directs engineering personnel in fabrication of test control apparatus and equipment, and development of methods and procedures for testing products or systems. Directs and coordinates fabrication and installation activities to ensure products and systems conform to engineering design and customer specifications. Coordinates operation, maintenance, and repair activities to obtain optimum utilization of machines and equipment. May design products and systems to interface machines, hardware, and software. May evaluate field installations and recommend design modifications to eliminate machine or system malfunctions. Directs activities of scientists, other engineers and test technicians and advises management on engineering problems: Apportions work among engineering staff according to specialized training.

## **PHYSICIST**

Conducts research into phases of physical phenomena, develops theories and laws on basis of observation and experiments, and devises methods to apply laws and theories of physics to industry, medicine, and other fields: Performs experiments with masers, lasers, telescopes, mass spectrometers, electron microscopes, and other equipment to observe structure and properties of matter, transformation and propagation of energy, relationships between matter and energy, and other physical phenomena. Describes and expresses observations and conclusions in mathematical terms. Devises procedures for physical testing of materials. Conducts instrumental analyses to determine physical properties of materials.

## **DATA ANALYST**

Reviews test data for reasonableness of data provided for database entry. Reviews input data for accuracy and consistency with historical data. Reviews computer input and output documents to ensure accuracy, completeness, and adherence to establishment standards: Reviews documents to ensure completeness and appropriateness prior to data entry. Reads notes and instructions written on source documents and compares information with printouts to detect errors and ensure completeness and conformity with establishment policies and procedures. Notifies supervisor when errors and shortage of output are detected, and corrects errors or refers work to other workers for correction. Compares corrected input and output data with source documents, worksheets, and data displayed on screen of computer terminal to verify corrections.

**\*\* Labor Categories covered under PWS 1.0 are excluded from Attachment J-6, "IDIQ Fully Burdened Labor Categories"**

**ATTACHMENT J-6**

**SCHEDULE OF IDIQ FULLY BURDENED (EXCEPT FEE) NOT-TO-EXCEED (NTE)  
LABOR RATES FOR PRIME & MAJOR SUBCONTRACTORS**

In accordance with Clause H.5, Supplemental Task Order Procedures, the Contractor shall not exceed the hourly labor rates specified in the table below when developing price estimates for all task orders contemplated or issued under this contract. These labor rates shall be inclusive of indirects and exclusive of fee. The estimated cost for resulting task orders will be negotiated individually, based upon the below schedule of fully burdened rates, as work is authorized (reference Clause H.5, paragraph c). Award fee for the individual task orders will not exceed the rates specified below. The G&A ceiling rate specified in Clause B.7 shall not be exceeded in computing a fully burdened labor rate in all task orders. Detailed Labor Category Position Descriptions are defined in Attachment J-5.

**Fully Burdened NTE Hourly Labor Rates for Prime Contractor**

***(Table to be completed by Offeror)***

	<u>CY1</u>	<u>CY2</u>	<u>CY3</u>	<u>CY4</u>	<u>CY5</u>
<b>Escalation Rate</b>	<b>N/A</b>	<b>2.7%</b>	<b>2.7%</b>	<b>2.9%</b>	<b>3.0%</b>
<b>Labor Category</b>					
<b><u>Exempt</u></b>					
Engineer					
Senior Engineer					
Mechanical Engineer					
Physicist					
Data Analyst					
Chemist					
Test Coordinator					
<b><u>SCA</u></b>					
Producibility					
Accounting Clerk I					
Accounting Clerk II					
Accounting Clerk III					
Order Clerk I					
Order Clerk II					
Safety/Training Specialist					
Quality Control (Mechanical Inspector)					
Laboratory Technician					
Manufacturing Process Planner/Estimator					
Production Control Clerk					
Material Expediter					

Final RFP NNM08125357R

	<u>CY1</u>	<u>CY2</u>	<u>CY3</u>	<u>CY4</u>	<u>CY5</u>
<b>Escalation Rate</b>	<b>N/A</b>	<b>2.7%</b>	<b>2.7%</b>	<b>2.9%</b>	<b>3.0%</b>
<b>Labor Category</b>					
Metal Cleaner, Immersion					
Painter					
Aerospace Structural Welder					
Welder, Combination					
Maintenance Trades Helper					
Machinery Maintenance Mechanic					
Machine Tool Operator					
Sheet-metal Worker					
CNC Programmer					
Tool and Die Maker/Tool & Parts Attendant					
Electronics Planner/Lead					
Electronics Mechanic, Grade 10					
Electronics Worker, Grade 8					
Electronics Technician, Maintenance II					
Engineering Technician I					
Engineering Technician II					
Engineering Technician III					
Engineering Technician IV					
Engineering Technician V					
Library Technician					
Technical Writer II					
Secretary I					
Secretary II					
Secretary III					
Metrology Technician I					
Metrology Technician II					
Metrology Technician III					
Drafter/CAD Operator III					
Drafter/CAD Operator IV					

- \* CY1 = 3/1/08 – 2/29/09 (Base Period)  
 CY2 = 3/1/09 – 2/28/10 (Option 1)  
 CY3 = 3/1/10 – 2/28/11 (Option 2)  
 CY4 = 3/1/11 – 2/29/12 (Option 3)  
 CY5 = 3/1/12 – 2/28/13 (Option 4)

**Material Handling and Prime Award Fee Rates**  
**(For All Task Orders)**  
**(To Be Completed By Offeror)**

The Contractor shall not exceed the material handling rate specified below nor the G&A ceiling rate specified in Clause B.7 for pricing all other direct costs (supplies, materials, equipment, travel, training) in all task orders contemplated or issued under this contract. In addition, the contractor shall not exceed the award fee rate specified below in calculating the maximum available award fee for all task orders issued under this contract. General operating supplies, materials, tools, equipment, travel, and training shall be non-fee bearing in pricing all task orders contemplated or issued under this contract.

<b>Rates*</b>	<b>CY1**</b>	<b>CY2**</b>	<b>CY3**</b>	<b>CY4**</b>	<b>CY5**</b>
Material Handling					
Award Fee					

**Final RFP NNM08125357R**

In accordance with Clause H.5, Supplemental Task Order Procedures, the contractor shall not exceed the hourly labor rates specified in table(s) below for pricing all task orders contemplated or issued under this contract that include Teammates and/or Major Subcontractor labor. These rates should be inclusive of fee (if applicable) for each Teammate and/or Major Subcontractor as proposed by the Offeror and any applicable prime contractor burdens (exclusive of fee). In adding the applicable prime contractor burden, the G&A ceiling rate specified in Clause B.7 shall not be exceeded in computing a fully burdened labor rate in all task orders.

**Fully Burdened NTE Labor Rates (\$/Hr) for Teammate/Major Subcontractor**  
*(Table to be completed by Offeror. Duplicate this sheet as necessary and complete one copy for each Teammate/Major Subcontractor)*

	<u>CY1</u>	<u>CY2</u>	<u>CY3</u>	<u>CY4</u>	<u>CY5</u>
<b>Escalation Rate</b>	<b>N/A</b>	<b>2.7%</b>	<b>2.7%</b>	<b>2.9%</b>	<b>3.0%</b>
<b>Labor Category</b>					
-					
<b><u>Exempt</u></b>					
Engineer					
Senior Engineer					
Mechanical Engineer					
Physicist					
Data Analyst					
Chemist					
Test Coordinator					
<b><u>SCA</u></b>					
Producibility					
Accounting Clerk I					
Accounting Clerk II					
Accounting Clerk III					
Order Clerk I					
Order Clerk II					
Safety/Training Specialist					
Quality Control (Mechanical Inspector)					
Laboratory Technician					
Manufacturing Process Planner/Estimator					
Production Clerk Coordinator					
Material Expediter					
Metal Cleaner, Immersion					
Painter					

Final RFP NNM08125357R

	<u>CY1</u>	<u>CY2</u>	<u>CY3</u>	<u>CY4</u>	<u>CY5</u>
<b>Escalation Rate</b>	<b>N/A</b>	<b>2.7%</b>	<b>2.7%</b>	<b>2.9%</b>	<b>3.0%</b>
<b>Labor Category</b>					
Aerospace Structural Welder					
Welder, Combination					
Maintenance Trades Helper					
Machinery Maintenance Mechanic					
Machine Tool Operator					
Sheet-metal Worker					
CNC Programmer					
Tool and Die Maker/Tool and Parts Attendant					
Electronics Planner/Lead					
Electronics Mechanic, Grade 10					
Electronics Worker, Grade 8					
Electronics Technician, Maintenance II					
Engineering Technician I					
Engineering Technician II					
Engineering Technician III					
Engineering Technician IV					
Engineering Technician V					
Library Technician					
Technical Writer II					
Secretary I					
Secretary II					
Secretary III					
Metrology Technician I					
Metrology Technician II					
Metrology Technician III					
Drafter/CAD Operator III					
Drafter/CAD Operator IV					

- \* CY1 = 3/1/08 – 2/29/09 (Base Period)  
 CY2 = 3/1/09 – 2/28/10 (Option 1)  
 CY3 = 3/1/10 – 2/28/11 (Option 2)  
 CY4 = 3/1/11 – 2/29/12 (Option 3)  
 CY5 = 3/1/12 – 2/28/13 (Option 4)

ATTACHMENT J-7

**TASK ORDERS BY REFERENCE**

<b>Task Order No.</b>	<b>Initiating Org</b>	<b>Description</b>	<b>Period of Performance</b>	<b>Estimated Cost</b>	<b>Maximum Potential Award Fee</b>	<b>Total Value</b>



**Final RFP NNM08125357R**

1800.2	NPD	NASA Occupational Health Program
1810.2	NPD	NASA Occupational Medicine Program
1820.1	NPD	NASA Environmental Health Program
1840.1	NPR	Management of Workers Compensation Injuries and Illnesses
2810.1	NPR	Security of Information Technology
4100.1	NPR	NASA Materials Inventory Management Manual
4200.1	NPR	NASA Equipment Management Manual
5100.4	NPR	Federal Acquisition Regulation Supplement, (NASA/FAR Supplement) Part 18-45 and latest revisions thereto
7120.5	NPR	NASA Program and Project Management Processes and Requirement
7123.1	NPR	System Engineering Procedural Requirements
7150.2	NPR	NASA Software Engineering Process
8000.4	NPR	Risk Management Procedural Requirements
8621.1	NPR	NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping NPD 8710.2, NASA Safety and Health Program Policy
8621.1	NPR	NASA Procedural Requirements for Mishap Reporting, Investigating, and Recordkeeping
8700.1	NPD	NASA Policy for Safety and Mission Success
8705.6	NPR	NASA Procedural Requirements for Safety and Mission Assurance Reviews and Assessments
8710.5	NPD	NASA Safety Policy for Pressure Vessels and Pressurized systems
8715.1	NPR	NASA Occupational Safety and Health Programs w/Change 3 (02/13/06)
8715.2	NPR	NASA Emergency Preparedness Plan Procedural Requirements – Revalidated
8715.3	NPR	NASA Safety Manual
9501.2	NPR	NASA Contractor Financial Management Reporting

Final RFP NNM08125357R

MSFC DOCUMENTATION (MWIs, MPDs, and MPRs)

1040.3	MPD	MSFC Emergency Program
1040.3	MPR	MSFC Emergency Plan
1280.1	MGM	Guidance for Continual Improvement
1280.1	MPD	Marshall Management Manual
1280.3	MWI	Corrective/Preventive Action Notification System
1280.4	MPD	MSFC Corrective Action System
1280.5	MWI	MSFC ALERT Processing
1371.1	MPR	Procedural Requirements for Processing Foreign Visitor requests
1440.2	MPR	MSFC Records Management Program
1600.1	MPR	MSFC Security Procedural Requirements
1700.1	MPR	MSFC Industrial Safety Procedures and Guidelines
1700.3	MWI	NASA Safety Reporting System Corrective Action Process (NSRS)
1800.1	MPR	Bloodborne Pathogens
1800.1	MPD	MSFC Smoking Policy
1810.1	MPR	MSFC Occupational Medicine
1840.1	MPR	MSFC Confined Space Entries
1840.1	MPD	MSFC Environmental Health Program
1840.2	MPR	MSFC Hazard Communication Program
1840.2	MPD	MSFC Hearing Conservation Program
1840.3	MPR	MSFC Hazardous Chemicals in Laboratories Protection Program
1840.3	MPD	MSFC Respiratory Protection Program
1860.1	MPD	Laser Safety
1860.1	MPR	MSFC Radiation Safety Procedural Requirements
1860.2	MPD	Radiation Safety Program

**Final RFP NNM08125357R**

2190.1	MPD	MSFC Export Control Program
2210.1	MPD	Documentation Input and Output of the MSFC Documentation Repository
2210.1	MWI	MSFC Documentation Repository Input/Output and Data Management Project Requests
2500.1	MPR	Marshall Telecommunications and Audio Visual Services
2800.1	MPD	Management of Information Technology Systems and Services at MSFC
2800.1	MWI	Service Order System for Information Technology (IT)
2800.2	MPR	Marshall Information Technology (IT) Services
2800.4	MPR	Marshall Operational Readiness Review (MORR) for Center Applications and Web Sites
2810.1	MPD	Security of Information Technology
2810.1	MPR	Security of Information Technology
2810.2	MPD	Cleaning Information from Computer Equipment at MSFC
3410.1	MPR	Training
3410.1	MWI	Personnel Certification Program
3810.1	MPR	MSFC Management of Workers Compensation Injuries
4000.2	MPR	Property Management
4200.1	MWI	Equipment Control
4220.1	MWI	Space Utilization, Communications, Furniture, Relocation, and Special Event Services
4300.1	MWI	Disposal Turn-Ins/Reutilization Screening
4500.1	MWI	Program Stock, Storage, and Retail Store Operations
4520.1	MWI	Handling (Receiving), Shipping, Delivery, and Packaging Procedures
4520.2	MWI	Use of the Procurement Discrepancy Tracking System (PDTS)
5116.1	MWI	Evaluation of Contractor Performance under Contracts with Award Fee Provisions
6700.1	MPR	Motor Vehicle and Motor Pool Operations

**Final RFP NNM08125357R**

7120.2	MWI	Data Requirements Identification and Traceability
7120.2	MPR	Multi-Program/Project Common use Documentation
7120.3	MPR	Data Management Programs/Projects
7120.4	MWI	Documentation Preparation Programs/Projects
7120.4	MPR	MSFC Program Management Council (PMC) Process
7120.6	MWI	Program Project Continuous Risk Management
8040.1	MPR	Configuration Management Programs/Projects
8040.2	MPR	Product Identification and Traceability
8040.5	MWI	Floor Engineering Orders and Floor Engineering Parts List
8060.1	MPR	Flight Systems Design/Development Control
8060.3	MPR	Requirements and Design Reviews, MSFC Programs and Projects
8500.1	MPR	MSFC Environmental Management Program
8500.1	MPD	MSFC Environmental Management Policy
8500.1	MPR	MSFC Environmental Management Program
8500.2	MPR	MSFC Environmental Management System Manual
8540.2	MWI	Affirmative Procurement Program for Environmentally Preferable Products
8550.1	MWI	Waste Management
8550.2	MWI	Storm Water Management
8550.3	MWI	Wastewater Compliance
8550.4	MWI	Air Emissions Compliance
8550.5	MWI	Chemical Management
8621.1	MWI	Close Call and Mishap Reporting and Investigation Program
8715.1	MPR	Marshal Safety, Health, and Environmental (SHE) Program
8715.1	MWI	Electrical Safety Program

## Final RFP NNM08125357R

8715.10	MWI	Explosives, Propellants, & Pyrotechnics Program
8715.11	MWI	Fire Safety Program
8715.13	MWI	Safety Concerns Reporting System (SCRS)
8715.15	MWI	Ground Operations Safety Assessment and Risk Mitigation Program
8715.16	MWI	Supervisor's Safety Visits
8715.2	MWI	Lockout/Tagout Program
8715.3	MWI	Hazard Identification and Warning System
8715.4	MWI	Personal Protective Equipment (PPE)
8715.9	MWI	Occupational Safety Requirements for Contractors
8720.1	MPD	MSFC Reliability and Maintainability Program for Space Systems
8900.1	MPD	Medical Operations Responsibilities for Human Space Flight Programs

### NASA Standards

8719.11	NASA-STD	Safety Standard for Fire Protection
---------	----------	-------------------------------------

### MSFC Standards Handbooks, Manuals and Reports

555	MSFC-STD	MSFC Engineering Documentation Standard
1951	MSFC-MNL	Change processing, Tracking, and Accounting System User's Guide
2806	MSFC-STD	MSFC Tailoring Guide for the Global Drawing Requirements Manual
3173	MSFC-HDBK	Multi-Program/Project Common Use Project Management/System Engineer Handbook
3394	MSFC-STD	Standard for Contractor Configuration Management Requirements, MSFC Programs/Projects

### Miscellaneous Documents

1845	NFS	Government Property
29 CFR 1910		Department of Labor; Occupational Safety and Health Standards
26 CFR 1925		Safety and Health Standards for Federal Service Contracts

**Final RFP NNM08125357R**

29 CFR 1926	Department of Labor; Occupational Safety and Health Administration Standards for Construction Industry
29 CFR 1960	Basic Program Elements for Federal Employee Occupational Safety and Health Programs
40 CFR	Protection of the Environment
48 CFR Chapter 1	Federal Acquisition Regulations
48 CFR Chapter 18	NASA FAR Supplement
ASME Y 14.100	Engineering Drawing Practices
ASME Y 14.35M	Revision of Engineering Drawings and Associated Documentation
ASME Y 14.5M	Dimensioning and Tolerancing
ASME Y 14.5.2	Certification of Dimensioning and Tolerancing Professionals
Executive Order 13101	Greening the Government through Waste Prevention, Recycling, and Federal Acquisition
FAR	Federal Acquisition Regulation, Part 45
FED-STD-313 D	Material Safety Data, Transportation Data, and Disposal Data for Hazardous
FIPS PUB 201	Federal Information Processing Standards Publication No. 201
HSPD-12	Homeland Security Presidential Directorate
NFPA STANDARDS	National Electrical Code and National Fire Code
SSP 30223	International Space Station Program Problem Reporting and Corrective Action System Requirements
No Reference Number	IEC/DDMS User Guide Release 2.0 dated February 3, 2006

**MISCELLANEOUS POLICIES AND PROCEDURES**

MSFC Smoking Policy at <http://www.msfc.nasa.gov/msfccwa/personel/smoke.html>

**WBS UNIQUE PROCEDURES**

**I. WBS 2.1 Materials Testing**

**Promoted Ignition-Combustion Testing**

**1. NASA-STD-6001**

2. EM10-OWI-CHM-037
3. EM10-OWI-CHM-050
4. EM10-OWI-CHM-051
5. EM10-OWI-CHM-057
6. EM10-OWI-CHM-058
7. EM10-OWI-CHM-061
8. EM10-OWI-CHM-064

Flammability Testing

1. NASA-STD-6001
2. EM10-OWI-CHM-034
3. EM10-OWI-CHM-036
4. EM10-OWI-CHM-050
5. EM10-OWI-CHM-051
6. EM10-OWI-CHM-058

Liquid and Gaseous Oxygen Mechanical Impact Testing

1. NASA-STD-6001
2. EM10-OWI-CHM-032
3. EM10-OWI-CHM-033
4. EM10-OWI-CHM-050
5. EM10-OWI-CHM-051
6. EM10-OWI-CHM-057
7. EM10-OWI-CHM-058
8. EM10-OWI-CHM-061

Advanced Materials Ignition Testing

1. NASA-STD-6001
2. ASTM G72
3. ASTM D2863
4. EM10-OWI-CHM-038
5. EM10-OWI-CHM-045
6. EM10-OWI-CHM-050
7. EM10-OWI-CHM-051
8. EM10-OWI-CHM-058
9. EM10-OWI-CHM-059
10. EM10-OWI-CHM-060
11. EM10-OWI-CHM-061
12. EM10-OWI-CHM-062
13. EM10-OWI-CHM-063
14. EM10-OWI-CHM-082
15. EM10-OWI-CHM-083
16. EM10-OWI-CHM-089

Thermal Vacuum Stability (Outgassing) Testing

1. ASTM-E-595
2. JSC-SP-R-0022
3. EM10-OWI-CHM-040
4. EM10-OWI-CHM-050
5. EM10-OWI-CHM-051
6. EM10-OWI-CHM-058

Toxic Offgassing (Toxicity) Testing

1. NASA-STD-6001
2. EM10-OWI-CHM-039
3. EM10-OWI-CHM-050
4. EM10-OWI-CHM-051
5. EM10-OWI-CHM-058

Test Sample Verification and Preparation

1. NASA-STD-6001
2. EM10-OWI-CHM-042
3. EM10-OWI-CHM-050
4. EM10-OWI-CHM-051

**II. WBS 2.2 ETF/EFDTF Test Support**

ET01-OWI-001	Control of Organizational Issuances and Records
ET01-PRO-OWI-002	Test Operation Procedure Preparation and Change Control
ET01-PRO-OWI-003	Test Preparation Sheet Instructions
ET24-CM-PLAN-200	Environmental Test Facility Configuration Management Plan
ET24-Crane-SOP-001	Overhead Crane Operations Safety Requirements Documents
ET24-CR-SOP-001	ETF Standard Operating Procedure Clean Room System
ET24-ETF-OWI-001	Organizational Work Instruction for ETF Test Operations
ET24-ForkLift-SOP-001	Power Industrial Fork Truck Operation Safety Requirements
ET24-LEAK-SOP-001	SOP for Alcatel ASM 181 T2 Leak Detector
ET24-LEAK-SOP-002	SOP for VEECO MS40 Leak Detector
ET24-LEAK-SOP-003	SOP for VEECO MS40 Leak Detector with Ext. Roughing
ET24-LN2-FOP-001	FOP for the ETF Liquid Nitrogen System
ET24-LOTO-SOP-001	Control of Hazardous Energy Procedure for the ETF
ET24-ManLift-SOP-001	Vehicle Mounted Work Platform Operations Safety Requirements
ET24-PressCal-SOP-001	SOP for Application of Pressure Gauge Calibration Data
ET24-RGA-SOP-001	SOP for the Residual Gas Analyzer Systems
ET24-ScanCal-SOP-001	SOP for In-house Calibration of Data Acquisition Systems
ET24-Software-SOP-001	SOP for Data Acquisition Software Verification
ET24-Sunspot-FOP-001	FOP for Sunspot Thermal Vacuum Chamber
ET24-TA1-FOP-001	FOP for Thermal Altitude Chamber TA1
ET24-TH1-FOP-001	FOP for Thermal Humidity Chamber TH1
ET24-TH2-FOP-001	FOP for Thermal Humidity Chamber TH2
ET24-TH3-FOP-001	FOP for Thermal Humidity Chamber TH3
ET24-TH4-FOP-001	FOP for Thermal Humidity Chamber TH4
ET24-TH5-FOP-001	FOP for Thermal Humidity Chamber TH5
ET24-TH6-FOP-001	FOP for Thermal Humidity Chamber TH6
ET24-TH7-FOP-001	FOP for Thermal Humidity Chamber TH7
ET24-TH8-FOP-001	FOP for Thermal Humidity Chamber TH8
ET24-TH9-FOP-001	FOP for Thermal Humidity Chamber TH9
ET24-TQCM-SOP-001	SOP for Temperature-Controlled Quartz Crystal Microbalance (TQCM) Systems
ET24-UnattnOps-SOP-001	Unattended Operation of the ETF
ET24-V11-FOP-002	FOP for Rapid Depressurization Testing in Thermal

**Final RFP NNM08125357R**

	Vacuum Chamber V11
ET24-V14-FOP-001	FOP for V14 Thermal Vacuum Chamber
ET24-V20-FOP-001	FOP for Thermal Vacuum Chamber V20
ET24-V2-FOP-001	FOP for V2 Thermal Vacuum Chamber
ET24-V3-FOP-001	FOP for V3 Thermal Vacuum Chamber
ET24-V4-FOP-001	FOP for Thermal Vacuum Chamber V4
ET24-V5-FOP-001	FOP for V5 Thermal Vacuum Chamber
ET24-V6-FOP-001	FOP for V6 Thermal Vacuum Chamber
ET24-V7-FOP-001	FOP for Thermal Vacuum Chamber V7
ET24-V8-FOP-001	FOP for Thermal Vacuum Chamber V8
ET24-V9-FOP-001	FOP for Thermal Vacuum Chamber V9
ET24-Variac-FOP-001	SOP for a Variac
ET24-V12-FOP-001	FOP for Thermal Vacuum Chamber V12
ET12-OWI-100	Experimental Test Project Process
ET12-OWI-101	SOP for Non-Critical Lifts
ET12-ARF-FOP-001	Aerodynamic Research Facility Operating Procedure
ET12-FOP-CWT-001	Facility Operating Procedure for Calibrating Wind Tunnel
ET12-PTE-FOP-001	Pump Test Equipment Facility Operating Procedure
ET12-RAF-FOP-001	Rocket Motor Air Flow Facility Operating Procedure
ET12-NT-FOP-001	Nozzle Test Facility Operating Procedure
ET12-IT-FOP-001	Inducer Test Facility Operating Procedure
ET12-TT-FOP-001	Turbine Test Facility Operating Procedure
TD74-ITL-001	Inducer Test Loop Operational Instructions
TD74-NTF-001	Nozzle Test Facility Standard Operating Procedures
TD74-NTF-002	Nozzle Test Facility Pre-heat System Operational Instructions
TD74-NTF-003	Nozzle Test Facility Regenerative Heat System Operational Instructions
TD74-TTE-001	Turbine Test Equipment SOP
TD74-FOP-CWT	Calibrating Wind Tunnel FOP
TD74-100	Organizational Instructions

**III. WBS 2.3 Structural Test Support**

ET21-SGC-SOP-300	General Operating Procedures For The Gilmore Tensile Test Machine
ET21-JJ-SOP-310	General Operating Procedures For The 260k SATEC Universal Test Machine
ET21-RAL-SOP-320	General Operating Procedures For The 120k SATEC Universal Test Machine
ET21-SGC-SOP-400	MTS Aero-90 Load Control System General Operating Procedures
ET21-MAW-SOP-410	General Load-Line Component Specifications And Assembly Procedures
ET21-KML-SOP-420	General Hydraulic Power Unit Operating Procedures
ET21-NWT-SOP-430	General Hydraulic Procedures
ET21-CEW-SOP-100	Structural Loads Test Measurement Acquisition System (SLTMAS) User's Manual
ET21-SLR-SOP-110	SLTMAS Conversion Equations
ET21-CLH-SOP-130	Strain Gauge Installation And Removal Procedures
ET21-GL-SOP-140	Calibration Procedures For EDC Model 501j

**Final RFP NNM08125357R**

ET21-RAL-SOP-150	Electrical/Electronic Displacement Transducer Calibration Procedure
ET21-RAL-SOP-160	Electrical/Electronic Displacement Indicator Installation Procedures
ET21-GL-SOP-170	General Operating Procedures For The HYTORC Electric-Hydraulic Torque Machine
ET21-CEW-OWI-800	Measuring And Test Equipment Calibration Process
ET21-NWT-OWI-900	Work Process Instruction
ET20-OWI-001	Test Program And Documentation Control
ET20-OWI-002	Test Procedure Preparation And Change Control
ED27-OWI-005	Non-Critical Lifts
ET01-DYN-FOP-601	TEAC Data Recorder Calibration
ET01-DYN-FOP-602	TEAC Data Recorder High Sample Rate Calibration
ET23-ACU-FOP-001	B&K Type 2133 Frequency Analyzer Calibration
ET23-ACU-FOP-003	Acoustic Tests
ET23-ACU-FOP-005	Acoustic Emission Measurements
ET23-ACU-FOP-007	Annual Calibration of Microphones
ET23-ACU-FOP-008	Acoustic Data Acquisition
ET23-ACU-FOP-011	B&K Pulse System Calibration
ET23-CDL-FOP-001	Use of Ometron Laser Vibrometer for Dynamic Testing
ET23-CDL-FOP-002	Calibration of Ometron Laser Vibrometer for Dynamic Testing
ET23-CDL-FOP-003	HP3566/PC Data Acquisition for Dynamic Tests
ET23-CDL-FOP-004	Calibration of Laser Doppler Displacement Sensors for Dynamic Testing
ET23-EMA-FOP-002	PCB Multi-Channel Accelerometer System Setup and Calibration for Modal Surveys
ET23-EMA-FOP-003	MIMO Modal Surveys Using LMS CADA-X Software
ET23-EMA-FOP-005	Bungee Suspension for Modal Surveys
ET23-EMA-FOP-008	Cabling Schematics for Data Acquisition with Hewlett Packard 3565 Measurement Hardware for Modal Surveys
ET23-EMA-FOP-009	Calibration of PCB333 Accelerometer for Modal Testing
ET23-EMA-FOP-010	Verification of LMS Scadas/POA and Agilent VXI Data Acquisition System
ET23-EMA-FOP-012	Load Cell Calibration for Modal Surveys
ET23-EMA-FOP-013	ICP Accelerometer Calibration for Modal Surveys
ET23-EMA-FOP- 014	Cabling Schematics for Data Acquisition with LMS Scadas III Measurement Hardware for Modal Surveys
ET23-EMA-FOP-015	Cabling Schematics for the NT Workstation Computer with HP E14214B VXI Measurement Hardware for Modal Surveys
ET23-EMA-FOP-016	Argon Laser Operation
ET23-EMA-FOP-017	Nicolet Compass Net 8-Channel Data Acquisition System Operation, Calibration, and Verification
ET23-EMA-FOP-018	DC Capacitive Accelerometer Calibration for Modal Surveys
ET23-EMA-FOP-019	Impact Modal Surveys Using LMS Test, Lab Software
ET23-EMA-FOP-021	Throughput Acquisition Using LMS CADA -X-Software
ET23-EMA-SOP-002	Laser Operations in the Optical Modal Testing Facility
ET23-OWI-001	Documentation Control
ET23-OWI-002	Non-Critical Lifts
ET23-SHK-FOP-001	Pyrotechnic Shock Tests
ET23-SHK-FOP-002	Calibration Of Accelerometers Used In Shock Tests
ET23-SHK-FOP-003	Nicolet BE256LE Calibration and Software Verification

**Final RFP NNM08125357R**

ET23-SHK-FOP-004	SRSFAMOS and FAMOS Software Verification
ET23-SHK-SOP-001	Pyrotechnic Shock Facility
ET23-VIB-FOP-001	Vibration East Control System Calibration and Software Verification
ET23-VIB-FOP-003	Vibration and Shock Testing
ET23-VIB-FOP-004	Vibration Test
ET23-VIB-FOP-006	Vibration West Control System Calibration and Software Verification
ET23-VIB-FOP-010	Calibration of Accelerometers in Vibration East
ET23-VIB-FOP-014	Stud Tensioning

**IV. WBS 2.4 Fabrication and Assembly of R&D Space Flight and Associated Hardware**

NPR 4100.1	NASA Materials Inventory Management Manual
MPR 1280.4	MSFC Corrective Action System
MPR 8730.3	Control of Non-Conforming Product
MPR 8730.5	Control of Inspection, Measuring, and Test Equipment
MWI 1280.1	Fabrication Services Request Instructions (MSFC Form 3751)
MWI 1280.5	MSFC ALERT Processing
MWI 5330.1	Evaluation of Contractors, Suppliers, and Vendors
MWI 8040.5	Floor Engineering Orders and Floor Engineering Parts Lists (FEOs/FEPLs)
MWI 8730.1	Equipment Logs/Records
MWI 8730.2	Temporarily Installed Hardware Control
MWI 8730.3	MSFC Material Review System
EI41-05-001	Mechanical Fabrication Work Instructions
ANSI/AWS-C3.4	Torch Brazing
ANSI/AWS-C3.5	Brazing, Induction
ANSI/AWS-C3.6	Furnace Brazing
ANSI/AWS-C3.7	Aluminum Brazing
ANSI/AWS D1.1	Structural Welding Code ASME B31.3
ASME B31.1	ASME Code for Pressure Piping, B31,
ASTM A967	American National Standard
ASTM-B488	Standard Specification for Chemical Passivation Treatments for Stainless Steel Parts
ASTM-B661	Standard Specification for Electrodeposited Coatings of Gold for Engineering Uses
ASTM-E1444	Standard Practice for Heat Treatment of Magnesium Alloys
ASTM E1742	Standard Practice for Magnetic Particle Examination
IEST-STD-CC1246D	Standard Practice for Radiographic Examination
ISO 14644-1	Product Cleanliness Levels and Contamination Control Program
MIL-A-8625	Clean rooms and Associated Controlled Environments
MIL-C-5541	Anodic Coating for Aluminum and Aluminum Alloys
MIL-DTL-13924	Chemical Conversion Coatings on Aluminum and Aluminum Alloys
	Coating, Oxide, Black, for Ferrous Metals

**Final RFP NNM08125357R**

MIL-DTL-16232	Phosphate Coating, Heavy, Manganese of Zinc Base
MIL-PRF-83282	Hydraulic Fluid, Fire Resistant, Synthetic Hydrocarbon Base, NATO Code Number H-537
MIL-HDBK-6870	Inspection Program Requirements Nondestructive for Aircraft and Missile Materials and Parts MIL-PRF-23377
MIL-S-5002	Primer Coating; Epoxy, High-Solids
MIL-DTL-83133	Surface Treatments and Inorganic Coatings for Metal Surfaces of Weapon Systems
MSFC-PROC-166	Turbine Fuels, Aviation
MSFC-RQMT-1282	Procedure for Hydraulic System Detailed Parts, Components, Assemblies, and Hydraulic Fluids for Space Vehicles, Cleaning, Testing, and Handling
MSFC-SPEC-164	Requirements for Surface Preparation and Application of Dry Film Lubricants
MSFC-SPEC-259	Cleanliness of Components for use in Oxygen, Fuel, and Pneumatic System Specification for
MSFC-SPEC-445	Radiographic Inspection: Soundness Requirements for Fusion Welds in Aluminum and Magnesium Alloy Sheet and Plate Material (Space Vehicle Components) Standard
MSFC-SPEC-504	Adhesive Bonding Process and Inspection
MSFC-SPEC-560	Requirement for Welding Aluminum Alloys
MSFC-SPEC-766	Fusion Welding of Steels, Corrosion, and Heat Resistant Alloys
MSFC-SPEC-2489	Fusion Welding Titanium and Titanium Alloys
MSFC-SPEC-2490	Cleaner, Organic
MSFC-SPEC-2491	Cleaner, Organic With D-Limonene
MSFC-SPEC-2492	Cleaner, Aqueous
MSFC-STD-2497	Cleaner, Aqueous With D-Limonene
MSFC-STD-156	Hand Wipe Cleaning Requirements
MSFC-STD-246	Standard for Riveting, Fabrication, and Inspection
MSFC-STD-366	Standard Design and Operational Criteria for Controlled Environmental Areas
MSFC Standard 486	Penetrant Inspection Method
MSFC-STD-561	Standard Threaded Fasteners, Torque Limit
MSFC-STD-2594	Threaded Fasteners, Securing of Flight Hardware Used on Shuttle Payloads and Experiments
NAS 410	MSFC Fastener Management and Control Practices
NASA-STD-5006	NAS Certification and Qualification of Nondestructive Test Personnel
SAE-AMS-2770	General Fusion Welding Requirements for Aerospace Materials in Flight Hardware
SAE-AMS-2771	Heat Treatment of Wrought Aluminum Alloy Parts
SAE-AMS-2772	Heat Treatment of Aluminum Alloy Casting
SAE-AMS-H-6875	Heat Treatment of Aluminum Alloy Raw Materials
SAE-AMS-H-81200	Process for Heat Treatment of Steel
SAE-AMS-QQ-N-290	Heat Treatment of Titanium and Titanium Alloys
SAE-AMS-QQ-P-35	Nickel Plating (Electrodeposited)
SN-C-0005	Passivation Treatment for Corrosion-Resistant Steel
SNT-TC-IA-SET	NSTS Contamination Control Requirements
	Complete Set of ASNT-TC-1A Including All Supplements

**Final RFP NNM08125357R**

TT-C-490                      Cleaning Methods for Ferrous Surfaces and Pretreatments  
for Organic Coatings

**V. WBS 2.5 Electrical Fabrication, Test, and Assembly**

NASA-STD-8739.1              Workmanship Standard for Staking and Conformal Coating  
of Printed Wiring Boards and Electronic Assemblies  
(Superseding NAS-5300.4(3J-1), NHB-5300.4(3L), AND  
NHB-5300.4(3M))

NASA-STD-8739.2              Workmanship Standard for Surface Mount Technology  
(Superseding NAS-5300.4(3M))

NASA-STD-8739.3              Soldering Electrical Connections (Superseding NHB-  
5300.4(3A-2)) (Includes change 2 released 01/18/2001)

NASA-STD-8739.4              Crimping, Interconnecting Cables, Harnesses, and Wiring  
(Superseding NAS-5300.4(3G-1), NHB-5300.4(3G) AND  
NHB-5300.4(3H))

NASA-STD-8739.5              Fiber Optic Terminations, Cable Assemblies, and Installation

ANSI/EOS/ESD-S20.20        Development of an Electrostatic Discharge Control Program  
for Protection of Electrical and Electronic Parts, Assemblies  
and Equipment (Excluding Electrically Initiated Explosive  
Devices).

EI42-EFT-OI-001              Electronic Fabrication & Test Workflow and Control  
EI42-EFT-OI-002              Process for Electronic Fabrication and Assembly  
ASTM-E1237                    Standard Guide for Installing Bonded Resistance Strain  
Gages

MSFC-SPEC-708                ID Markers for Space Systems Electrical Harness  
MSFC-STD-372                Silk Screening of Electrical Equipment  
MSFC-STD-373                Lettering of Electrical Equipment  
MSFC-STD-383                Standard for Rubber Stamping of Electrical  
Equipment and Components

IPC-6012                      Qualifications and Performance Specifications for Rigid  
Printed Boards

NPR 4100.1                    NASA Materials Inventory Management Manual  
MPR 1280.4                    MSFC Corrective Action System  
MPR 8730.3                    Control of Non-Conforming Product  
MPR 8730.5                    Control of Inspection, Measuring, and Test Equipment  
MWI 1280.1                    Fabrication Services Request Instructions (MSFC Form 3751)  
MWI 1280.5                    MSFC ALERT Processing  
MWI 5330.1                    Evaluation of Contractors, Suppliers, and Vendors  
MWI 8040.5                    Floor Engineering Orders and Floor Engineering Parts Lists  
(FEOs/FEPLs)

MWI 8730.1                    Equipment Logs/Records  
MWI 8730.2                    Temporarily Installed Hardware Control  
MWI 8730.3                    MSFC Material Review System  
EI41-05-001                    Mechanical Fabrication Work Instructions

ANSI/AWS-C3.4                Torch Brazing  
ANSI/AWS-C3.5                Brazing, Induction  
ANSI/AWS-C3.6                Furnace Brazing  
ANSI/AWS-C3.7                Aluminum Brazing

**Final RFP NNM08125357R**

ANSI/AWS D1.1	Structural Welding Code ASME B31.3
ASME B31.1	ASME Code for Pressure Piping, B31,
ASTM A967	American National Standard Specification for Chemical Passivation
ASTM-B488	Treatments for Stainless Steel Parts
ASTM-B661	Standard Specification for Electrodeposited Coatings of Gold for Engineering Uses
ASTM-E1444	Standard Practice for Heat Treatment of Magnesium Alloys
ASTM E1742	Standard Practice for Magnetic Particle Examination
IEST-STD-CC1246D	Standard Practice for Radiographic Examination
ISO 14644-1	Product Cleanliness Levels and Contamination Control Program
MIL-A-8625	Clean rooms and Associated Controlled Environments
MIL-C-5541	Anodic Coating for Aluminum and Aluminum Alloys
MIL-DTL-13924	Chemical Conversion Coatings on Aluminum and Aluminum Alloys
MIL-DTL-16232	Coating, Oxide, Black, for Ferrous Metals
MIL-PRF-83282	Phosphate Coating, Heavy, Manganese of Zinc Base
MIL-HDBK-6870	Hydraulic Fluid, Fire Resistant, Synthetic Hydrocarbon Base, NATO Code Number H-537
MIL-PRF-23377	Inspection Program Requirements Nondestructive for Aircraft and Missile Materials and Parts
MIL-S-5002	Primer Coating; Epoxy, High-Solids
MIL-DTL-83133	Surface Treatments and Inorganic Coatings for Metal Surfaces of Weapon Systems
MSFC-PROC-166	Turbine Fuels, Aviation
MSFC-RQMT-1282	Procedure for Hydraulic System Detailed Parts, Components, Assemblies, and Hydraulic Fluids for Space Vehicles, Cleaning, Testing, and Handling
MSFC-SPEC-164	Requirements for Surface Preparation and Application of Dry Film Lubricants
MSFC-SPEC-259	Cleanliness of Components for use in Oxygen, Fuel, and Pneumatic System Specification for
MSFC-SPEC-445	Radiographic Inspection: Soundness Requirements for Fusion Welds in Aluminum and Magnesium Alloy Sheet and Plate Material (Space Vehicle Components) Standard
MSFC-SPEC-504	Adhesive Bonding Process and Inspection
MSFC-SPEC-560	Requirement for Welding Aluminum Alloys
MSFC-SPEC-766	Fusion Welding of Steels, Corrosion, and Heat Resistant Alloys
MSFC-SPEC-2489	Fusion Welding Titanium and Titanium Alloys
MSFC-SPEC-2490	Cleaner, Organic
MSFC-SPEC-2491	Cleaner, Organic With D-Limonene
MSFC-SPEC-2492	Cleaner, Aqueous
MSFC-STD-2497	Cleaner, Aqueous With D-Limonene
MSFC-STD-156	Hand Wipe Cleaning Requirements
MSFC-STD-246	Standard for Riveting, Fabrication, and Inspection
MSFC-STD-366	Standard Design and Operational Criteria for Controlled Environmental Areas
MSFC Standard 486	Penetrant Inspection Method
	Standard Threaded Fasteners, Torque Limit

**Final RFP NNM08125357R**

MSFC-STD-561	Threaded Fasteners, Securing of Flight Hardware Used on Shuttle Payloads and Experiments
MSFC-STD-2594 NAS 410	MSFC Fastener Management and Control Practices NAS Certification and Qualification of Nondestructive Test Personnel
NASA-STD-5006	General Fusion Welding Requirements for Aerospace Materials in Flight Hardware
SAE-AMS-2770	Heat Treatment of Wrought Aluminum Alloy Parts
SAE-AMS-2771	Heat Treatment of Aluminum Alloy Casting
SAE-AMS-2772	Heat Treatment of Aluminum Alloy Raw Materials
SAE-AMS-H-6875	Process for Heat Treatment of Steel
SAE-AMS-H-81200	Heat Treatment of Titanium and Titanium Alloys
SAE-AMS-QQ-N-290	Nickel Plating (Electrodeposited)
SAE-AMS-QQ-P-35	Passivation Treatment for Corrosion-Resistant Steel
SN-C-0005	NSTS Contamination Control Requirements
SNT-TC-IA-SET	Complete Set of ASNT-TC-1A Including All Supplements
TT-C-490	Cleaning Methods for Ferrous Surfaces and Pretreatments for Organic Coatings

**VI. WBS 2.6 Reserved**

**VII. WBS 2.7 Space Environmental Effects Testing**

Contamination Control Support

1. EM50-OWI-005
2. EM50-OWI-006
3. EM50-OWI-007
4. EM50-OWI-008
5. EM50-OWI-009
6. EM50-OWI-010
7. EM50-OWI-011
8. EM50-OWI-012
9. EM50-OWI-013
10. EM50-OWI-014
11. EM50-OWI-015
12. EM50-OWI-016
13. EM50-OWI-017
14. EM50-OWI-018
15. EM50-OWI-019
16. EM50-OWI-020
17. EM50-OWI-021
18. EM50-OWI-023
19. EM50-OWI-024
20. EM50-OWI-026
21. EM50-OWI-027
22. EM50-OWI-028
23. EM50-OWI-030
24. EM50-OWI-031
25. EM50-OWI-001

26. EM50-OWI-002
27. EM50-OWI-003
28. EM50-OWI-004
29. ASTM E1559
30. ASTM D3359
31. OWI 32 Patscantouchscreen (draft)
32. Sonotek Operation (draft)

Space Environmental Effects Testing

1. EM50-OWI-005
2. EM50-OWI-006
3. EM50-OWI-007
4. EM50-OWI-008
5. EM50-OWI-009
6. EM50-OWI-010
7. EM50-OWI-011
8. EM50-OWI-012
9. EM50-OWI-013
10. EM50-OWI-014
11. EM50-OWI-015
12. EM50-OWI-016
13. EM50-OWI-017
14. EM50-OWI-018
15. EM50-OWI-019
16. EM50-OWI-020
17. EM50-OWI-021
18. EM50-OWI-023
19. EM50-OWI-024
20. EM50-OWI-026
21. EM50-OWI-027
22. EM50-OWI-028
23. EM50-OWI-030
24. EM50-OWI-031
25. EM50-OWI-001
26. EM50-OWI-002
27. EM50-OWI-003
28. EM50-OWI-004
29. ASTM E1559
30. HiTEMS Operations Procedure (under development)
31. ED31 owi xxxc lambda19 (draft)
32. EM50-OWI-040
33. EM50-OWI-033
34. EM50-OWI-036
35. EM50-OWI-037
36. ITF-SOP-001
37. ITF-SOP-002
38. EWG Docs 01 16 07

ESL System Operations

1. EM50-OWI-005
2. EM50-OWI-006

3. EM50-OWI-007
4. EM50-OWI-008
5. EM50-OWI-009
6. EM50-OWI-010
7. EM50-OWI-011
8. EM50-OWI-012
9. EM50-OWI-013
10. EM50-OWI-014
11. EM50-OWI-015
12. EM50-OWI-016
13. EM50-OWI-017
14. EM50-OWI-018
15. EM50-OWI-019
16. EM50-OWI-020
17. EM50-OWI-021
18. EM50-OWI-023
19. EM50-OWI-024
20. EM50-OWI-026
21. EM50-OWI-027
22. EM50-OWI-028
23. EM50-OWI-030
24. EM50-OWI-031
25. EM50-OWI-001
26. EM50-OWI-002
27. EM50-OWI-003
28. EM50-OWI-004
29. ASTM E1559
30. HiTEMs Operations Procedure (under development)
31. ESL Facility OWI (draft)
32. esl laser safety rm 121
33. esl laser safety rm 123c

**VIII. WBS 2.8 Soil Moisture**

N/A

**IX. WBS 2.9 Environmental Gas Laboratory Support**

1. EM10-OWI-CHM-050
2. EM10-OWI-CHM-051
3. EM10-OWI-CHM-052
4. EM10-OWI-CHM-056
5. MSFC-STD-246

**X. WBS 2.10 Computer Aided Design Drawing**

1. EV35-OWI-001
2. EV35-OWI-002
3. EV35-OWI-003
4. EV35-OWI-004
5. EV35-OWI-005
6. AMSE Y14.5M-1994

**XI. WBS 2.11 Data Analysis and Database Entry for Materials and Processes  
Technical Information System (MAPTIS)**

N/A

**XII. WBS 2.12 Optics Support**

Optical Coatings, Optical Fabrication and Metrology

1. XD32-OWI-003
2. XD32-OWI-100
3. MIL-PRF-13830B
4. MIL-C-675C
5. MIL-C-675C-A3
6. MIL-M-13508C
7. MIL-M-13508-C-A1

**XIII. WBS 2.15 Tool Crib Operations**

1. EM40-OWI-032
2. EM40-OWI-034
3. EM40-OWI-035

**ATTACHMENT J-9**

**INSTALLATION-PROVIDED PROPERTY AND SERVICES**

The Government will provide the use of the following property and services to all on-site personnel under this contract as necessary (reference G.6 - 1852.245-77 LIST OF INSTALLATION-ACCOUNTABLE PROPERTY AND SERVICES (JUL 1997)). The property and services provided include the following:

- (1) Computer workstations (one seat license per workstation under MSFC's Outsourcing Desktop Initiative for NASA (ODIN) contract and accountable to the ODIN contract) and associated maintenance (general and specialized). The numbers historically provided include:
  - ETF/EFDTF – Eight (8) seats
  - Structural Test – Twelve (12) seats
  - Materials Testing – Forty-six (46) seats (including contract management)
  - Shop and Plating – Twenty (20) seats
- (2) Printers, plotters, and scanners
- (3) Application software
- (4) Specialized Commercial-Off-The-Shelf (COTS) software as required to meet specific MSFC program/project objectives
- (5) Document Reproduction Equipment and Reproduction Services
- (6) Adequate work space and appropriate office furniture including technical work rooms, conference rooms, and storage areas
- (7) Custodial and maintenance services
- (8) A government vehicle (at MSFC) as needed for local travel
- (9) Taxi service
- (10) Telecommunication devices

Note: The Government anticipates no specific requirement for wireless telecommunication devices (e.g., cellular phones, pagers, and personal data assistants) and will not provide such devices. However, in the event wireless telecommunications devices are required to access NASA information technology (IT) systems or services (e.g., email), those devices shall be provided by the Government after obtaining Contracting Officer and COTR approval).

INSTALLATION SERVICES, FACILITIES AND MAJOR EQUIPMENT

The following is a description of the major facilities, test chambers, and support equipment to be used under this contract. This list is subject to change as new facilities, test chambers, and support equipment are added/removed to support test and fabrication requirements. The Contractor shall support all facilities, chambers, and equipment located at these major facilities.

**I. WBS Element 2.1 Materials Testing**

Materials Combustion Research Facility

The Government currently uses the MAPTIS database as the system to track and manage all work associated with Materials Testing. This is a Government developed system and will be available to the METTS Contractor.

The Materials Combustion Research Facility (MCRF), MSFC Building 4623, is one of the materials testing facilities that screen materials for their potential to safely be utilized on NASA missions. The MCRF houses the complete test systems to perform the materials testing that is required by NASA-STD-6001. The following are the test systems and capabilities that are housed within the MCRF:

Flammability Testing

The flammability test is used to determine a material's potential to burn in a given atmosphere or whether a material is self-extinguishing or nonflammable.

Oxygen Index Testing

Oxygen index testing determines the precise oxygen concentration that will support the combustion of a given material.

Ambient LOX Mechanical Impact Testing

The Liquid Oxygen (LOX) Mechanical Impact Test is used to determine the tendency of a material to react or ignite in a liquid oxygen environment using mechanical impact as the only ignition source.

High Pressure LOX/GOX Mechanical Impact Testing

The High-Pressure LOX/ Gaseous Oxygen (GOX) Mechanical Impact Test serves the same function as the ambient pressure test, with one exception: a material is tested in pressurized oxygen. The test determines if the material is an appropriate choice for an oxygen system when exposed to extreme pressures and temperatures (up to 10,000 psi and 1,000 °F).

Autogenous Ignition Temperature Testing

The autogenous ignition temperature (AIT) test quantitatively determines the temperature at which liquids or solids will "auto-ignite" up to a maximum of 800 °F (427 °C) and under pressures up to 10,000 psia

Gaseous Pneumatic Impact Testing

The gaseous pneumatic impact test determines the ignition sensitivity of materials and components when exposed to adiabatic compression in oxygen.

Promoted Ignition/Combustion Testing

The promoted ignition/combustion test ignites materials in high-pressure oxygen (up to 10,000 psia) to determine their combustion characteristics and to identify materials that fit design criteria and are most resistant to burning.

#### Heated Promoted Combustion Testing

Heated Promoted Combustion is the same as promoted ignition/combustion testing, but with conditions up to 10,000 psi at 900 °F and temperatures up to 2,000 °F at 3,000 psi.

#### Wire Insulation Flammability Testing

The Wire Insulation Flammability Test determines the combustion characteristics of wire insulations while they are carrying their maximum allowable current.

#### Toxicity Testing

Toxicity testing is conducted on both individual materials—primarily non-metals—and hardware assemblies that are candidates for space flight. The test is used to determine if the materials/hardware will release (or offgas) potentially harmful substances under the most extreme conditions they might experience during a mission and whether the amounts emitted are enough to pose any health threats.

#### Thermal Vacuum Stability

Thermal vacuum stability, or outgassing, testing refers to the test to determine the tendency of non-metallic materials to release volatile chemicals under the vacuum conditions present in space, causing the materials to degrade or become unstable

## **II. WBS Element 2.2 ETF/EFDTF Test Support**

### Aerodynamic Research Facility

The Aerodynamic Research Facility is an intermittent trisonic blow down tunnel operated from pressure storage to vacuum or atmospheric exhaust. The test section measures 14 inches by 14 inches in two of the interchangeable test sections. The transonic section has interchangeable fixed contour blocks and provides for Mach numbers of 0.20 through 1.96. The supersonic section has fixed contour plates positioned by hydraulic screw jacks and provides for Mach 2.75 through 5.00. The trisonic facility also has a special test section for a variety of test subjects, including nozzles. Flow Visualization is available with Schlieren, Shadowgraphs, Oil flows, and High-speed video.

### Aerodynamic Research Facility Specifications

Normally invisible shock waves are shown through a flow visualization technique using Schlieren photography to visualize the airflow field inside the facility. Some other tunnel specifications are as follows:

- Reynolds Number: 1 to 18 million per foot
- Stagnation pressure: 22 psia to 80 psia
- Dynamic pressure: 2 psia to 20 psia
- Stagnation temperature: Ambient to 200 F; normally 100 F
- Air storage: 6000 cubic feet at 515 psia and 100 F
- Vacuum storage: 42,000 cubic feet at 0.1 psia
- Run time: 60 to 90 seconds (transonic), 30 to 40 seconds (supersonic)
- Recharge time: 10 to 15 minutes (transonic), 15 to 20 minutes (supersonic)
- Run rate: 15 to 20 runs per eight-hour shift

- Angle of attack: -10 degrees to +10 degrees with added range provided by offset stings up to 90 degrees

#### Aerodynamic Research Facility Instrumentation

The facility has a 200 channel pressure scanning system capability. Forces and moments are measured by an internal, six-component, strain-gage balance.

#### Nozzle Test Facility

The Nozzle Test Facility is an air/nitrogen blow-down facility used to evaluate the performance of rocket engine nozzles. It features variable test chamber pressure using a two-stage ejector system and nozzle model exit diameters up to 10 inches.

##### Nozzle Test Facility Performance

- Nozzle core flow: 8 pounds per second at 25 psia to 350 psia, up to 350 F
- Test chamber pressure range: atmospheric to 0.05 psia
- Run time: 2 minutes to 3 minutes

##### Nozzle Test Facility Instrumentation

- Steady and unsteady pressure measurement
- Test cabin pressure and temperature
- Up to 50 model pressures
- Capable of calibrating load cells to measure thrust and side forces
- Calibrated venturi for nozzle mass flow
- Nozzle exit flows visualized with Schlieren instrument
- Industry quality data acquisition system with Internet connection

#### Water Flow Pump Test Loop Facility

The Water Flow Pump Test Loop Facility is a closed-loop water flow facility used for testing full-scale models of liquid rocket engine pumps.

##### Description

- Closed-loop water system with 10,000-gallon reservoir
- 350 horsepower motor
- Dissolved oxygen monitoring
- Flow meter and flow control quiet valve
- Steam coil heating in reservoir
- All stainless piping

##### Performance

- Flow rates up to 5,000 gpm
- Inlet pressure: 5 psia to 165 psia
- Discharge pressures up to 500 psia
- Motor shaft speed: 360 rpm to 3,600 rpm shaft
- Reservoir temperature: Ambient to 150 F

Instrumentation

Steady state data system is available for test article and facility pressure monitoring. Unsteady data is measured real-time and recorded with 1 Hz to 30 kHz bandwidths.

Water Flow Inducer Test Loop Facility

The Water Flow Inducer Test Facility is a closed-loop water flow facility used to test low head-rise liquid rocket engine pump components such as inducers. The loop can handle flow rates up to 2,000 gpm with discharge pressures up to 200 psia. A vacuum pump deaerates the water and allows running with inlet pressures as low as 4 psia.

Description

- 6-inch and 8-inch diameter pipe construction
- Closed-loop, continuous water flow system (~400 gallon total volume)
- 150 horsepower AC motor with 4:1 belt/pulley driveline
- Variable speed controller for continuous adjustment of speed
- Stainless steel 100-gallon inline accumulator/deaeration tank
- 50 horsepower stainless steel auxiliary centrifugal pump
- Air pressurization/vacuum system for loop pressure control
- Water temperature control by way of steam

Performance

- Shaft speed range: 1,000 rpm to 7,000 rpm (either direction)
- Flow rate range: 250 gpm to 3000 gpm
- Water temperature range: 60 F to 150 F
- Inlet pressure range: 1 psia to 100 psia
- Discharge pressure range: Atmospheric to 200 psia
- Power/Torque Range: 100 horsepower/100 foot-pounds maximum
- Deaeration: down to 3 ppm

Instrumentation

- PC-based data acquisition system
- 6-inch turbine type flow meter
- Pressures (low frequency)
- 50 channels in 1 psia to 65 psia range
- 20 channels in 1 psia to 250 psia range
- 28 analog tape high frequency channels
- 100 contact high-speed slip ring system with shaft encoder

Specialized instrumentation, including high-speed video/photo as required

Air Flow Turbine Test Facility

The Air Flow Turbine Test Facility is an air blow down system that discharges to the atmosphere through a turbine test article and backpressure control valve. The test facility provides experimental data and scientific studies of gas turbines. It is capable of controlling inlet total temperature, inlet total pressure, pressure ratio, delta pressure across the turbine rig, and turbine revolutions per minute.

## Final RFP NNM08125357R

### Description

- Airflow blow down system from 420 psia supply to atmospheric exhaust
- Stainless steel tunnel with two 6,000 cubic feet carbon steel storage tanks
- Closed-loop control of inlet pressure and temperature, pressure ratio and shaft speed
- Flow conditioning system consisting of wide-angle diffuser, honeycomb flow straightener, screens and sine law contraction
- 600 horsepower DC dynamometer with gearbox for power absorption and motoring
- Ambient or elevated air temperature control provided by in-line stainless steel tube bundles heated by an offline electric heater system

### Performance

- Shaft speed range: +/-14,000 rpm
- Inlet pressure range: 30 psia to 300 psia
- Inlet temperature range: 530 R to 830 R
- Torque range: +/-1,000 foot-pounds
- Power absorption/motoring capacity: 600 horsepower (900 horsepower transient)
- Inlet flow turbulence intensity: approximately 10 percent
- Test duration: 100 seconds to 20 minutes

### Instrumentation

- Subsonic mass flow venturi meters (2.1-inch and 3.4-inch diameter throats)
- Inline torque meter with 30, 500 and 1,000 feet-pound torque cartridges
- 512-channel PSI electronic pressure scanning system
- 240-channel low-level voltage input data system
- 6 channel remote control instrumentation positioning system
- 100 contact slip ring system for on-rotor measurements

Specialized instrumentation, including high-speed video/photo, as required

### Solid Rocket Motor Air Flow Facility

The Solid Rocket Motor Air Flow Facility is currently inactive, however, it is anticipated that this facility will be activated during the first year of this contract. The Air Flow Facility is a high-pressure blow-down system operating from a 1,900 pounds psig storage vessel and discharging to atmosphere through a solid rocket motor test article. The facility provides the full-scale Mach number and Reynolds number internal flow conditions for a 10 percent scale advanced solid rocket motor model. The facility can provide bore flow or mass injection through porous walls to investigate the effects on internal flow fields due to gimbaling a submerged nozzle, slot/port interactions, and other flow disturbances. The facility can also be configured for water flow testing.

### Description

- Airflow blow-down system from 1,890 psia supply to atmospheric exhaust
- Carbon steel tunnel with a supply tank farm of 9,100 cubic feet carbon steel storage tanks
- Model inlets up to 16 inches in diameter

### Performance

- Inlet pressure range: 600 psia to 1,200 psia
- Mass flow range: 20 pounds per second to 320 pounds per second
- Test duration: 30 seconds to 300 seconds

### Instrumentation

**Final RFP NNM08125357R**

- Sub-critical mass flow venturi meter
- 150 channel PSI electronic pressure scanning system
- 240-channel low-level voltage input data system
- Specialized instrumentation, such as pressure probes/rakes, as required

Final RFP NNM08125357R

ETF Test Chambers

CHAMBER	PRIMARY USE	VACCUUM PRESSURES	TEMPERATURES	THERMAL CONDITIONING	DIMENSIONS	PUMPING SYSTEM
V1	Optical Cleanliness	5 x 10 <sup>-7</sup> torr	Ambient to 180°C	IR Lamps	4 ft dia x 7 ft	Mechanical & Turbo
V2	Optical Cleanliness	5 x 10 <sup>-7</sup> torr	Ambient to 180°C	IR Lamps	4 ft dia x 10 ft	Mechanical & Turbo
V3	Thermal Vacuum	5 x 10 <sup>-8</sup> torr	-100 to 100°C	IR Lamps, LN2	4 ft dia x 10 ft	Mechanical & Diffusion
V4 & V8	Vacuum Bakeout	1 x 10 <sup>-6</sup> torr	Ambient to 175°C	IR Lamps	2 ft dia x 2.5 ft	Mechanical & Diffusion
V5	Thermal Vacuum	1 x 10 <sup>-6</sup> torr	-170 to 150°C	IR Lamps, LN2	3 ft dia x 4 ft	Mechanical & Diffusion
V6	Thermal Vacuum	1 x 10 <sup>-7</sup> torr	-170 to 150°C	IR Lamps, LN2	3 ft dia x 4 ft	Mechanical & Turbo
V7	Vacuum Bakeout	5 x 10 <sup>-7</sup> torr	-170 to 150°C	IR Lamps, LN2	8 ft dia x 10 ft	Mechanical, Cryogenic, & Turbo
V9	Vacuum Bakeout	1 x 10 <sup>-6</sup> torr	Ambient to 170°C	IR Lamps, LN2	4 ft dia x 7 ft	Mechanical & Turbo
V10	Life Cycle	5 x 10 <sup>-8</sup> torr	Ambient	N/A	1.5 ft dia x 1.5 ft	Mechanical & Ionization
V11	Launch Simulation	1 x 10 <sup>-6</sup> torr	-240 to 340°C	IR Lamps, LHe	4 ft dia x 10 ft	Mechanical & Turbo
RAC1	Launch Simulation	Plenum			4 ft dia x 10 ft	Mechanical & Turbo
Bell Jar	Vacuum Effect Demo	1 x 10 <sup>-6</sup> torr	-100 to 100°C	IR Lamps, LN2	1.5 dia ft x 2 ft	Mechanical & Turbo
V15 (Under Construction)	Thermal Vacuum	1 x 10 <sup>-7</sup> torr	-170 to 180 °C	IR Lamps, LN2	12 ft dia x 15 ft	TBD
Sunspot	Thermal Vacuum	1 x 10 <sup>-6</sup> torr	-170 to 200°C	IR Lamps, LN2	10 ft dia x 12 ft	Mechanical, Cryogenic, & Turbo
V20	Thermal Vacuum	1 x 10 <sup>-6</sup> torr	-170 to 200°C	IR Lamps, LN2	20 ft dia x 28 ft	Mechanical, Cryogenic, & Turbo
TH1 TH2 TH3 TH5 TH6 TH7 & TH8	Thermal Humidity	Ambient	-70 to 190°C	Electrical resistive and refrigeration	4 x 4 x 4 ft	
TH4	Thermal Humidity	Ambient	-70 to 160°C	Electrical resistive and refrigeration	4 x 5 x 4 ft	
V14	Vacuum Bakeout	1 x 10 <sup>-6</sup> torr	Ambient to 150°C	IR Lamps	12 x 8 ft	Mechanical & Turbo

**Final RFP NNM08125357R**

TA1	Thermal Altitude	Ambient to 100,000 ft	-70 to 190°C	Electrical resistive and refrigeration	4 x 4 x 4 ft	
TA2	Thermal Altitude	Ambient to 150,000 ft	Ambient to 200°C	Electrical Resistive	1.5 x 2 x 1.5 ft	
TA3	Thermal Altitude	Ambient to 200,000 ft	Ambient to 200°C	Electrical Resistive	1 x 1.5 x 1 ft	
TH9	Thermal Humidity	Ambient	-40 to 240°C	Electrical resistive and refrigeration	2.5 x 2.5 x 3 ft	
Salt Fog (Under Construction)	Corrosive Age	Ambient	TBD	TBD	4 x 4 x 8 ft	
RAC2 (Under Construction)	Launch Simulation	TBD	TBD	TBD	TBD	TBD

### **III. WBS Element 2.3 Structural Test Support**

#### **Load Test Annex (LTA) Crosshead, Bldg 4619:**

The primary feature of the central high bay is a 169-ft by 161-ft by 155-ft load reaction facility with a 60-ft by 75-ft access door and a massive 55-ft by 55-ft concrete test floor below a moveable load reaction crosshead. The crosshead is adjustable in height from 40-ft to 115-ft in 5.5 inch increments. Loads of 30 million lbf vertically and 2.4 million lbf laterally can be reacted in the facility. The facility includes overhead bridge cranes for test article and materials handling.

#### **Load Test Annex Extension (LTAE) East High Bay, Bldg 4619:**

The east high bay is a 95-ft by 203-ft by 97-ft bay area with a 40-ft by 40-ft access door and a massive 70-ft by 160-ft concrete test floor. Reaction load plates, 400,000 lbf tension and 45,000 lbf shear per plate, are symmetrically affixed to the test floor on 10-ft centers. The facility includes overhead bridge cranes for test article and materials handling. The highbay floor area is used for material staging, fabrication and buildup activities, and test operations. Within the high bay area there are three universal self reacting load structures with the following capabilities:

- 20ft Universal Test Frame, Bldg 4619: This self-reacting load structure is used for medium to large scale static structural loads testing. The interior dimension of the structure is approximately 20-ft by 20-ft by 20-ft. The structure has a single point load capacity of approximately 100,000 lbf.
- 10ft Generic Test Cube, Bldg 4619: This self reacting load structure is used for small to medium scale static structural load testing. The interior dimension of the structure is approximately 10-ft by 10-ft by 10-ft. The structure has a single point load capability of 50,000 lbf. Approximate number of tests performed in the last 3 years:
- Multi Purpose Test Fixture, Bldg 4619: This load reaction structure is used for small scale and bench-top style static structural load testing. The interior dimension of the structure is approximately 7-ft by 5-ft by 6-ft. The structure has a single point load capability of 25,000 lbf.

#### **120 klb SATEC Tensile Test Machine, Bldg 4619:**

This tensile test machine accommodates small components and specimens. The column width is 33.5 inches with adjustable height to 60 inches. Load ranges 2.4 k, 6 k, 24 k and 120 k lbf in uni-axial tension or compression.

#### **260 klb Instron Tensile Test Machine, Bldg 4619:**

This tensile test machine accommodates small components and specimens. The column base is 4 ft x 4 ft with adjustable height to 112 inches. The load range is 260,000 lbf in uni-axial tension or compression with variable speed controller for positioning crosshead.

2M lbf Tensile Test Machine, Bldg 4619:

This tensile test machine accommodates smaller test components and specimens. The column base is 2 ft x 2 ft with adjustable height to 12 ft minus load cell height. This machine has 2 million lbf load capability in uni-axial tension or compression.

Gilmore Tensile Test Machine, Bldg 4619:

Gilmore Tensile Test Machine, Bldg 4619: This tensile test machine can accommodate mid-size structures up to 10-ft x 10-ft x 25-ft. Actual load capability to 2 million lb in uniaxial tension or compression to failure (shock) and 3 million lbf in uniaxial tension or compression without failure (no shock).

Cryogenic Structural Test Facility, Building 4699:

Cryogenic Structural Test Facility, Building 4699: This facility is located in the MSFC propulsion test area and provides cryogenic simulation, structural strength test, and pressurization test capability in a remote area controlled for hazardous test operations. This facility can be utilized whenever hazards associated with structural test operation preclude testing at Building 4619. Test article dimensions up to 33-ft diameter and 60-ft tall can be accommodated. A load reaction structure that is compatible with load application systems is in place for tensile, compression, moment, and shear loads.

Vibration Test Facility, Bldg. 4619 East Side:

The Vibration Test Facility, Bldg. 4619 East Side has 4 electromagnetic shakers with force inputs up to 40,000 lbf. All vibration modes (sine, random, sine-on-random, burst, chirp, etc.) are available. 36 channels of accelerometer signal conditioning, 64 channels of recording capability. 80 dB dynamic range, real time 32 channel control. Shaker head expanders allow test article mounting surfaces up to 5-ft by 5-ft. Variety of accelerometers with measurement capabilities up to 5000 g's.

Vibration Test Facility, Bldg. 4619 West Side:

The Vibration Test Facility, Bldg. 4619 West Side has 4 electromagnetic shakers with force inputs up to 40,000 lbf. All vibration modes (sine, random, sine-on-random, burst, chirp, etc.) are available. 84 channels of accelerometer signal conditioning, 96 channels of recording capability. 80 dB dynamic range, real time 32 channel control. Shaker head expanders allow test article mounting surfaces up to 5-ft. by 5-ft. Variety of accelerometers with measurement capabilities up to 5000 g's.

Pyroshock Test Facility, Bldg. 4619:

The Pyroshock Test Facility has pyrotechnic explosives capable of generating up to 30,000 g's SRS & 20,000 Hz, with shock accelerometers capable of measuring up to 50,000 g's. Chamber size is 1200 ft<sup>2</sup>. 16-channel data acquisition system is capable of time domain and SRS analysis.

Anechoic Acoustic Test Facility, Bldg. 4619:

The Anechoic Acoustic Test Facility is a 3000 ft<sup>3</sup> anechoic chamber which is quieter than NC-40 requirement, up to 8 microphone and 32 accelerometer channels available for recording and analysis.

Reverberation Acoustic Test Facility, Bldg. 4619:

The Reverberation Acoustic Test Facility is a 5000 ft<sup>3</sup> concrete reverberation chamber capable of providing up to 2000 acoustic Watt input, 172 dB overall (OA) sound pressure level (SPL) in progressive wave tube and 164 dB OA SPL in diffuse field. Test articles up to 500 ft<sup>3</sup> can be placed in the diffuse field. Electromagnetic drivers are available for noise levels up to 139 dB OA SPL. Up to 8 microphone multiplex control and 32 accelerometer response channels are available for recording and analysis. Control tolerances are +/- 2 dB OA between 50-10,000 Hz.

Modal Test Facility, Building 4619:

The Modal Test Facility contains shakers and impulse hammers with input forces of up to 1000 lbs can be applied to test articles. At least 755 structural test array accelerometers, measurement range 2-1000 Hz. Simultaneous acquisition and time averaging of up to 260 channels of force input and acceleration response is available. Non-contact optical measurement techniques such as modal holography, electronic speckle pattern interferometry (ESPI), and laser vibrometry are also available for test articles of various sizes, configurations, and bandwidths.

Structural Dynamic Test Facility, Building 4550:

The Structural Dynamic Test Facility, Building 4550 is 360 feet tall; 15 levels (24 ft/level), max overall height 425 ft with 16-ton crane. Facility upgrades such as electrical power and platform removal are in planning phases, as well as refurbishment of four hydrodynamic supports to simulate free-free boundary conditions of full-scale launch vehicle. Shakers and instrumentation as described in the Modal Test Facility can be moved to this building.

**IV. WBS Element 2.4 Fabrication and Assembly of R&D Space Flight and Associated Hardware**

The following list is a summary of equipment (excluding many various hand tools) currently utilized to accomplish work in the fabrication services area. The actual equipment at contract start may slightly vary due additions or excessing during RFP. The Contractor shall verify this list during phase-in. Computer numerical controlled equipment is noted with an asterisk (\*).

1. Metal Working Lathes:

*Binns & Berry	33.4" Swing, 22'L x 6'H x 6'W
Bridgeport (1)	ROMI Tormax 13-5
Leblond	36-inch Swing, Broken Bed
Leblond	21-inch Swing, Hollow Spindle
*Mazak	Universal, 14'L x 8'H x 4'W
*Mazak	Slant Turn
Monarch (4)	10-inch Swing, EE Models, Precision
Monarch (6)	6" – 48" Swing
Sidney	14-inch Swing, Heavy Duty
Turrett America (AML) (4)	8-inch Swing, Finishing Lathe

Final RFP NNM08125357R

2. Milling Machines:
  - Bridgeport (6) Vertical Spindle Knee Mills
  - Giddings & Lewis Horizontal Boring Mill, Model 65-E4-T-3X
  - Giddings & Lewis (2) Horizontal Boring Mills, Model 70-D3-T
  - Kearney & Trecker Horizontal Spindle Knee Mill, Model TF-20
  - Kearney & Trecker (1) Horizontal Spindle Knee Mills, Model S-12
  - Kearney & Trecker (2) Vertical Spindle Knee Mills, Model TF-16
  - Lagun (2) Vertical Spindle Knee Mills
3. Precision Jig Bores:
  - Moore (4) Model No. 2
  - Pratt & Whitney Model 2E
  - Pratt & Whitney Model 3E
  - Pratt & Whitney Model 4E
4. EDM Machines:
  - \*Elox EDM plunge
  - \*Mitsubishi (3) 4-axis Wire, EDM
  - \*Mitsubishi Sinker
  - Mitsubishi ED2000M Hole Popper
5. Radial Arm Saws:
  - DoAll (2) Model 1613-2
  - DoAll Model 2013
  - Marvel Model 24/E1/E3
  - Marvel Model 8/M1
6. Rotary Saws:
  - Hendrick Traverse Skill Saw
  - Trenn Jaeger Model LKH 310/4500
7. Radial Arm Drill:
  - Carlton 8-inch arm; 19-inch circumference
8. Power Hacksaws:
  - Marvel Series 24
  - Peerless Model M14-520
  - W.F. Wells Hacksaw
9. Tube Flaring/Bending:
  - Lakeland Tube Bending, Model 848
10. Flex High Pressure Hose Fabrication:
  - Aero-Quip Aero-Quip Flex Hose Crimper
  - Resis-T-Oflex Resistoflex Hose Crimper

Final RFP NNM08125357R

11. Fabricators (Metal):  
Strippitt  
Wales  
Strippitt Super 30-40HD  
10-AA Fabricator Model 987
12. Metal Rolls:  
Buffalo  
Wysong  
Model #2 BR  
Model 8-48, 12-14 gauge
13. Iron Worker:  
Mubea  
Universal Iron Worker
14. Metal Press Brake:  
Accurpress  
Accurpress  
Clausing  
Model 725014, 14' bed, 250 ton  
Model 7606, 6' bed, 60 ton  
Allsteel Model 20-4
15. Metal Shears:  
Cincinnati  
Pacific  
Model 1412, 168" x 3/16"  
Model 625 A14 14'
16. Contour Projectors:  
Ex-Cello  
Model 30
17. Vertical Turing Lathes:  
Giddings & Lewis  
Giddings & Lewis  
48-inch diameter Table  
144-inch diameter Table
18. Tool Grinders:  
Cincinnati  
Universal MONOSET Tool Sharpener
19. Precision Grinders:  
Brown & Sharpe  
Brown & Sharpe  
Brown & Sharpe  
Moore  
Thompson  
Thompson  
Surface Grinder  
No. 1 Universal Cylinder Grinder  
Universal Cylinder Grinder  
Ultra Precision Jig Grinder  
6 ft. x 3 ft. Surface Grinder  
Surface Grinder
20. Disc Sanders:  
Standard  
State  
Wysong  
Disc Sander, Model 100  
D16  
Disc Sander, Model 309
21. Hydraulic Presses:  
Dake  
Lake Erie  
Wilson  
Hydraulic Presses, Model 5-075  
Hydraulic Press, S/N 3227  
Hydraulic Press, Model 37FMDI  
75 ton
22. CNC Machines:  
\*Bridgeport  
\*Bridgeport  
\*Cincinnati  
EZ-Trak Plus Vertical Mill  
EZ-Trak DKII Vertical Mill  
5-axis, 20 V

**Final RFP NNM08125357R**

- |                            |  |
|----------------------------|--|
| *Cincinnati                | 5-axis, 30 V   |
| *Cincinnati (2)            | 3-axis, Saber  |
| *Cincinnati (3)            | 3-axis, Arrow  |
| *Fadal Engineering Co. (2) | 3-axis, Machining Center, VMC4020HT 17.5" x 17.5" x 29.5"                    |
| *Fadal Engineering Co.     | 4-axis, Machining Center. VMC4020HT 17.5" x 17.5" x 29.5"                    |
| *Giddings & Lewis          | 3-axis, 120" x 48"   |
| *Giddings & Lewis          | 5-axis, Horizontal Boring Mill   |
| *Hitachi Seiki             | 2-axis, Turning Center, 8 ¼" Dia. x 15"                                      |
| *Kearney & Trecker         | 3-axis, 168" x 50" x 18"   |
| *Onsurd                    | 3-axis, Skin Mill, 330" x 120" x 18"   |
| *Fadal                     | 3-axis, VMC 6030 HT  |
| <br>                       |  |
| 23.                        | <u>Computer Equipment:</u>   |
|                            | Intergraph TD425 CAD   |
|                            | Zebra (3) Label Printer  |
| <br>                       |  |
| 24.                        | <u>Optical Alignment/QA Equipment:</u>                                       |
|                            | Brunson Instrument (7) Transit Jig   |
|                            | Brunson Instrument Sight Level   |
|                            | Brunson Instrument (15) Instrument Stands up to 10'                          |
|                            | Hilger & Watts (4) Clinometers   |
|                            | Keuffel & Esser (5) Optical Alignment Stands                                 |
|                            | Keuffel & Esser (4) Level Sight  |
|                            | Keuffel & Esser (1) Transit Surveying  |
|                            | Kollmorgen Corp. (5) Instrument Stands with traverse                         |
|                            | Kollmorgen Corp. (2) Autocollimator  |
|                            | Leica Mancat Coordinate System   |
|                            | Leica (2) Instrument Stands  |
|                            | Leica DL2 Laser  |
|                            | Toriod Corp. (2) Indicator/Controller  |
|                            | Wild Heerbrugg (3) Theodolites   |
|                            | Wild Heerbrugg (2) Level High Precision                                      |
|                            | Hexagon Metrology LTD840 Laser Tracker                                       |
| <br>                       |  |
| 25.                        | <u>Precision Measuring Equipment</u>   |
|                            | Mitutoyo (2) Coordinate measuring machine                                    |
|                            | Giddings & Lewis Profile measurement system                                  |
|                            | TESA White light measuring system  |
|                            | Kodak (2) Optical Computer   |
|                            | Excello Optical Computer   |
|                            | Brown & Sharpe (2) Micro-Hite electronic height gage                         |
|                            | Rockwell (2) Hardness tester   |
|                            | Space Electronics Mass properties machine                                    |
|                            | Snap-On Torque wrench calibrator   |
|                            | TESA Precision distance measuring system                                     |
| <br>                       |  |
| 26.                        | <u>Welding Equipment:</u>  |
|                            | Airline Automatic (2) Longitudinal welders, 54 and 80 inches and weld length |

Final RFP NNM08125357R

Aronson	Rotary Weld Positioner, 10,000 lb. capacity
Hamilton Standard Hamilton/Zeiss	High Vacuum Electron Beam Welding High Vacuum Electron Beam Welding System 75 KVA
Lincoln Electric	Pro-cut 125, Portable Plasma Cutter w/maximum capacity of 1.25" of steel.
Linde	Metal shape cutting machine equipped with both plasma arc and oxyacetylene cutting torches
Linde L-Tec	GTA weld equipment
Miller Sync-A-Wave (4)	GTA weld equipment, Square Wave enabled for mixing of polarities, water-cooled on a mobile cart w/50' power cord.
Peer Equipment Sciaky	Resistance Spot Welder 20 KVA Vertical/Horizontal manipulator, vertical travel 0' to 13'/horizontal travel 0' to 11'
Miller Arrow Wave	Inverter based variable polarity
27. <u>Heat Treatment Equipment:</u>	
ABAR	Vacuum brazing furnace, 24" x 36"; heat range of 1000-2250 degrees F, with vacuum 10-6
Grieve Hendry	Drying oven, heat range 100-350 degrees F; 5' x 5' x 6.5'
Lindberg - Car Bottom	Furnace, 130" deep x 70" high x 97" wide; heat range 100-2000 degrees F, with exothermic atmosphere
Lindberg	Furnace, 18" high x 24" wide x 72" long; heat range 100 degrees F, with endothermic atmosphere
Lindberg - Cyclone	Furnace, 36" high x 51" wide x 79" deep; heat range 100-1600 degrees F, with air atmosphere
Lindberg	Endothermic gas generator capable of producing 1250 cu./ft. of gas
Lindberg	Oil quenching capability is cooled by heat exchanger and will quench material 6' in diameter and 12' deep
Vacuum Industries, Inc.	Vacuum/partial/nonvac, heating capabilities Range to 2900F, hydrogen atmosphere capable, quick cooling w/use of argon backfill w/internal fan
28. <u>Surface Treatment Equipment:</u>	
Acme	Chilling Unit for type III anodizing solution
ADF (2)	Pressure Washer Cabinet
Aerojet Tech Systems Co.	Approximately 22 large and 37 small processing tanks with chemical solutions for various processes, such as, cleaning for welding and painting, chromate conversion coating, phosphating, passivation, and degreasing. Tank sizes range from 5' wide x 10' deep x 24' long to 4' wide x 5' deep x 8' long. The electroplating area consists of electroless nickel; anodizing type II, and

Final RFP NNM08125357R

- |             |   |
|-------------|---|
| Branson (2) | III; red, black, green, yellow, and gold dyes for anodize type II.    |
| Bendix      | Vapor Degreaser   |
| Landa       | Ultrasonic Generator Cleaner  |
| MSFC        | Pressure Washer (Gas)   |
| Selectron   | Cleaning Console  |
| Silicon     | Brush Plating Equipment   |
| Vertrod     | Rectifiers with operating ranges of 0 to 50A and 0 to 1000A DC output |
|             | Heat sealers, impulse type, (4) 24", (3) 48", and (2) 60" long        |
| 30.         | <u>Blasting Equipment:</u>  |
|             | Empire  |
|             | Vacu-Blast  |
|             | Zero Blast-n-Peen (2)   |
|             | Grid Blast  |
|             | Sandblast Equipment   |
|             | B4760 Sandblast Room, 10' x 15'                                       |
|             | Glass Bead Peening Machine  |
|             | Glass bead (4'x4')  |
| 31.         | <u>Buffing Equipment:</u>   |
|             | Hammond   |
|             | Hammond   |
|             | Hammond (2)   |
|             | Buffing Machine with variable speed                                   |
|             | Belt Sander   |
|             | Buffing Machine with single speed                                     |
| 32.         | <u>Material Handling Equipment:</u>                                   |
|             | 4500 lb. forklift (short prong)                                       |
|             | 8860 lb. forklift   |
|             | 4680 lb. forklift   |
|             | 3600 lb. Clark Electric Forklift                                      |
|             | 400 lbs. Genie lift   |
|             | 20 ton cranes   |
|             | Various lifting slings and spreader bars (up to #15,000)              |
|             | 1/2 T Pickup Truck  |
|             | 1 T Flatbed Truck   |

**V. WBS Element 2.5 Electrical Fabrication, Test and Assembly**

The following list is a summary of equipment (excluding many various hand tools) currently utilized to accomplish work in the electrical fabrication and test area. The actual equipment at contract start may slightly vary due additions or excessing during RFP. The Contractor shall verify this list during phase-in. Computer numerical controlled equipment is noted with an asterisk (\*).

Electronic Fabrication

Daniels	Wire Crimp Pull Test Machine
Dillion	Wire Crimp Pull Test Machine
MSFC Work Stations	Work Station Console, 30" x 72"; variable voltage control, 6 magnifier lights, 3 Leica microscopes
Pace (4)	De-soldering Tool
Plato (4)	Tinning Pot
Strip Master	Wire Stripper
Thomas & Betts Co.	Hi-Ring Swaging Tool

## Final RFP NNM08125357R

Westinton	10K Environmental Station
Olympus (2)	Scopes with digital camera
CCR Co.	Conformal Coating Removal Workstation
Pro-Con Technologies	Mini Solder Wave
Aqueous	Batch Cleaner
Essemtec FLX2010	Automatic Pick & Place Machine
Essemtec	SP200AV Stencil Printer
BGA Placement/Rework Station	APE Sniper III
Vapor Phase Reflow System	R&D Technical Service RD-1
Vapor Degreaser	Baron Blakeslee MVR-215
Hirox BGA/SMT	Inspection System
Fancourt Lead Formers (2)	Model F1B/1 with die #'s FA4067 & FA4064
Conformal coating spray booths (2)	
Torroid winders	
Hydraulic connector contact crimper	Thomas & Betts
Pneumatic connector contact crimper	

### Test Equipment

Automated Cable Test System	Schaffner W443
Discrete Component Test System	Testronics 201C
RLC Digibridge	Gen Rad 1689
Digital Test System	HP 82000
Digital Phosphor O-Scope	Tektronix TDS 5054
Slaughter Hipot Test Systems	
Programmable QuadTech Megohmmeters	
Clinton High Frequency Spark Tester	
Thermal Cycling Chambers	
Anatech Continuity Monitors	
National Instruments Data Acquisition System	
Information Scan Tech (IST) Operational Amplifier & Voltage Comparator Test Module	

## VI. WBS Element 2.6 Reserved

## VII. WBS Element 2.7 Space Environmental Effects Testing

The Space Environment Effects Facility personnel study materials' behavior in the space environment. Laboratory capabilities include simulation of orbital atomic oxygen, UV radiation, electron and proton radiation, plasma, thermal vacuum, meteoroid and space debris impacts, dust and rain impacts, and hydrodynamic code analysis. The combined environment effects test system has the capability of exposing materials to protons, low- and high-energy electrons, near-ultraviolet (NUV) radiation, and vacuum ultraviolet (VUV) radiation, either simultaneously or sequentially, then measuring reflectance in vacuum. Plasma propulsion techniques are analyzed using the Marshall Magnetic Mirror system. Data from ground simulations of the space environment is combined with results from various flight experiments to determine the optimum materials for use on spacecraft.

The SEE team studies all types of materials used in spacecraft: metals, ceramics, polymers, composites, optics, lubricants, adhesives, thermal control coatings, visual aids, solar cells, insulation, solar sail thin films, etc. These materials must maintain desired mechanical, optical, and electrical properties in the harsh environment of space. Flight experiment studies such as

## Final RFP NNM08125357R

LDEF (Long Duration Exposure Facility), the Passive Optical Sample Assembly (POSA) - I experiment, and the Materials on International Space Station Experiment (MISSE) are used to improve our understanding of space, especially the synergistic effects between all elements of the environment.

The Materials Contamination Team is responsible for establishing contamination control during all phases of hardware development, including design, manufacturing, assembly, test, transportation, launch site processing, on-orbit exposure, return, and refurbishment. The team's mission is to reduce the risk of component/hardware failure due to molecular contamination, particulate contamination, or foreign object debris. Contamination is a concern in the Space Shuttle with sensitive bondlines and reactive fluid (liquid oxygen) compatibility as well as for spacecraft with sensitive optics such as space telescopes.

The Materials Contamination Laboratory has a variety of facilities and instrumentation capable of contaminant detection, identification, and monitoring. State-of-the-art inspection techniques currently being used include optically stimulated electron emission (OSEE); near infrared (NIR) spectroscopy utilizing fiber optics; Fourier transform infrared (FTIR) spectroscopy; ultraviolet (UV) fluorescence; and x-ray fluorescence. Inspection instrumentation is evaluated for capability to detect contaminants (silicone, hydrocarbons and fluorocarbons) on a variety of material substrates (metallics, composites, optics, etc.). The team of engineers and technicians also develop contamination calibration standards, evaluate new surface cleanliness inspection technologies, and analyze enhanced deposition of contaminants in the presence of UV radiation. Databases are maintained by the team for process materials as well as outgassing and optical compatibility test results for specific environments.

### FACILITIES AND MAJOR EQUIPMENT BUILDING LOCATIONS

#### **4200 Area**

4205, 4210

#### **4400 Area**

4464, 4487

#### **4600 Area**

4600, 4605, 4610, 4612, 4618, 4619, 4620, 4623, 4628, 4656

#### **4700 Area**

4702, 4704, 4705, 4707, 4708, 4711, 4712, 4755, 4760, 4777

**ATTACHMENT J-10**

**SAFETY, HEALTH & ENVIRONMENTAL (SHE) PLAN**

The approved Safety, Health and Environmental (SHE) Plan, dated (To be completed at contract award) and submitted with the Contractor's proposal, and any subsequent approved revisions during the term of this contract, is hereby incorporated into the contract by reference, with the same force and effect as if it were given in full text.

**ATTACHMENT J-11 (Reference Clause H.15)**

**SAFETY & HEALTH MANAGEMENT IMPLEMENTATION GUIDE AND ASSESSMENT MATRIX**

Score	Commitment and Involvement (Element 1)		Worksite System and Analysis (Element 2)	Hazard Prevention and Control (Element 3)	Safety and Health Training (Element 4)
	A. Management	B. Employee			
10	Benchmarking indicates “best in Class.” In areas of visible management leadership, responsibility/accountability, meaningful metrics, and incentive/recognition systems.	Employees fully involved, safety committees functioning well, is a complete behavior process functioning at least one year, employees involved in process planning and risk assessment.	All subelements fully in place and functioning well for at least one year.	All programs and subelements fully functioning for one year. Strong professional support.	All training processes functioning, all levels of personnel trained to identified needs, management training ongoing.
9	All subelements are in place and functioning well, but have as yet to reach full maturity.	All processes functioning but for limited time, employees involved to great extent.	All subelements in place, employees actively participating.	All programs and subelements in place and functioning.	All training processes established, management initial training complete.
8	One subelement not fully in place but all are being implemented.	Most processes in place, employee involvement growing.	All subelements functioning, employee participation growing.	At least five subelements functioning and one in final stage of implementation.	Most personnel trained to identified needs, training recordkeeping and recall system functioning.
7	Two subelements not fully implemented. Implementation in process on all elements. Employee participation and commitment widespread.	Process activities expanding through organization. Committees and teams functioning.	At least five subelements functioning and remainder established.-	At least four subelements functioning, remaining two developing.	Management and supervisor training in process; specialized training in process.
6	All subelements in process or in place. Strong management leadership and	Employee representatives functioning, joint committees	At least four subelements functioning and remaining three	Medical and safety programs strengthening.	Management training in process developed,

**Final RFP NNM08125357R**

Score	Commitment and Involvement (Element 1)		Worksite System and Analysis (Element 2)	Hazard Prevention and Control (Element 3)	Safety and Health Training (Element 4)
	A. Management	B. Employee			
	commitment began, metric systems in place, resourcing appropriate.	functioning, participating in risk assessment and accident investigation.	in process, employee participation beginning to spread through organization.	Emergency preparedness program established and exercised.	supervisor training developed, training recordkeeping and recall system developed.
5	Management commitment and leadership accepted by workers, worker participation and commitment begun, metric system.	Employee representatives appointed/elected, committees beginning to perform functions (investigation, analysis, process improvement).	All subelements established, employees beginning to participate.	Rules written, medical and safety programs developing Personal Protective Equipment adequate.	Training template completed for all personnel, training needs identified, process development begun, recordkeeping and recall system being developed.
4	Management commitment and leadership flowing down to workers, metric systems being developed, incentive/recognition system in process.	All processes being established, involvement and awareness enhancement growing.	At least five subelements initiated including self-assessment, hazard reporting, mishap close call investigations.	Rules in process, emergency preparedness program being developed.	Training development in process, specialized training established. Mandatory training in process
3	Generally good management commitment and leadership, implementation plans approved for all elements	All process needs identified, awareness and involvement enhancement activities begun.	Job Hazard analysis established, investigations strengthened and include employee	Medical program initiated, safety and health program initiated.	Training needs evaluation complete, training templates in process, recordkeeping and recall system needs to be established
2	Management exhibits some aspects of leadership, accountability systems not well	Committees established, little activity, employee involvement beginning,	Plans established to implement all subelements, at least two subelements	Personal protective equipment requirements established and being enforced,	Training needs evaluation begun, training template forms developed.

**Final RFP NNM08125357R**

Score	Commitment and Involvement (Element 1)		Worksite System and Analysis (Element 2)	Hazard Prevention and Control (Element 3)	Safety and Health Training (Element 4)
	A. Management	B. Employee			
	defined, employee participation framework defined, limited metrics.	awareness of process started.	beginning to function.	plans developed for other elements.	
1	Subelements have not been established to any significant extent, management leadership is lacking, little or no employee participation	No committees, little or no employee involvement, no process, little process planning.	Two or fewer subelements established, no self-inspection, shallow accident investigation process.	Few or no programs or subelements established, few written rules, limited enforcement.	Training needs not established, no management training, limited or no supervisor training.

**ATTACHMENT 12**

**(RESERVED)**

**ATTACHMENT 13**

**(RESERVED)**

**ATTACHMENT 14**

**(RESERVED)**

**ATTACHMENT 14**

**(RESERVED)**

**Final RFP NNM08125357R  
Attachment J-15**

WD 2005-2008 (Rev 7) was first posted on 06/05/2007

\*\*\*\*\*

REGISTER OF WAGE DETERMINATIONS UNDER  
THE SERVICE CONTRACT ACT  
By direction of the Secretary of Labor

U.S. DEPARTMENT OF LABOR  
EMPLOYMENT STANDARDS ADMINISTRATION  
WAGE AND HOUR DIVISION  
WASHINGTON D.C. 20210

William W.Gross                      Division of  
Director                              Wage Determinations

Wage Determination No.: **2005-2008**  
Revision No.: **7**  
Date Of Revision: **05/29/2007**

States: **Alabama**, Tennessee

Area: Alabama Counties of Colbert, Franklin, Jackson, Lauderdale, Lawrence,  
Limestone, **Madison**, Marion, Marshall, Morgan, Winston  
Tennessee Counties of Giles, Lawrence, Lincoln, Moore, Wayne

\*\*Fringe Benefits Required Follow the Occupational Listing\*\*

OCCUPATION CODE - TITLE	MINIMUM WAGE RATE
<b>01000 - Administrative Support And Clerical Occupations</b>	
01011 - Accounting Clerk I	13.47
01012 - Accounting Clerk II	14.65
01013 - Accounting Clerk III	16.77
01020 - Administrative Assistant	21.27
01040 - Court Reporter	17.16
01051 - Data Entry Operator I	11.66
01052 - Data Entry Operator II	13.89
01060 - Dispatcher, Motor Vehicle	16.31
01070 - Document Preparation Clerk	12.47
01090 - Duplicating Machine Operator	12.47
01111 - General Clerk I	10.80
01112 - General Clerk II	11.78
01113 - General Clerk III	13.86
01120 - Housing Referral Assistant	19.14
01141 - Messenger Courier	9.49
01191 - Order Clerk I	11.49
01192 - Order Clerk II	15.27
01261 - Personnel Assistant (Employment) I	13.56
01262 - Personnel Assistant (Employment) II	15.15
01263 - Personnel Assistant (Employment) III	16.41
01270 - Production Control Clerk	19.18
01280 - Receptionist	11.02
01290 - Rental Clerk	11.79
01300 - Scheduler, Maintenance	15.32
01311 - Secretary I	15.32
01312 - Secretary II	17.16
01313 - Secretary III	19.14
01320 - Service Order Dispatcher	13.83
01410 - Supply Technician	21.27
01420 - Survey Worker	16.81
01531 - Travel Clerk I	10.03
01532 - Travel Clerk II	10.62
01533 - Travel Clerk III	11.32
01611 - Word Processor I	12.34
01612 - Word Processor II	13.77
01613 - Word Processor III	16.31

05/29/2007

**Final RFP NNM08125357R  
Attachment J-15**

<b>05000 - Automotive Service Occupations</b>	
05005 - Automobile Body Repairer, Fiberglass	17.50
05010 - Automotive Electrician	16.73
05040 - Automotive Glass Installer	15.94
05070 - Automotive Worker	15.94
05110 - Mobile Equipment Servicer	14.45
05130 - Motor Equipment Metal Mechanic	17.50
05160 - Motor Equipment Metal Worker	15.94
05190 - Motor Vehicle Mechanic	15.98
05220 - Motor Vehicle Mechanic Helper	12.52
05250 - Motor Vehicle Upholstery Worker	15.22
05280 - Motor Vehicle Wrecker	15.94
05310 - Painter, Automotive	15.28
05340 - Radiator Repair Specialist	15.94
05370 - Tire Repairer	12.75
05400 - Transmission Repair Specialist	17.50
<b>07000 - Food Preparation And Service Occupations</b>	
07010 - Baker	10.84
07041 - Cook I	9.14
07042 - Cook II	10.27
07070 - Dishwasher	7.57
07130 - Food Service Worker	8.09
07210 - Meat Cutter	13.34
07260 - Waiter/Waitress	6.82
<b>09000 - Furniture Maintenance And Repair Occupations</b>	
09010 - Electrostatic Spray Painter	17.56
09040 - Furniture Handler	13.94
09080 - Furniture Refinisher	17.56
09090 - Furniture Refinisher Helper	14.41
09110 - Furniture Repairer, Minor	15.98
09130 - Upholsterer	17.56
<b>11000 - General Services And Support Occupations</b>	
11030 - Cleaner, Vehicles	8.48
11060 - Elevator Operator	8.06
11090 - Gardener	12.11
11122 - Housekeeping Aide	8.62
11150 - Janitor	8.06
11210 - Laborer, Grounds Maintenance	10.00
11240 - Maid or Houseman	7.48
11260 - Pruner	8.72
11270 - Tractor Operator	12.08
11330 - Trail Maintenance Worker	10.00
11360 - Window Cleaner	8.24
<b>12000 - Health Occupations</b>	
12010 - Ambulance Driver	14.33
12011 - Breath Alcohol Technician	14.33
12012 - Certified Occupational Therapist Assistant	19.60
12015 - Certified Physical Therapist Assistant	19.60
12020 - Dental Assistant	13.91
12025 - Dental Hygienist	20.44
12030 - EKG Technician	21.13
12035 - Electroneurodiagnostic Technologist	21.13
12040 - Emergency Medical Technician	14.33
12071 - Licensed Practical Nurse I	13.71
12072 - Licensed Practical Nurse II	15.40
12073 - Licensed Practical Nurse III	17.25
12100 - Medical Assistant	10.79
12130 - Medical Laboratory Technician	14.02
12160 - Medical Record Clerk	11.28
12190 - Medical Record Technician	13.60

05/29/2007

**Final RFP NNM08125357R  
Attachment J-15**

12195 - Medical Transcriptionist	12.65
12210 - Nuclear Medicine Technologist	30.65
12221 - Nursing Assistant I	9.11
12222 - Nursing Assistant II	10.25
12223 - Nursing Assistant III	11.18
12224 - Nursing Assistant IV	12.55
12235 - Optical Dispenser	13.68
12236 - Optical Technician	10.36
12250 - Pharmacy Technician	12.24
12280 - Phlebotomist	12.55
12305 - Radiologic Technologist	22.63
12311 - Registered Nurse I	21.81
12312 - Registered Nurse II	26.70
12313 - Registered Nurse II, Specialist	26.70
12314 - Registered Nurse III	32.30
12315 - Registered Nurse III, Anesthetist	32.30
12316 - Registered Nurse IV	38.70
12317 - Scheduler (Drug and Alcohol Testing)	17.28
<b>13000 - Information And Arts Occupations</b>	
13011 - Exhibits Specialist I	17.81
13012 - Exhibits Specialist II	21.81
13013 - Exhibits Specialist III	26.51
13041 - Illustrator I	17.81
13042 - Illustrator II	21.81
13043 - Illustrator III	26.51
13047 - Librarian	22.66
13050 - Library Aide/Clerk	13.17
13054 - Library Information Technology Systems Administrator	21.15
13058 - Library Technician	14.67
13061 - Media Specialist I	14.78
13062 - Media Specialist II	16.54
13063 - Media Specialist III	18.43
13071 - Photographer I	14.72
13072 - Photographer II	17.00
13073 - Photographer III	20.36
13074 - Photographer IV	24.89
13075 - Photographer V	30.21
13110 - Video Teleconference Technician	14.78
<b>14000 - Information Technology Occupations</b>	
14041 - Computer Operator I	13.39
14042 - Computer Operator II	17.39
14043 - Computer Operator III	18.63
14044 - Computer Operator IV	23.78
14045 - Computer Operator V	26.73
14071 - Computer Programmer I (1)	22.73
14072 - Computer Programmer II (1)	27.24
14073 - Computer Programmer III (1)	27.62
14074 - Computer Programmer IV (1)	27.62
14101 - Computer Systems Analyst I (1)	27.62
14102 - Computer Systems Analyst II (1)	27.62
14103 - Computer Systems Analyst III (1)	27.62
14150 - Peripheral Equipment Operator	13.39
14160 - Personal Computer Support Technician	23.78
<b>15000 - Instructional Occupations</b>	
15010 - Aircrew Training Devices Instructor (Non-Rated)	29.35
15020 - Aircrew Training Devices Instructor (Rated)	35.52
15030 - Air Crew Training Devices Instructor (Pilot)	36.76
15050 - Computer Based Training Specialist / Instructor	30.38
15060 - Educational Technologist	24.89
15070 - Flight Instructor (Pilot)	36.76

05/29/2007

**Final RFP NNM08125357R  
Attachment J-15**

15080 - Graphic Artist	19.60
15090 - Technical Instructor	17.19
15095 - Technical Instructor/Course Developer	21.01
15110 - Test Proctor	17.16
15120 - Tutor	17.16
<b>16000 - Laundry, Dry-Cleaning, Pressing And Related Occupations</b>	
16010 - Assembler	7.59
16030 - Counter Attendant	7.59
16040 - Dry Cleaner	9.54
16070 - Finisher, Flatwork, Machine	7.59
16090 - Presser, Hand	7.59
16110 - Presser, Machine, Drycleaning	7.59
16130 - Presser, Machine, Shirts	7.59
16160 - Presser, Machine, Wearing Apparel, Laundry	7.59
16190 - Sewing Machine Operator	10.07
16220 - Tailor	10.54
16250 - Washer, Machine	8.23
<b>19000 - Machine Tool Operation And Repair Occupations</b>	
19010 - Machine-Tool Operator (Tool Room)	20.38
19040 - Tool And Die Maker	24.86
<b>21000 - Materials Handling And Packing Occupations</b>	
21020 - Forklift Operator	14.82
21030 - Material Coordinator	19.18
21040 - Material Expediter	19.18
21050 - Material Handling Laborer	10.29
21071 - Order Filler	10.87
21080 - Production Line Worker (Food Processing)	14.82
21110 - Shipping Packer	12.98
21130 - Shipping/Receiving Clerk	12.98
21140 - Store Worker I	10.81
21150 - Stock Clerk	14.66
21210 - Tools And Parts Attendant	14.82
21410 - Warehouse Specialist	14.82
<b>23000 - Mechanics And Maintenance And Repair Occupations</b>	
23010 - Aerospace Structural Welder	17.04
23021 - Aircraft Mechanic I	22.24
23022 - Aircraft Mechanic II	23.35
23023 - Aircraft Mechanic III	24.52
23040 - Aircraft Mechanic Helper	17.44
23050 - Aircraft Painter	19.32
23060 - Aircraft Servicer	19.34
23080 - Aircraft Worker	20.27
23110 - Appliance Mechanic	18.04
23120 - Bicycle Repairer	14.66
23125 - Cable Splicer	19.76
23130 - Carpenter, Maintenance	17.56
23140 - Carpet Layer	17.29
23160 - Electrician, Maintenance	23.21
23181 - Electronics Technician Maintenance I	16.30
23182 - Electronics Technician Maintenance II	25.55
23183 - Electronics Technician Maintenance III	26.62
23260 - Fabric Worker	16.54
23290 - Fire Alarm System Mechanic	18.79
23310 - Fire Extinguisher Repairer	15.72
23311 - Fuel Distribution System Mechanic	18.79
23312 - Fuel Distribution System Operator	16.80
23370 - General Maintenance Worker	16.43
23380 - Ground Support Equipment Mechanic	22.24
23381 - Ground Support Equipment Servicer	19.34
23382 - Ground Support Equipment Worker	20.27

05/29/2007

**Final RFP NNM08125357R  
Attachment J-15**

23391 - Gunsmith I	13.74
23392 - Gunsmith II	15.13
23393 - Gunsmith III	16.59
23410 - Heating, Ventilation & Air-Conditioning Mechanic	18.38
23411 - Heating, Ventilation & Air Conditioning Mechanic (R&D Facility)	19.30
23430 - Heavy Equipment Mechanic	18.38
23440 - Heavy Equipment Operator	17.87
23460 - Instrument Mechanic	22.74
23465 - Laboratory/Shelter Mechanic	15.88
23470 - Laborer	11.36
23510 - Locksmith	18.04
23530 - Machinery Maintenance Mechanic	23.32
23550 - Machinist, Maintenance	16.92
23580 - Maintenance Trades Helper	14.41
23591 - Metrology Technician I	22.74
23592 - Metrology Technician II	23.71
23593 - Metrology Technician III	24.65
23640 - Millwright	18.79
23710 - Office Appliance Repairer	18.09
23760 - Painter, Maintenance	17.56
23790 - Pipefitter, Maintenance	18.90
23810 - Plumber, Maintenance	18.06
23820 - Pneudraulic Systems Mechanic	18.79
23850 - Rigger	18.79
23870 - Scale Mechanic	17.29
23890 - Sheet-Metal Worker, Maintenance	18.38
23910 - Small Engine Mechanic	16.75
23931 - Telecommunications Mechanic I	18.38
23932 - Telecommunications Mechanic II	20.21
23950 - Telephone Lineman	18.38
23960 - Welder, Combination, Maintenance	18.38
23965 - Well Driller	18.79
23970 - Woodcraft Worker	18.79
23980 - Woodworker	16.43
<b>24000 - Personal Needs Occupations</b>	
24570 - Child Care Attendant	7.78
24580 - Child Care Center Clerk	9.71
24610 - Chore Aide	8.42
24620 - Family Readiness And Support Services Coordinator	12.00
24630 - Homemaker	12.32
<b>25000 - Plant And System Operations Occupations</b>	
25010 - Boiler Tender	18.86
25040 - Sewage Plant Operator	17.87
25070 - Stationary Engineer	18.86
25190 - Ventilation Equipment Tender	14.85
25210 - Water Treatment Plant Operator	17.56
<b>27000 - Protective Service Occupations</b>	
27004 - Alarm Monitor	11.88
27007 - Baggage Inspector	9.95
27008 - Corrections Officer	14.76
27010 - Court Security Officer	15.94
27030 - Detection Dog Handler	12.55
27040 - Detention Officer	14.76
27070 - Firefighter	15.94
27101 - Guard I	9.95
27102 - Guard II	12.55
27131 - Police Officer I	17.14
27132 - Police Officer II	19.05
<b>28000 - Recreation Occupations</b>	
28041 - Carnival Equipment Operator	8.93

05/29/2007

**Final RFP NNM08125357R  
Attachment J-15**

28042 - Carnival Equipment Repairer	9.38
28043 - Carnival Equipment Worker	7.40
28210 - Gate Attendant/Gate Tender	12.47
28310 - Lifeguard	11.10
28350 - Park Attendant (Aide)	13.95
28510 - Recreation Aide/Health Facility Attendant	10.18
28515 - Recreation Specialist	13.48
28630 - Sports Official	11.10
28690 - Swimming Pool Operator	15.65
<b>29000 - Stevedoring/Longshoremen Occupational Services</b>	
29010 - Blocker And Bracer	17.70
29020 - Hatch Tender	17.70
29030 - Line Handler	17.70
29041 - Stevedore I	16.90
29042 - Stevedore II	18.56
<b>30000 - Technical Occupations</b>	
30010 - Air Traffic Control Specialist, Center (HFO) (2)	33.27
30011 - Air Traffic Control Specialist, Station (HFO) (2)	22.94
30012 - Air Traffic Control Specialist, Terminal (HFO) (2)	25.27
30021 - Archeological Technician I	15.69
30022 - Archeological Technician II	17.56
30023 - Archeological Technician III	21.76
30030 - Cartographic Technician	23.09
30040 - Civil Engineering Technician	20.75
30061 - Drafter/CAD Operator I	15.69
30062 - Drafter/CAD Operator II	17.77
30063 - Drafter/CAD Operator III	18.64
30064 - Drafter/CAD Operator IV	22.94
30081 - Engineering Technician I	13.21
30082 - Engineering Technician II	15.89
30083 - Engineering Technician III	19.09
30084 - Engineering Technician IV	26.34
30085 - Engineering Technician V	30.74
30086 - Engineering Technician VI	37.17
30090 - Environmental Technician	22.19
30210 - Laboratory Technician	18.92
30240 - Mathematical Technician	23.77
30361 - Paralegal/Legal Assistant I	15.32
30362 - Paralegal/Legal Assistant II	18.99
30363 - Paralegal/Legal Assistant III	23.23
30364 - Paralegal/Legal Assistant IV	28.11
30390 - Photo-Optics Technician	22.75
30461 - Technical Writer I	19.60
30462 - Technical Writer II	23.96
30463 - Technical Writer III	27.92
30491 - Unexploded Ordnance (UXO) Technician I	21.13
30492 - Unexploded Ordnance (UXO) Technician II	25.57
30493 - Unexploded Ordnance (UXO) Technician III	30.65
30494 - Unexploded (UXO) Safety Escort	21.13
30495 - Unexploded (UXO) Sweep Personnel	21.13
30620 - Weather Observer, Combined Upper Air Or Surface Programs (3)	20.23
30621 - Weather Observer, Senior (3)	20.67
<b>31000 - Transportation/Mobile Equipment Operation Occupations</b>	
31020 - Bus Aide	9.74
31030 - Bus Driver	12.67
31043 - Driver Courier	12.63
31260 - Parking and Lot Attendant	8.86
31290 - Shuttle Bus Driver	13.43
31310 - Taxi Driver	9.91
31361 - Truckdriver, Light	13.43

05/29/2007

**Final RFP NNM08125357R  
Attachment J-15**

31362 - Truckdriver, Medium	16.55
31363 - Truckdriver, Heavy	16.83
31364 - Truckdriver, Tractor-Trailer	16.83
<b>99000 - Miscellaneous Occupations</b>	
99030 - Cashier	9.06
99050 - Desk Clerk	6.90
99095 - Embalmer	21.13
99251 - Laboratory Animal Caretaker I	8.53
99252 - Laboratory Animal Caretaker II	13.46
99310 - Mortician	21.13
99410 - Pest Controller	12.10
99510 - Photofinishing Worker	10.58
99710 - Recycling Laborer	13.04
99711 - Recycling Specialist	14.78
99730 - Refuse Collector	11.78
99810 - Sales Clerk	10.45
99820 - School Crossing Guard	11.46
99830 - Survey Party Chief	14.67
99831 - Surveying Aide	9.04
99832 - Surveying Technician	12.37
99840 - Vending Machine Attendant	12.59
99841 - Vending Machine Repairer	14.42
99842 - Vending Machine Repairer Helper	12.59

---

ALL OCCUPATIONS LISTED ABOVE RECEIVE THE FOLLOWING BENEFITS:

**HEALTH & WELFARE:** Life, accident, and health insurance plans, sick leave, pension plans, civic and personal leave, severance pay, and savings and thrift plans. Minimum employer contributions costing an average of \$3.16 per hour computed on the basis of all hours worked by service employees employed on the contract.

**VACATION:** 2 weeks paid vacation after 1 year of service with a contractor or successor; 3 weeks after 10 years, and 4 after 20 years. Length of service includes the whole span of continuous service with the present contractor or successor, wherever employed, and with the predecessor contractors in the performance of similar work at the same Federal facility. (Reg. 29 CFR 4.173)

**HOLIDAYS:** A minimum of ten paid holidays per year, New Year's Day, Martin Luther King Jr's Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day, and Christmas Day. (A contractor may substitute for any of the named holidays another day off with pay in accordance with a plan communicated to the employees involved.) (See 29 CFR 4174)

**THE OCCUPATIONS WHICH HAVE PARENTHESES AFTER THEM RECEIVE THE FOLLOWING BENEFITS (as numbered):**

1) Does not apply to employees employed in a bona fide executive, administrative, or professional capacity as defined and delineated in 29 CFR 541. (See CFR 4.156)

2) **APPLICABLE TO AIR TRAFFIC CONTROLLERS ONLY - NIGHT DIFFERENTIAL:** An employee is entitled to pay for all work performed between the hours of 6:00 P.M. and 6:00 A.M. at the rate of basic pay plus a night pay differential amounting to 10 percent of the rate of basic pay.

3) **AIR TRAFFIC CONTROLLERS AND WEATHER OBSERVERS - NIGHT PAY & SUNDAY PAY:** If you work at night as part of a regular tour of duty, you will earn a night differential and receive an additional 10% of basic pay for any hours worked between 6pm and 6am.

05/29/2007

**Final RFP NNM08125357R  
Attachment J-15**

If you are a full-time employed (40 hours a week) and Sunday is part of your regularly scheduled workweek, you are paid at your rate of basic pay plus a Sunday premium of 25% of your basic rate for each hour of Sunday work which is not overtime (i.e. occasional work on Sunday outside the normal tour of duty is considered overtime work).

**\*\* HAZARDOUS PAY DIFFERENTIAL \*\***

An 8 percent differential is applicable to employees employed in a position that represents a high degree of hazard when working with or in close proximity to ordnance, explosives, and incendiary materials. This includes work such as screening, blending, dying, mixing, and pressing of sensitive ordnance, explosives, and pyrotechnic compositions such as lead azide, black powder and photoflash powder. All dry-house activities involving propellants or explosives. Demilitarization, modification, renovation, demolition, and maintenance operations on sensitive ordnance, explosives and incendiary materials. All operations involving regarding and cleaning of artillery ranges.

A 4 percent differential is applicable to employees employed in a position that represents a low degree of hazard when working with, or in close proximity to ordnance, (or employees possibly adjacent to) explosives and incendiary materials which involves potential injury such as laceration of hands, face, or arms of the employee engaged in the operation, irritation of the skin, minor burns and the like; minimal damage to immediate or adjacent work area or equipment being used. All operations involving, unloading, storage, and hauling of ordnance, explosive, and incendiary ordnance material other than small arms ammunition.

**NOTE:** These differentials are only applicable to work that has been specifically designated by the agency for ordnance, explosives, and incendiary material differential pay.

**\*\* UNIFORM ALLOWANCE \*\***

If employees are required to wear uniforms in the performance of this contract (either by the terms of the Government contract, by the employer, by the state or local law, etc.), the cost of furnishing such uniforms and maintaining (by laundering or dry cleaning) such uniforms is an expense that may not be borne by an employee where such cost reduces the hourly rate below that required by the wage determination. The Department of Labor will accept payment in accordance with the following standards as compliance:

The contractor or subcontractor is required to furnish all employees with an adequate number of uniforms without cost or to reimburse employees for the actual cost of the uniforms. In addition, where uniform cleaning and maintenance is made the responsibility of the employee, all contractors and subcontractors subject to this wage determination shall (in the absence of a bona fide collective bargaining agreement providing for a different amount, or the furnishing of contrary affirmative proof as to the actual cost), reimburse all employees for such cleaning and maintenance at a rate of \$3.35 per week (or \$.67 cents per day). However, in those instances where the uniforms furnished are made of "wash and wear" materials, may be routinely washed and dried with other personal garments, and do not require any special treatment such as dry cleaning, daily washing, or commercial laundering in order to meet the cleanliness or appearance standards set by the terms of the Government contract, by the contractor, by law, or by the nature of the work, there is no requirement that employees be reimbursed for uniform maintenance costs.

**The duties of employees under job titles listed are those described in the "Service Contract Act Directory of Occupations," Fifth Edition, April 2006, unless otherwise indicated. Copies of the Directory are available on the Internet.** A links to the Directory may be found on the WHD home page at <<http://www.dol.gov/esa/whd/>> or through the Wage Determinations On-Line (WDOL) Web site at <<http://wdol.gov/>>.

05/29/2007

**Final RFP NNM08125357R**  
**Attachment J-15**

**REQUEST FOR AUTHORIZATION OF ADDITIONAL CLASSIFICATION AND WAGE RATE {Standard Form 1444 (SF 1444)}**

Conformance Process:

The contracting officer shall require that any class of service employee which is not listed herein and which is to be employed under the contract (i.e., the work to be performed is not performed by any classification listed in the wage determination), be classified by the contractor so as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination. Such conformed classes of employees shall be paid the monetary wages and furnished the fringe benefits as are determined. Such conforming process shall be initiated by the contractor prior to the performance of contract work by such unlisted class(es) of employees. The conformed classification, wage rate, and/or fringe benefits shall be retroactive to the commencement date of the contract. {See Section 4.6 (C)(vi)} When multiple wage determinations are included in a contract, a separate SF 1444 should be prepared for each wage determination to which a class(es) is to be conformed.

The process for preparing a conformance request is as follows:

- 1) When preparing the bid, the contractor identifies the need for a conformed occupation) and computes a proposed rate).
- 2) After contract award, the contractor prepares a written report listing in order proposed classification title), a Federal grade equivalency (FGE) for each proposed classification), job description), and rationale for proposed wage rate), including information regarding the agreement or disagreement of the authorized representative of the employees involved, or where there is no authorized representative, the employees themselves. This report should be submitted to the contracting officer no later than 30 days after such unlisted class(es) of employees performs any contract work.
- 3) The contracting officer reviews the proposed action and promptly submits a report of the action, together with the agency's recommendations and pertinent information including the position of the contractor and the employees, to the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, for review. (See section 4.6(b)(2) of Regulations 29 CFR Part 4).
- 4) Within 30 days of receipt, the Wage and Hour Division approves, modifies, or disapproves the action via transmittal to the agency contracting officer, or notifies the contracting officer that additional time will be required to process the request.
- 5) The contracting officer transmits the Wage and Hour decision to the contractor.
- 6) The contractor informs the affected employees.

Information required by the Regulations must be submitted on SF 1444 or bond paper.

When preparing a conformance request, the "Service Contract Act Directory of Occupations" (the Directory) should be used to compare job definitions to insure that duties requested are not performed by a classification already listed in the wage determination. Remember, it is not the job title, but the required tasks that determine whether a class is included in an established wage determination. Conformances may not be used to artificially split, combine, or subdivide classifications listed in the wage determination.

05/29/2007

ATTACHMENT J-16

ACRONYM LIST

ACI	Administratively Controlled Audit Agency
ACO	Administrative Contracting Officer
ADP	Acceptance Data Package
AF	Award Fee
AGT	Applied Geo Technologies
ANSI	American National Standards Institute
AO	Atomic Oxygen
AOO	Accounting Operations Office
ASD	Acquisition Strategy Development
ASM	Acquisition Strategy Meeting
ASM	American Society for Materials
ASQC	American Society for Quality Control
ASRI	AI Signal Research, Inc.
ASTM	American Society for Testing and Materials
ATP	Authority to Proceed
AVL	Audited Vendor List
AVO	Avoid Verbal Orders
AWS	American Welding Society
BAMSI	Brown and Associates Management Services, Incorporated
BICE	Bureau of Immigration and Customs Enforcement
BLM	Bureau of Land Management
BRAC	Base Realignment and Closure Commission
BXA	Bureau of Export Administration
CAD	Computer Aided Design
C&DM	Configuration and Data Management
CAE	Computer Aided Engineering
CAER	Customer and Employee Relations
CAM	Computer Aided Modeling
CAS	Cost Accounting Standard
CBA	Collective Bargaining Agreements
CBI	Confidential Business Information
CBDnet	Commerce Business Daily on Line Network
CCI	Consolidated Contracting Initiative
CCIP	Contamination Control and Implementation Plan
CCR	Central Contractor Registration
CCS	Center Chief of Security
CD	Compact Disk
CD	Contractual Data
CDR	Calibration Discrepancy Report
CDR	Critical Design Review
CD-R	Compact Disk Read Only
CEI	Component End Item
CERTRAK	MSFC Certification Database
CFR	Code of Federal Regulations
CG	Center of Gravity
CIL	Critical Items List
CITSPP	Contractor Information Technology Security Program Plan
CLIN	Contact Line Item
CM	Configuration Management
CMP	Configuration Management Plan

**Final RFP NNM08125357R**

CNC	Computer Numerically Controlled
CO	Contracting Officer
CoC	Certificate of Compliance
COQ	Certification of Qualification
COR	Contracting Officer's Representative
COTR	Contracting Officer's Technical Representative
COTS	Commercial Off the Shelf
CPAF	Cost Plus Award Fee
CPM	Critical Path Method
CPR	Core Program Requirements
CPR	Cost Performance Report
CR	Cost-reimbursable
CRT	Center Review Team
CSA	Canadian Space Agency
CSD	Common Schedules Database
CSEE	Combined Space Environmental Effects
CSO	Contractor's Corporate Security Officer
CTA	Customer Test Agreement
CTR	Customer Test Requests
CWC	Collaborative Work Commitment
CY	Contract Year
D&F	Determination and Findings
D&R	Definition and Requirements
DAQ	Data Acquisition
DAR	Deviation Approval Request
DCAA	Defense Contract Audit Agency
DCL	Document Change Log
DCP	Development Cost Plan
DD	Defense Department
DDTF	Digital Design to Fabrication
DEF	Definition
DEI	Deliverable End Item
DOE	Department of Energy
DOL	Department of Labor
DPAS	Defense Contract Audit Agency
DPD	Data Procurement Department/Document
DPD	Data Project Description
DR	Design Review
DR	Discrepancy Record
DRD	Data Requirement Description/Document
DRFP	Draft Request for Proposal
DVD	Digital Voice Disk
°C	Degrees Celsius
°F	Degrees Fahrenheit
DOL	Department of Labor
DOD	Department of Defense
DOT	Department of Transportation
DPAS	Defense Priority and Allocation System
DPD	Data Procurement Description
DRD	Data Requirements Description
DRL	Data Requirements List
DUNS	Data Universal Numbering System
EAR	Export Administration Regulations
ECLSS	Environmental Control and Life Support System

**Final RFP NNM08125357R**

ECN	Equipment Control Number
ECP	Engineering Change Proposal
ED	Engineering Directorate
EDMP	Experiment Data Management Plan
EEE	Electrical, Electronics, and Electromechanical
EEOH	Environmental Engineering & Occupational Health
EFDTF	Experimental Fluid Dynamics Test Facility
EGL	Environmental Gas Laboratory
ELV	Expendable Launch Vehicle
EMC	Electromagnetic Compatibility
EMI	Electromagnetic Interference
EMS	Environmental Management System
EPA	Environment Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
EPTL	Electrical Parts Test Laboratory
EPS	Electronic Posting System
ESA	European Space Agency
ESL	Electrostatic Levitator
ESTS	Engineering Services and Technicians Services
ET	External Tank
ETF	Environmental Test Facility
EVM	Earned Value Management
EVMS	Earned Value Management System
EWS	Emergency Warning System
FAR	Federal Acquisition Regulation
FC	Fingerprint Card
FCA	Functional Configuration Audit
FDO	Fee Determination Official
FEC	Field Engineering Change
FHSO	Flight Hardware Support Operations
FICA	Federal Insurance Contribution Act
FIPS	Federal Information Processing Standards
FOP	Facility Operating Procedure
FPR	Final Proposal Revision
FRFP	Final Request for Proposal
FSO	Facility Security Officer
FTE	Full Time Equivalent
FTIR	Fourier Transform Infrared
G&A	General & Administrative Cost
GAO	General Accounting Office
GD&T	Geometric Dimensions and Tolerances
GFC	Gilmore Force Calibrator
GFE	Government Furnished Equipment
GFP	Government Furnished Property
GOX	Gaseous Oxygen
GRC	Glenn Research Center
GSA	General Services Administration
GSE	Ground Support Equipment
GTAW	Gas Tungsten Arc Welding
GU	Ground Unit
HTML	Hyper Text Mark-Up Language
HVAC	Heating, Ventilating, Air Conditioning
IACL	Intercenter Agreement Certification Letters
ICRC	Integrated Concepts Research Corporation

**Final RFP NNM08125357R**

IDIQ	Indefinite Delivery Indefinite Quantity
IDMS	Identity Management System
IG	Inspector General
IGCE	Independent Government Cost Estimate
IHOPS	Inventory of Hazardous Operations
IMS	Integrated Manufacturing System
IQS	Integrated Quality System
ISO	International Organization for Standardization
ISS	International Space Station
IT	Information Technology
ITAR	International Traffic in Arms Regulations
JHA	Job Hazard Analysis
JOFOC	Justification for Other than Competitive Proposals
JSC	Johnson Space Center
KP	Key Personnel
KSC	Kennedy Space Center
LOCAD	Lab on a Chip Application Design
LOX	Liquid Oxygen
LR	Level of Secretary's Responsibility
LS	Logistics/Support
LTA	Load Test Annex
LTC	Lost Time Case
LTAE	Load Test Annex Extension
LTIR	Lost Time Injury Rates
LVL	Limited Vendor List
MA	Management
MAPTIS	Materials and Processes Technical Information System
MBP	Master Buy Plan
MC	Management and Control
MCMS	Marshall Calibration Management System
MDL	Microgravity Development Laboratory
ME	Manufacturer Engineer
METTS	Marshall Engineering Technicians and Trades Support Services
MIDL	Marshall Integrated Document Library
Mil	Military
MIPs	Mandatory Inspection Points
MIS	Management Information Systems
MIUL	Materials Information and Usage List
MLC	Master List Custodian
MLI	Multi-layer Insulation
MMR	Monthly Management Review
MOU	Memorandum of Understanding
MPD	Marshall Procurement Directive
MPG	Marshall Procedural Guidance
MRB	Material Review Board
MRT	Microgravity Research Team
MS	Mission Services
MSC	Mission Support Contractor
MSDS	Material Safety Data Sheet
MSFC	Marshall Space Flight Center
MTA	Management and Technical Approach
MTAE	Materials Testing and Evaluation
MUA	Materials Usage Agreements
MWI	Marshall Work Instruction

**Final RFP NNM08125357R**

NAC	National Agency Check
NACI	National Agency Check with Inquiries
NAICS	North American Industry Classification System
NAIS	NASA Acquisition Internet Service
NAR	Non-Advocate Review
NASA	National Aeronautic Space Administration
NCAM	National Center for Advanced Manufacturing
NCIC	National Crime Information Center
NDE	Nondestructive Evaluation
NFNMS	NASA Foreign National Management System
NFS	NASA Federal Acquisition Supplement
NIST	National Institute of Standards and Technology
NLRB	National Labor Relations Board
NPG	NASA Procedures and Guidelines
NPR	NASA Procedures and Requirements
NRA	NASA Research Announcement
NRRS	NASA Records Retention Schedule
NSCCB	Network Security Configuration Control Board
NSN	National Stock Number
NTE	Not to Exceed
NTSR	NASA New Technology Summary Report
NVR	Nonvolatile Residue
OCI	Organizational Conflicts of Interest
OCIO	Office of Chief Information Officer
ODC	Other Direct Cost
ODEO	Office of Diversity and Equal Opportunity
ODIN	Outsourcing Desktop Initiative for NASA
OFCCP	Office of Federal Contract Compliance Programs
OGE	Office of Government Ethics
OI	Organizational Instructions
OI	Organizational Issuances
OPR	Office of Primary Responsibility
OPRD	OPR Designee
ORCA	Online Representations and Certifications Application
ORIC	Operational Readiness Inspection Committee
OSHA	Occupational Safety and Health Administration
OWI	Organizational Work Instructions
PACS	Physical Access Control System
PC	Personal Computer
PC	Production Control
PCA	Physical Configuration Audits
PCH	Program Critical Hardware
PCI	Personal Identity Verification Card Issuance
PDA	Personal Digital Assistant
PDM	Project Data Management
PDR	Preliminary Design Review
PDTS	Procurement Discrepancy Tracking System
PEB	Performance Evaluation Board
PERT	Program Evaluation Review Technique
PIO	Paid Time Off
PIV	Personal Identity Verification
PKI	Public Key Infrastructure
PMC	Program Management Council
PO	Purchase Order

**Final RFP NNM08125357R**

POC	Point of Contact
POP	Period of Performance
POP	Program Operating Plan
PPA	Pollution Prevention Act
PP&C	Pressure, Propellants, and Calibration
PPE	Personal Protective Equipment
PQR	Procedure Qualification Records
PR	Purchase Request
PRACA	Problem Reporting and Corrective Action
PRB	Post-retirement Benefits
PRDL	Propulsion Research Development Laboratory
PRL	Page Revision Log
PS	Post Selection
PSAL	Project Specific Approved Supplier List
psi	pounds per square inch
PSM	Procurement Strategy Meeting
PWS	Performance Work Statement
QASP	Quality Assurance Surveillance Plan
QMS	Quality Management System
QSDN	Quality System Deficiency Notice
QTPS	Quality Test Preparation Sheet
RBAM	Risk Based Acquisition Management
RD	Requirements Development
RDR	Requirements Definition Review
RFP	Request for Proposal
RFQ	Request for Quotation
RFR	Request for Request
RID	Review Item Discrepancy
RLO	Records Liaison Officer
RSRM	Reusable Solid Rocket Motor
SA	Safety
SAA	Space Act Agreement
SAE	Society of Automotive Engineering
S&MA	Safety and Mission Assurance
SBA	Small Business Administration
SBA PCR	Small Business Administration Procurement Center Representative
SBS	Small Business Specialist
SBU	Sensitive but Unclassified
SCA	Service Contract Act
SCAP	Shared Capability Assessment Program
scf	Standard Cubic Feet
SD	Solicitation Development
SDB	Small Disadvantaged Business
SDOS	Systems Development and Operations Support
SEB	Source Evaluation Board
SEC	Source Evaluation Committee
SEE	Space Environmental Effects
SEMO	Supply and Equipment Management Officer
SF	Standard Form
SH	Safety, Health, and Environmental Initiatives
SHE	Safety, Health, and Environmental
SHP	Safety and Health Plan
SIC	Standard Industrial Classification
SIN	Special Identification Number

**Final RFP NNM08125357R**

SK	Staffing and Total Compensation Plan
SOP	Standard Operating Procedure
SOW	Statement of Work
SP	Standard Procedure
SRB	Solid Rocket Booster
SRR	Systems Requirements Review
SS	Social Security
SS	Source Selection
SSA	Source Selection Authority
SSME	Space Shuttle Main Engine
SSN	Social Security Number
SSWP	Supervisor Safety Webpage
STA	Science and Technology Agency of Japan
STC	Staff and Total Compensation
STD	Standard
STE	Special Test Equipment
STO	Special Test Order
TAFT	Turbine Airflow Test
TASC	Testing and Analytical Support Contract
TBD	To Be Determined
TCR	Test Completion Report
T.I.A.S.	Treaties and Other International Acts Series
TIP	Test Implementation Plan
TM	Task Monitor
TO	Task Order
TOP	Task Order Plan
TOR	Task Order Request
TOXICITY	Toxic Offgassing
TP	Technical Performance
TPM	Technical Performance Measurement
TPO	Turbine Performance Optimization
TPS	Test Preparation Sheet
TRD	Test Requirements Document
TRR	Test Readiness Review
TSOW	Test Scope of Work
TST	Training Strategy Team
TTA	Technical Task Agreement
USML	U.S. Munitions List
U.S.	United States
U.S.C.	United States Code
US-CERT	United States Computer Emergency Readiness Team
U.S.T.	United States Treaties and Other International Agreements
UV	Ultraviolet
V&CS	Valve and Component Shop
VM	Visual Manufacturing
WBS	Work Breakdown Structure
WO	Work Order
WOQ	Welding Operation Qualification
WPQ	Welding Operator Qualification
WPS	Welding Procedure Specification
WSTF	White Sands Test Facility
WYE	Work Year Equivalent

**ATTACHMENT 17**

**(RESERVED)**

**ATTACHMENT J-18**

**PERSONAL IDENTITY VERIFICATION PROCEDURES**

**PIV Card Issuance Procedures** (in accordance with FAR clause 52.204-9, Personal Identity Verification of Contractor Personnel)

FIPS 201 Appendix A graphically displays the following procedure for the issuance of a PIV credential.

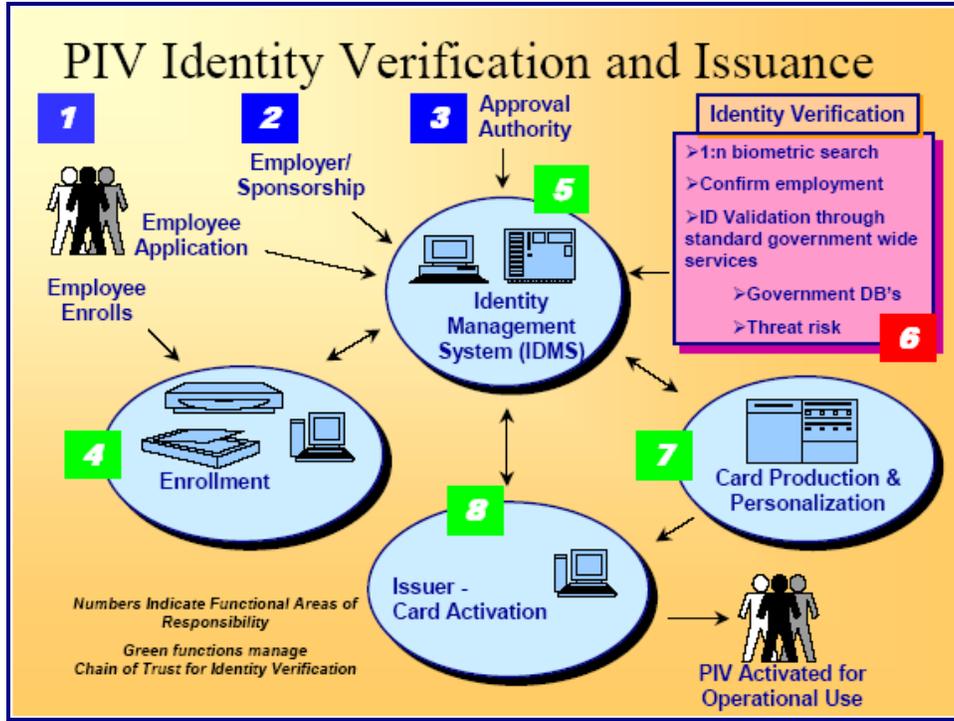


Figure A-1, FIPS 201, Appendix A

The following steps describe the procedures for the NASA Personal Identity Verification Card Issuance (PCI) of a PIV credential:

**Step 1:**

The Contractor's Corporate Security Officer (CSO), Program Manager (PM), or Facility Security Officer (FSO) submits a formal letter that provides a list of contract employees (applicant) names requesting access to the NASA Contracting Officer's Technical Representative (COTR). In the case of a foreign national applicant, approval through the NASA Foreign National Management System (NFMMS) must be obtained for the visit or assignment before any processing for a PIV credential can take place. Further, if the foreign national is not under a contract where a COTR has been officially designated, the foreign national will provide the information directly to their visit/assignment host, and the host sponsor will fulfill the duties of the COTR mentioned herein. In each case, the letter shall provide notification of the contract or foreign national employee's (hereafter the "applicant") full name (first, middle and last), social security number (SSN) or NASA Foreign National Management System Visitor Number if the foreign national does not have a SSN, and date of birth. If the contract employee has a current

satisfactorily completed National Agency Check with Inquiries (NACI) or an equivalent or higher degree of background investigation, the letter shall indicate the type of investigation, the agency completing the investigation, and date the investigation was completed. Also, the letter must specify the risk/sensitivity level associated with the position in which each applicant will be working (NPR 1600.1, §4.5 is germane) Further, the letter shall also acknowledge that contract employees may be denied access to NASA information or information systems based on an unsatisfactory background investigation/adjudication. .

After reviewing the letter for completeness and concurring with the risk/sensitivity levels, the COTR/host must forward the letter to the Center Chief of Security (CCS). The CCS shall review the OPM databases (e.g, DCII, PIP, et al.), and take appropriate steps to validate the applicant's investigation status. Requirements for a NACI or other investigation shall be initiated only if necessary.

Applicants who do not currently possess the required level of background investigation shall be directed to the e-QIP web site to complete the necessary background investigation forms online. The CCS shall provide to the COTR/host information and instructions on how to access the e-QIP for each contract or foreign national employee requiring access

### **Step 2**

Upon acceptance of the letter/background information, the applicant will be advised that in order to complete the investigative process, he or she must appear in-person before the authorized PIV registrar and submit two forms of identity source documents in original form. The identity source documents must come from the list of acceptable documents included in Form I-9, Employment Eligibility Verification, one which must be a Federal<sup>1</sup> or State issued picture identification. Fingerprints will be taken at this time. The applicant must appear **no later than** the entry on duty date.

When the applicant appears, the registrar will electronically scan the submitted documents; any document that appears invalid will be rejected by the registrar. The registrar will capture electronically both a facial image and fingerprints of the applicant. The information submitted by the applicant will be used to create or update the applicant identity record in the Identity Management System (IDMS).

### **Step 3:**

Upon the applicant's completion of the investigative document, the CCS reviews the information, and resolves discrepancies with the applicant as necessary. When the applicant has appeared in person and completed fingerprints, the package is electronically submitted to initiate the NACI. The CCS includes a request for feedback on the NAC portion of the NACI at the time the request is submitted.

### **Step 4**

Prior to authorizing physical access of a contractor employee to a federally-controlled facility or access to a Federal information system, the CCS will ensure a National Crime Information Center (NCIC) with an Interstate Identification Index check is/has been performed. In the case of a foreign national, a national check of the Bureau of Immigration and Customs Enforcement (BICE) database will be performed for each applicant. If this process yields negative

---

<sup>1</sup> A non-PIV government identification badge, including the NASA Photo Identification Badge, MAY NOT BE USED for the original issuance of a PIV vetted credential

information, the CCS will immediately notify the COTR/host of the determination regarding access made by the CCS.

**Step 5**

Upon receipt of the completed NAC, the CCS will update IDMS from the NAC portion of the NACI and indicate the result of the suitability determination. If an unsatisfactory suitability determination is rendered, the COTR will advise the contractor that the employee is being denied physical access to all federally-controlled facilities and Federal information systems.

Based on a favorable NAC and NCIC/III or BICE check, the CCS will authorize the issuance of a PIV federal credential in the Physical Access Control System (PACS) database. The CCS, based on information provided by the COTR/host, will determine what physical access the applicant should be granted once the PIV issues the credential.

**Step 6:**

Using the information provided by the applicant during his or her in-person appearance, the PIV card production facility creates and instantiates the approved PIV card for the applicant with an activation date commensurate with the applicant's start date.

**Step 7:**

The applicant proceeds to the credential issuance facility to begin processing for receipt of his/her federal credential.

The applicant provides to the credential issuing operator proof of identity with documentation that meets the requirements of FIPS 201 (DHS Employment Eligibility Verification (Form I-9) documents. These documents **must** be the same documents submitted for registration.

The credential issuing operator will verify that the facial image, and optionally reference finger print, matches the enrollment data used to produce the card. Upon verification of identity, the operator will locate the employee's record in the PACS database, and modify the record to indicate the PIV card has been issued. The applicant will select a PIN for use with his or her new PIV card. Although root data is inaccessible to the operator, certain fields (hair color, eye color, et al.) may be modified to more accurately record the employee's information.

The applicant proceeds to a kiosk or other workstation to complete activation of the PIV card using the initial PIN entered at card issuance.

**ALTERNATIVE FOR APPLICANTS WHO DO NOT HAVE A COMPLETED AND ADJUDICATED NAC AT THE TIME OF ENTRANCE ON DUTY**

Steps 1 through 4 shall be accomplished for all applicants in accordance with the process described above. If the applicant is unable to appear in person until the time of entry on duty, or does not, for any other reason, have a completed and adjudicated NAC portion of the NACI at the time of entrance on duty, the following interim procedures shall apply.

1. If the documents required to submit the NACI have not been completed prior to EOD, the applicant will be instructed to complete all remaining requirements for submission of the investigation request. This includes presentation of I-9 documents and completion of fingerprints, if not already accomplished. If the applicant fails to complete these activities as prescribed in NPR 1600.1 (Chapters 3 & 4), it may be considered as failure to meet the conditions required for physical access to a federally-controlled facility or access to a Federal information system, and result in denial of such access.
2. Based on favorable results of the NCIC, the applicant shall be issued a temporary NASA identification card for a period not-to-exceed six months. If at the end of the six month period the NAC results have not been returned, the agency will at that time make a determination if an additional extension will be granted for the temporary identification card.
3. Upon return of the completed NAC, the process will continue from Step 5.

ATTACHMENT J-19

DOD FORM DD 254 CONTRACT SECURITY CLASSIFICATION AND SPECIFICATION

<p align="center"><b>DEPARTMENT OF DEFENSE CONTRACT SECURITY CLASSIFICATION SPECIFICATION</b> <i>(The requirements of the DoD Industrial Security Manual apply to all security aspects of this effort.)</i></p>				<p><b>1. CLEARANCE AND SAFEGUARDING</b></p>	
				<p>a. FACILITY CLEARANCE REQUIRED</p> <p align="center"><b>Secret</b></p>	
				<p>b. LEVEL OF SAFEGUARDING REQUIRED</p> <p align="center"><b>Secret</b></p>	
<p><b>2. THIS SPECIFICATION IS FOR:</b> <i>(X and complete as applicable)</i></p>			<p><b>3. THIS SPECIFICATION IS:</b> <i>(X and complete as applicable)</i></p>		
	a. PRIME CONTRACT NUMBER			a. ORIGINAL <i>(Complete date in all cases)</i> Date (YYMMDD)	
	b. SUBCONTRACT NUMBER			b. REVISED <i>(Supersedes all previous specs)</i> Revision No.	Date (YYMMDD)
X	c. SOLICITATION OR OTHER NUMBER NNM08125357R	Due Date (YYMMDD) TBD		c. FINAL <i>(Complete Item 5 in all cases)</i> Date (YYMMDD)	
<p><b>4. IS THIS A FOLLOW-ON CONTRACT?</b> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>Classified material received or generated under _____ <i>(Preceding Contract Number)</i> is transferred to this follow-on contract.</p>			<p>NO. If Yes, complete the following:</p>		
<p><b>5. IS THIS A FINAL DD FORM 254?</b> <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p> <p>In response to the contractor's request dated _____, retention of the classified material is authorized for the period _____</p>			<p>NO. If Yes, complete the following:</p>		
<p><b>6. CONTRACTOR</b> <i>(Include Commercial and Government Entity (CAGE) Code)</i></p>					
a. NAME, ADDRESS, AND ZIP CODE		b. CAGE CODE	c. COGNIZANT SECURITY OFFICE <i>(Name, Address, and Zip Code)</i>		
TBD		TBD	TBD		
<p><b>7. SUBCONTRACTOR</b></p>					
a. NAME, ADDRESS, AND ZIP CODE		b. CAGE CODE	c. COGNIZANT SECURITY OFFICE <i>(Name, Address, and Zip Code)</i>		
<p><b>8. ACTUAL PERFORMANCE</b></p>					
a. LOCATION		b. CAGE CODE	c. COGNIZANT SECURITY OFFICE <i>(Name, Address, and Zip Code)</i>		
NASA George C. Marshall Space Flight Center Marshall Space Flight Center, AL 35812		N/A	TBD		
<p><b>9. GENERAL IDENTIFICATION OF THIS PROCUREMENT</b> Marshall Engineering Technicians and Trades Support (METTS) Services at Marshall Space Flight Center</p>					
<b>10. CONTRACTOR WILL REQUIRE ACCESS TO:</b>		YES	NO	<b>11. IN PERFORMING THIS CONTRACT, THE CONTRACTOR WILL:</b>	
a. COMMUNICATIONS SECURITY (COMSEC) INFORMATION			X	a. HAVE ACCESS TO CLASSIFIED INFORMATION ONLY AT ANOTHER CONTRACTOR'S FACILITY OR A GOVERNMENT ACTIVITY	X
b. RESTRICTED DATA			X	b. RECEIVE CLASSIFIED DOCUMENTS ONLY	X
c. CRITICAL NUCLEAR WEAPON DESIGN INFORMATION			X	c. RECEIVE AND GENERATE CLASSIFIED MATERIAL	X
d. FORMERLY RESTRICTED DATA			X	d. FABRICATE, MODIFY, OR STORE CLASSIFIED HARDWARE	X
e. INTELLIGENCE INFORMATION				e. PERFORM SERVICES ONLY	X
(1) Sensitive Compartmented Information (SCI)			X	f. HAVE ACCESS TO U.S. CLASSIFIED INFORMATION OUTSIDE THE U.S., PUERTO RICO, U.S. POSSESSIONS AND TRUST TERRITORIES	X
(2) Non-SCI			X	g. BE AUTHORIZED TO USE THE SERVICES OF DEFENSE TECHNICAL INFORMATION CENTER (DTIC) OR OTHER SECONDARY DISTRIBUTION CENTER	X
f. SPECIAL ACCESS INFORMATION			X	h. REQUIRE A COMSEC ACCOUNT	X
g. NATO INFORMATION			X	i. HAVE TEMPEST REQUIREMENTS	X
h. FOREIGN GOVERNMENT INFORMATION			X	j. HAVE OPERATIONS SECURITY (OPSEC) REQUIREMENTS	X
i. LIMITED DISSEMINATION INFORMATION			X	k. BE AUTHORIZED TO USE THE DEFENSE COURIER SERVICE	X
j. FOR OFFICIAL USE ONLY INFORMATION			X	l. OTHER <i>(Specify)</i>	
k. OTHER <i>(Specify)</i>					

**Final RFP NNM08125357R**

**12. PUBLIC RELEASE** Any information (*classified or unclassified*) pertaining to this contract shall not be released for public dissemination except as provided by the Industrial Security Manual unless it has been approved for public release by appropriate U.S. Government authority. Proposed public releases shall be submitted for approval prior to release

Direct  Through (*Specify*)

Public Affairs Office, CS20, George C. Marshall Space Flight Center, Marshall Space Flight Center, AL 35812  
(must provide four (4) copies)

to the Directorate for Freedom of Information and Security Review, Office of the Assistant Secretary of Defense (Public Affairs)\* for review.  
\*In the case of non-DoD User Agencies, requests for disclosure shall be submitted to that agency.

**13. SECURITY GUIDANCE.** The security classification guidance needed for this classified effort is identified below. If any difficulty is encountered in applying this guidance or if any other contributing factor indicates a need for changes in this guidance, the contractor is authorized and encouraged to provide recommended changes; to challenge the guidance or the classification assigned to any information or material furnished or generated under this contract; and to submit any questions for interpretation of this guidance to the official identified below. Pending final decision, the information involved shall be handled and protected at the highest level of classification assigned or recommended. (*Fill in as appropriate for the classified effort. Attach, or forward under separate correspondence, any documents/guides/extracts referenced herein. Add additional pages as needed to provide complete guidance.*)

Security clearances and classified access is limited to TBD Work. Clearances and access is not authorized for other tasks. Changes shall be furnished if it is determined to be necessary.

Security clearances should be held at a minimum to perform the task.

**Classification Guides:**

- NASA Procedures and Guidelines, Security Procedures and Guidelines, NPG 1620.1, November 18, 1999
- National Industrial Security Program, Operating Manual, DoD 5220.22-M

**14. ADDITIONAL SECURITY REQUIREMENTS.** Requirements, in addition to ISM requirements, are established for this contract. (*If Yes, identify the pertinent contractual clauses in the contract document itself, or provide an appropriate statement which identifies the additional requirements. Provide a copy of the requirements to the cognizant security office. Use Item 13 if additional space is needed.*)

Yes  No

**15. INSPECTIONS.** Elements of this contract are outside the inspection responsibility of the cognizant security office. (*If Yes, explain and identify specific areas or elements carved out and the activity responsible for inspections. Use Item 13 if additional space is needed.*)

Yes  No

\*Except for employees assigned to MSFC physically.

**16. CERTIFICATION AND SIGNATURE.** Security requirements stated herein are complete and adequate for safeguarding the classified information to be released or generated under this classified effort. All questions shall be referred to the official named below.

a. TYPED NAME OF CERTIFYING OFFICIAL Bradford W. Garland	b. TITLE COR Security	c. TELEPHONE ( <i>Include Area Code</i> ) (256) 544-4537
---	--------------------------	---

d. ADDRESS ( <i>Include Zip Code</i> ) NASA/Marshall Space Flight Center AD50 MSFC, AL 35812	<b>17. REQUIRED DISTRIBUTION</b> <input checked="" type="checkbox"/> a. CONTRACTOR <input type="checkbox"/> b. SUBCONTRACTOR <input checked="" type="checkbox"/> c. COGNIZANT SECURITY OFFICE FOR PRIME AND SUBCONTRACTOR <input type="checkbox"/> d. U.S. ACTIVITY RESPONSIBLE FOR OVERSEAS SECURITY ADMINISTRATION <input checked="" type="checkbox"/> e. ADMINISTRATIVE CONTRACTING OFFICER <input checked="" type="checkbox"/> f. OTHERS AS NECESSARY
e. SIGNATURE	

**ATTACHMENT J-20**

**NASA MSFC Safety & Mission Assurance Surveillance Plan  
Responsibilities and Requirements**

1. General:

This document sets forth the Quality Assurance (QA) functions to be performed for NASA Marshall Space Flight Center (MSFC) on Contract **NNM08XXXXC** in accordance with the scope of the contract Performance Work Statement (PWS), WBS 2.4.

This surveillance plan is written to perform surveillance activities at both the contract level and task level based on the products and services provided to MSFC NASA. This plan is tailored based on FAR Regulation Part 46, NPR 8735.2, "Management of Government Quality Assurance Functions for NASA Contracts" paragraph section Chapter 2, and MPR 5000.1, "Purchasing", Section 3.3. The plan shall be used for work performed on MSFC NASA space flight products; qualification articles for space flight hardware; associated Ground Support Equipment (GSE), designated special test equipment, development hardware as specified by applicable project/quality plans, engineering technical support, and other NASA/NASA Prime Contractor customer requested quality assurance support as specified in Customer Agreements with associated MSFC/customer quality assurance requirements, or direct Requests for Proposals (RFQ's) or subsequent contracts with documented NASA/delegated Agency quality assurance requirements. It also is written to support quality assurance activities for other customers as allowed by contract.

QD40, Safety, Reliability, & Quality Assurance (SR&QA) Policy & Assessment Department, Manufacturing & Test Assurance Team, and supporting inspection personnel from the S&MA Mission Services Contractor are responsible for performing Government inspection and test monitoring as specified in this document and the contract.

Detailed surveillance requirements are contained below in this document consisting of 2 parts, quality assurance surveillance at the contract level and task level. Both of which include support from the contractor in the functional performance of this plan.

- Part A covers the general surveillance of the Contractors quality management system and its performance.
- Part B covers the NASA MSFC quality assurance oversight activities performed for MSFC NASA, other NASA Centers, and NASA Prime Contractors work requested in the performance of NASA specific work under the specified Task Agreement.

This plan is being submitted to the Contractor to enable them to structure their quality planning requirements associated with procured manufacturing, integration, and technical support activities.

**Part A**

**General NASA Contract Quality Management System Monitoring and Surveillance**

The following is the surveillance process that the S&MA Representative (SMAR) will perform to assure that the contractor has performed under the contracted quality management system process required by the contract, and/or specified by COTR, and in support of the contractual monitoring process. Any specific quality requirements required by a task agreement will be submitted through the task agreement process by the program/project quality engineering representative.

2a. The MSFC NASA MSFC S&MA Contract Lead Directorate Representative shall be designated as the "S&MA Representative" (SMAR). Primary and Alternate personnel contact information:

Primary:

QD40/Vic Scheuplein  
Phone: 256-544-7390  
Fax: 256-544-4857  
Pager: 800-946-4646/Pin1457383  
Email: [vic.scheuplein@nasa.gov](mailto:vic.scheuplein@nasa.gov)  
Location: Building 4203/Room 2150

Alternate:

QD40/Ken Crane  
Phone: 256-544-8025  
Fax: 256-544-4155  
Alt Phone: 256-544-8414  
Email: [ken.crane@nasa.gov](mailto:ken.crane@nasa.gov)  
Location: Building 4203/Room 2233

1. The contractor shall submit a report monthly to the SMAR of all nonconformities initiated by the contractor. The report shall state whether they are minor or major nonconformances. The report shall list all opened, in-process, and closed nonconformance's and corrective/preventative actions taken. The nonconformance report listing section shall contain the document number, part/assembly number and/or system requirement, reason for the nonconformance, did NASA find the nonconformance, resolution, date of initiation, and if closed the date of closure. The corrective action listing section shall contain the document number, the related nonconformance, the root cause of the nonconformity, the required corrective actions, and the results of actions taken to insure they were effective.
2. The SMAR shall review the training records of the contractor every 6 months to review the competency maintenance of personnel that affect deliverable products and technical support.
3. The SMAR shall review the internal audit reports every 6 months to review the effective implementation and maintenance of the contractor's quality management system.
4. The SMAR shall review the contractor management review records to assess the continuing suitability, adequacy, and effectiveness of the contractor's management review process associated with the overall implemented quality management system.
5. The SMAR shall assure that the contractor is evaluated against their documented quality management system as required in MWI 5330.1. If the SMAR is not administrating the evaluation process then he shall be participating as a team member or observer.

**Part B Task Agreement Specific**

**B1. Fabrication/Integration Task Order - NASA, NASA Prime Contractor, NASA Subcontractor Inspection and Validation Support Process Requirements**

1. General, the SMAR will be responsible for overall contractor compliancy evaluation qualification and maintenance of the contractors contract and task specified quality management system processes as specified in WBS 2.4. For the Fabrication/Integration Task Agreement, Quality assurance activities noted within this document are defined as quality sensitive (See Section 3). All other activities not to be verified by the MSFC NASA Safety and Mission Assurance Directorate are considered non-quality sensitive and will be performed and accepted by the requesting organization through the Contracting Officer Technical Representative (COTR).

2. Program/Project Quality Representatives as specified herein will be either NASA and/or authorized Government Agency/Quality Assurance Support Contractor personnel.

3. Definitions:

a. Non-Quality Sensitive. A term used to identify equipment, hardware, software, or material not directly related to flight systems (e.g., mock-up, development hardware and software, industrial machinery, laboratory equipment). Hardware or software procured for development activities is non-quality sensitive unless the data resulting from development activities will be used in the “justification for qualification” of flight hardware, software, or flight-associated hardware. These items are inspected and test verified by the Process Operator (PO) or Testing Organization (TO), not by the NASA MSFC Safety and Mission Assurance Directorate. (MPR 8730.1)

b. Quality Sensitive. A term used to identify inspection and test verification by the Safety and Mission Assurance Directorate for flight hardware, flight software, and flight-associated ground support equipment and special test equipment; deliverable products that are to be assembled into a launch vehicle and associated equipment for testing, handling, launching, servicing, and maintaining a vehicle in space; qualification and re-qualification hardware; and hardware or software procured for development activities when the data resulting from development activities will be used in the “justification for qualification” of flight hardware, software, or flight-associated hardware. Hardware to be used in a hazardous operation may also be designated as quality sensitive by the responsible organization. (MPR 8730.1)

4. References:

a. NASA standards can be found at the following Internet link:  
<http://nodis3.gsfc.nasa.gov/>

b. MSFC Quality Management System documents referenced in this document (NPR 8735.2; MPR 8730.1, “Inspection and Testing”; MPR 8730.3, “Control of Nonconforming Product”; MWI 5330.1, “Evaluation/Audits of Contractors, Suppliers, and Vendors; QD-QA-015, “Special Process Audits”) can be found at the following Internet link:  
<https://webpub.nis.nasa.gov/directives/directives.htm>

**Final RFP NNM08125357R**

c. Sierra Lobo, Inc. SLI (QC-02) - SLI Quality Requirements, Quality Sensitive, 04/23/03 and/or latest revision.

d. Sierra Lobo, Inc. SLI (QC-03) - SLI Quality Requirements, Non-Quality Sensitive, 04/23/03 and/or latest revision.

**Note:** *These specific Sierra Lobo, Inc documents referenced above are only used due to current contractual requirements. The Contractor shall transition these referenced documents within 120 days of Authority to Proceed date.*

5. The contractor will submit to the S&MA Representative for review during procurement processing informal copies of all purchase orders from NASA all Prime Contractors, Government Agencies, and other customers.

6. Program/Project Quality Representatives shall submit all Government Mandatory Inspection Points (GMIP's), including the use of proposed contractor default quality requirements as noted in section 4 of this document, to the responsible planning personnel designated by the COTR, documented and signed by the Program/Project Quality Representative, as part of the work request process for all applicable contractor quality sensitive in-process product processing. MSFC NASA Mandatory Inspection Points to be added to all applicable work authorizing documents to be performed under this plan for in-process work and testing when transferred to NASA are enclosed within this section.

7. The QD40, Manufacturing and Test Assurance Team will have responsibilities for the performance of surveillance activities for NASA MSFC including the verification of Government & NASA Mandatory Inspection Points, based upon approved quality planning requirements, and the final acceptance of deliverable products as specified herein. QD40 S&MA Mission Service Support Contractor personnel may be utilized to perform inspections on hardware produced under this contract but will not be allowed to make final product acceptance.

Quality Assurance Team Representative Contact Information:

**Lead:** QD40/Shirley Blair  
**Phone:** 256-544-5607  
**Fax:** 256-544-3241  
**Email:** [Shirley.blair@nasa.gov](mailto:Shirley.blair@nasa.gov)  
**Pager:** 544-1183, #0710  
**Location:** Building 4705/Room A111B

**Alternate:** QD40/Darlene Hill  
**Phone:** 256-544-2253  
**Fax:** 256-544-3241  
**Email:** [Diana.d.hill@nasa.gov](mailto:Diana.d.hill@nasa.gov)  
**Pager:** 544-1183, #0711  
**Location:** Building 4705/Room A111C

The QD40 Manufacturing and Test Assurance Team and/or the assigned S&MA Mission Services Contractor inspectors as specified by the NASA will perform contractor Government Mandatory Inspection Point (GMIP) & NASA Mandatory Inspection Points (NMIP) inspection processing. S&MA will assure that inspection and test monitoring personnel including their S&MA Mission Services Contractor are certified or qualified to perform the special process activities in accordance with the standards and specifications documented in contract section 2.4.

## Final RFP NNM08125357R

Pre-defined work order NASA Mandatory Inspection Points (NMIP's). The following mandatory inspection points shall be placed on all quality sensitive work orders that will require transfer to NASA for processing:

1. Leak/proof testing using hydrostatic/gaseous pressure methods
2. Crane or forklift moves of PCH classified hardware (hand carries are not included)
3. In-process environmental testing
4. Nondestructive Evaluation (NDE), if not performed by the (EI 41) contractor
5. Electrical/functional testing and bonding checks

All additional inspection and NASA processing mandatory inspection points required by Program/Project Quality Representatives or the QD40 Manufacturing and Test Assurance Team shall be requested through the SMAR through to the COTR to evaluate the impact on contract delivery and/or inclusion into this plan as a GMIP. Minor changes to mandatory inspection points such as spelling, grammar, and changes that do not impact the delivery of the product and would not require configuration changes to the product, can be updated without COTR concurrence. The contractor shall route informational copies of orders containing GMIP and NMIP hold points to the QD40 Manufacturing and Test Assurance Team representatives prior to or concurrent with release for manufacture. QD40 Manufacturing and Test Assurance Team representatives shall review for proper GMIP & NMIP sequencing in the workflow.

GMIP processing nonconformances. Any product nonconformances found by the QD40 Manufacturing and Test Assurance Team, except during acceptance testing, will require the contractor to initiate his nonconformance system to resolve the nonconformity(ies) found. The contractor shall document that NASA found the nonconformity. For all test related anomalies/failures, the QD40 Manufacturing and Test Assurance Team shall initiate a NASA MSFC Test Discrepancy Record (TDR) and if necessary a Discrepancy Record (DR) as specified in MPR 8730.3 (See item B.8 below).

The QD40 Manufacturing and Test Assurance Team will be performing MSFC Organizational Instruction Process Audits to the requirements of QD-QA-015. Manufacturing and Test Assurance Team (QD40) and/or including their Mission Service Support Contractor personnel will be responsible to perform these audits. Process audits performed in conjunction with quality assurance inspection and monitoring activities shall be performed directly on a non-interference basis. Any nonconformance documentation generated by the audit process shall be processed as a contractor customer complaint process using as applicable their nonconformance and/or corrective/preventative action system process.

The QD40 Manufacturing and Test Assurance Team, Government personnel (whom may be supported by the Mission Services Support Contractor (NNM07AA74C) personnel who are limited to the review of the hardware and Acceptance Data Package (ADP)), shall perform final Government acceptance for all quality sensitive end item deliverables submitted under this contract by signing the DD250. Acceptance shall be made as specified in Section E in the contract with the required ADP as specified in the contract. Nonconformance's found by NASA during final acceptance will be documented on a NASA MSFC nonconformance report. The contractor shall respond to the NASA nonconformance report as to its validity. If they accept the nonconformance as an issue with final delivery, they will use their quality management system to resolve the nonconformance and resubmit the product to NASA for continued processing. If the

**Final RFP NNM08125357R**

contractor does not consider the NASA nonconformance report as valid, they shall document it using their corrective action process back through the COTR to NASA.

The SMAR, Program/Project Quality Representatives, and QD40 personnel will all be available to provide technical guidance and assistance to assure full implementation of NASA Contractual QA requirements.

QD40 Manufacturing and Test Assurance Team, the COTR, and the Contractor quality lead will be notified by Email when the Primary SMAR is not available in which case the Alternate Contact or other designated NASA QA representative as defined by the Manager of the SR&QA Policy and Assessment Department (QD40) will be delegated responsibility for technical guidance and assistance associated with this plan.

8. NASA in-process testing and/or integration nonconformances. NASA MSFC shall document all product nonconformities as specified in MPR 8730.3. Those nonconformities dispositioned as, "caused by the contractor" (to include "use-as-is", waiver/deviation, or re-grade) and/or returned to the contractor ("Returned to Vendor") for rework, repair, or scrap shall be processed by the contractor using their customer complaint process and as applicable their nonconformance and corrective/preventative action process system. The contractor shall respond to the NASA nonconformance report as to its validity. If the Contractor accepts the nonconformance as an issue with their product responsibilities, they will use their quality management system to resolve the nonconformance and resubmit the product to NASA for continued processing. If the contractor does not consider the NASA nonconformance report as valid, they shall document it using their corrective action process back through the COTR to NASA.

9. Products identified as non-quality sensitive will be accepted by the requesting organizations through the requirements set forth in the contract Section E.

**PART IV – REPRESENTATIONS AND INSTRUCTIONS**

**SECTION K – REPRESENTATIONS, CERTIFICATIONS, AND OTHER STATEMENTS OF OFFERORS OR RESPONDENTS**

**K.1 LISTING OF PROVISIONS INCORPORATED BY REFERENCE**

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) PROVISIONS

<u>Provision Number</u>	<u>Title</u>	<u>Date</u>
52.203-11	Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions	SEP 2005

II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) PROVISIONS

<u>Provision Number</u>	<u>Title</u>	<u>Date</u>
None included by reference.		

(End of Provision)

**K.2 52.204-8 – ANNUAL REPRESENTATIONS AND CERTIFICATIONS (JAN 2006)**

(a) (1) The North American Industry Classification System (NAICS) code for this acquisition is **541710**.

(2) The small business size standard is **1000**.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) (1) If the clause at 52.204-7, Central Contractor Registration, is included in this solicitation, paragraph (c) of this provision applies.

(2) If the clause at 52.204-7 is not included in this solicitation, and the offeror is currently registered in CCR, and has completed the ORCA electronically, the offeror may choose to use paragraph (c) of this provision instead of completing the corresponding individual representations and certification in the solicitation. The offeror shall indicate which option applies by checking one of the following boxes:

(i) Paragraph (c) applies.

(ii) Paragraph (c) does not apply and the offeror has completed the individual representations and certifications in the solicitation.

Final RFP NNM08125357R

(c) The offeror has completed the annual representations and certifications electronically via the Online Representations and Certifications Application (ORCA) website at <http://orca.bpn.gov> . After reviewing the ORCA database information, the offeror verifies by submission of the offer that the representations and certifications currently posted electronically have been entered or updated within the last 12 months, are current, accurate, complete, and applicable to this solicitation (including the business size standard applicable to the NAICS code referenced for this solicitation), as of the date of this offer and are incorporated in this offer by reference (see FAR 4.1201); except for the changes identified below [offeror to insert changes, identifying change by clause number, title, date]. These amended representation(s) and/or certification(s) are also incorporated in this offer and are current, accurate, and complete as of the date of this offer.

FAR Clause	Title	Date	Change

Any changes provided by the offeror are applicable to this solicitation only, and do not result in an update to the representations and certifications posted on ORCA.

(End of Provision)

**K.3 COST ACCOUNTING STANDARDS NOTICES AND CERTIFICATION (FAR 52.230-1) (JUN 2000)**

Note: This notice does not apply to small businesses or foreign governments. This notice is in three parts, identified by Roman numerals I through III.

Offerors shall examine each part and provide the requested information in order to determine Cost Accounting Standards (CAS) requirements applicable to any resultant contract. If the offeror is an educational institution, Part II does not apply unless the contemplated contract will be subject to full or modified CAS coverage pursuant to 48 CFR 9903.201-2(c)(5) or 9903.201-2(c)(6), respectively.

**I. Disclosure Statement-Cost Accounting Practices and Certification**

(a) Any contract in excess of \$500,000 resulting from this solicitation will be subject to the requirements of the Cost Accounting Standards Board (48 CFR Chapter 99), except for those contracts which are exempt as specified in 48 CFR 9903.201-1.

(b) Any offeror submitting a proposal which, if accepted, will result in a contract subject to the requirements of 48 CFR Chapter 99 must, as a condition of contracting, submit a Disclosure Statement as required by 48 CFR 9903.202. When required, the Disclosure Statement must be submitted as a part of the offeror's proposal under this solicitation unless the offeror has already submitted a Disclosure Statement disclosing the practices used in connection with the pricing of this proposal. If an applicable Disclosure Statement has already been submitted, the offeror may satisfy the requirement for submission by providing the information requested in paragraph

(c) of Part I of this provision.

**Caution:** In the absence of specific regulations or agreement, a practice disclosed in a Disclosure Statement shall not, by virtue of such disclosure, be deemed to be a proper, approved, or agreed-to practice for pricing proposals or accumulating and reporting contract performance cost data.

Final RFP NNM08125357R

(c) Check the appropriate box below:

(1) *Certificate of Concurrent Submission of Disclosure Statement.* The offeror hereby certifies that, as a part of the offer, copies of the Disclosure Statement have been submitted as follows:

(i) Original and one copy to the cognizant Administrative Contracting Officer (ACO) or cognizant Federal agency official authorized to act in that capacity (Federal official), as applicable; and

(ii) One copy to the Cognizant Federal auditor.

(Disclosure must be on Form No. CASB DS-1 or CASB DS-2, as applicable. Forms may be obtained from the Cognizant ACO or Federal official and/or from the loose-leaf version of the Federal Acquisition Regulation.)

Date of Disclosure Statement: \_\_\_\_\_

Name and Address of Cognizant ACO or Federal Official Where Filed:

\_\_\_\_\_

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the Disclosure Statement.

(2) *Certificate of Previously Submitted Disclosure Statement.* The offeror hereby certifies that the required Disclosure Statement was filed as follows:

Date of Disclosure Statement: \_\_\_\_\_

Name and Address of Cognizant ACO or Federal Official Where Filed:

\_\_\_\_\_

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the applicable Disclosure Statement.

(3) *Certificate of Monetary Exemption.* The offeror hereby certifies that the offeror, together with all divisions, subsidiaries, and affiliates under common control, did not receive net awards of negotiated prime contracts and subcontracts subject to CAS totaling \$50 million or more in the cost accounting period immediately preceding the period in which this proposal was submitted. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the Contracting Officer immediately.

(4) *Certificate of Interim Exemption.* The offeror hereby certifies that (i) the offeror first exceeded the monetary exemption for disclosure, as defined in (3) of this subsection, in the cost accounting period immediately preceding the period in which this offer was submitted and (ii) in accordance with 48 CFR 9903.202-1, the offeror is not yet required to submit a Disclosure Statement. The offeror further certifies that if an award resulting from this proposal has not been made within 90 days after the end of that period, the offeror will immediately submit a revised certificate to the Contracting Officer, in the form specified under paragraph (c)(1) or (c)(2) of Part I of this provision, as appropriate, to verify submission of a completed Disclosure Statement.

**Caution:** Offerors currently required to disclose because they were awarded a CAS-covered prime contract or subcontract of \$50 million or more in the current cost accounting period may not claim

**Final RFP NNM08125357R**

this exemption (4). Further, the exemption applies only in connection with proposals submitted before expiration of the 90-day period following the cost accounting period in which the monetary exemption was exceeded.

**II. Cost Accounting Standards-Eligibility for Modified Contract Coverage**

If the offeror is eligible to use the modified provisions of 48 CFR 9903.201-2(b) and elects to do so, the offeror shall indicate by checking the box below. Checking the box below shall mean that the resultant contract is subject to the Disclosure and Consistency of Cost Accounting Practices clause in lieu of the Cost Accounting Standards clause.

The offeror hereby claims an exemption from the Cost Accounting Standards clause under the provisions of 48 CFR 9903.201-2(b) and certifies that the offeror is eligible for use of the Disclosure and Consistency of Cost Accounting Practices clause because during the cost accounting period immediately preceding the period in which this proposal was submitted, the offeror received less than \$50 million in awards of CAS-covered prime contracts and subcontracts. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the Contracting Officer immediately.

**Caution:** An offeror may not claim the above eligibility for modified contract coverage if this proposal is expected to result in the award of a CAS-covered contract of \$50 million or more or if, during its current cost accounting period, the offeror has been awarded a single CAS-covered prime contract or subcontract of \$50 million or more.

**III. Additional Cost Accounting Standards Applicable to Existing Contracts**

The offeror shall indicate below whether award of the contemplated contract would, in accordance with paragraph (a)(3) of the Cost Accounting Standards clause, require a change in established cost accounting practices affecting existing contracts and subcontracts.

yes  no

(End of Provision)

**K.4 PROPOSAL DISCLOSURE—COST ACCOUNTING PRACTICE CHANGES (FAR 52.230-7) (APR 2005)**

The offeror shall check “yes” below if the contract award will result in a required or unilateral change in cost accounting practice, including unilateral changes requested to be desirable changes.

yes  no

If the offeror checked “Yes” above, the offeror shall

(1) Prepare the price proposal in response to the solicitation using the changed practice for the period of performance for which the practice will be used; and

(2) Submit a description of the changed cost accounting practice to the Contracting Officer and the Cognizant Federal Agency Official as pricing support for the proposal.

(End of Provision)

**K.5 52.219-22 – SMALL DISADVANTAGED BUSINESS STATUS (OCT 1999)**

(a) *General.* This provision is used to assess an offeror's small disadvantaged business status for the purpose of obtaining a benefit on this solicitation. Status as a small business and status as a small disadvantaged business for general statistical purposes is covered by the provision at FAR 52.219-1, Small Business Program Representation.

(b) Representations.

(1) *General.* The offeror represents, as part of its offer, that it is a small business under the size standard applicable to this acquisition; and either—

\_\_\_(i) It has received certification by the Small Business Administration as a small disadvantaged business concern consistent with 13 CFR 124, Subpart B; and

(A) No material change in disadvantaged ownership and control has occurred since its certification;

(B) Where the concern is owned by one or more disadvantaged individuals, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(C) It is identified, on the date of its representation, as a certified small disadvantaged business concern in the database maintained by the Small Business Administration (PRO-Net); or

\_\_\_(ii) It has submitted a completed application to the Small Business Administration or a Private Certifier to be certified as a small disadvantaged business concern in accordance with 13 CFR 124, Subpart B, and a decision on that application is pending, and that no material change in disadvantaged ownership and control has occurred since its application was submitted.

(2) \_\_\_ *For Joint Ventures.* The offeror represents, as part of its offer, that it is a joint venture that complies with the requirements at 13 CFR 124.1002(f) and that the representation in paragraph (b)(1) of this provision is accurate for the small disadvantaged business concern that is participating in the joint venture. [*The offeror shall enter the name of the small disadvantaged business concern that is participating in the joint venture: \_\_\_\_\_.*]

(c) *Penalties and Remedies.* Anyone who misrepresents any aspects of the disadvantaged status of a concern for the purposes of securing a contract or subcontract shall:

(1) Be punished by imposition of a fine, imprisonment, or both;

(2) Be subject to administrative remedies, including suspension and debarment; and

(3) Be ineligible for participation in programs conducted under the authority of the Small Business Act.

(End of Provision)

**K.6 52.223-3 – HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA (JAN 1997) Alternate I (JUL 1995)**

(a) "Hazardous material," as used in this clause, includes any material defined as hazardous under the latest version of Federal Standard No. 313 (including revisions adopted during the term of the contract).

(b) The offeror must list any hazardous material, as defined in paragraph (a) of this clause, to be delivered under this contract. The hazardous material shall be properly identified and include any applicable identification number, such as National Stock Number or Special Item Number. This information shall also be included on the Material Safety Data Sheet submitted under this contract.

Material <i>(If none, insert "None")</i>	Identification No.

(c) This list must be updated during performance of the contract whenever the Contractor determines that any other material to be delivered under this contract is hazardous.

(d) The apparently successful offeror agrees to submit, for each item as required prior to award, a Material Safety Data Sheet, meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard No. 313, for all hazardous material identified in paragraph (b) of this clause. Data shall be submitted in accordance with Federal Standard No. 313, whether or not the apparently successful offeror is the actual manufacturer of these items. Failure to submit the Material Safety Data Sheet prior to award may result in the apparently successful offeror being considered nonresponsible and ineligible for award.

(e) If, after award, there is a change in the composition of the item(s) or a revision to Federal Standard No. 313, which renders incomplete or inaccurate the data submitted under paragraph (d) of this clause, the Contractor shall promptly notify the Contracting Officer and resubmit the data.

(f) Neither the requirements of this clause nor any act or failure to act by the Government shall relieve the Contractor of any responsibility or liability for the safety of Government, Contractor, or subcontractor personnel or property.

(g) Nothing contained in this clause shall relieve the Contractor from complying with applicable Federal, State, and local laws, codes, ordinances, and regulations (including the obtaining of licenses and permits) in connection with hazardous material.

(h) The Government's rights in data furnished under this contract with respect to hazardous material are as follows:

(1) To use, duplicate and disclose any data to which this clause is applicable. The purposes of this right are to --

(i) Apprise personnel of the hazards to which they may be exposed in using, handling, packaging, transporting, or disposing of hazardous materials;

**Final RFP NNM08125357R**

(ii) Obtain medical treatment for those affected by the material; and

(iii) Have others use, duplicate, and disclose the data for the Government for these purposes.

(2) To use, duplicate, and disclose data furnished under this clause, in accordance with subparagraph (h)(1) of this clause, in precedence over any other clause of this contract providing for rights in data.

(3) The Government is not precluded from using similar or identical data acquired from other sources.

(i) Except as provided in paragraph (i)(2), the Contractor shall prepare and submit a sufficient number of Material Safety Data Sheets (MSDS's), meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard No. 313, for all hazardous materials identified in paragraph (b) of this clause.

(1) For items shipped to consignees, the Contractor shall include a copy of the MSDS's with the packing list or other suitable shipping document which accompanies each shipment. Alternatively, the Contractor is permitted to transmit MSDS's to consignees in advance of receipt of shipments by consignees, if authorized in writing by the Contracting Officer.

(2) For items shipped to consignees identified by mailing address as agency depots, distribution centers or customer supply centers, the Contractor shall provide one copy of the MSDS's in or on each shipping container. If affixed to the outside of each container, the MSDS's must be placed in a weather resistant envelope.

(End of Clause)

**K.7 52.223-13 – CERTIFICATION OF TOXIC CHEMICAL RELEASE REPORTING (AUG 2003)**

(a) Executive Order 13148, of April 21, 2000, Greening the Government through Leadership in Environmental Management, requires submission of this certification as a prerequisite for contract award.

(b) By signing this offer, the offeror certifies that --

(1) As the owner or operator of facilities that will be used in the performance of this contract that are subject to the filing and reporting requirements described in section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106), the offeror will file and continue to file for such facilities for the life of the contract the Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of EPCRA and section 6607 of PPA; or

(2) None of its owned or operated facilities to be used in the performance of this contract is subject to the Form R filing and reporting requirements because each such facility is exempt for at least one of the following reasons: *[Check each block that is applicable.]*

**Final RFP NNM08125357R**

\* (i) The facility does not manufacture, process, or otherwise use any toxic chemicals listed in 40 CFR 372.65;

\* (ii) The facility does not have 10 or more full-time employees as specified in section 313(b)(1)(A) of EPCRA, 42 U.S.C. 11023(b)(1)(A);

\* (iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

\* (iv) The facility does not fall within the following Standard Industrial Classification (SIC) codes or their corresponding North American Industry Classification System sectors:

(A) Major group code 10 (except 1011, 1081, and 1094).

(B) Major group code 12 (except 1241).

(C) Major group codes 20 through 39.

(D) Industry code 4911, 4931, 4939 (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce).

(E) Industry code 4953 (limited to facilities regulated under the Resource Conservation and Recovery Act, Subtitle C (42 U.S.C. 6921, *et seq.*)), or 5169, 5171, 7389 (limited to facilities primarily engaged in solvent recovery services on a contract or fee basis); or

\* (v) The facility is not located within any State of the United States or its outlying areas.

(End of Provision)

**K.8 1852.245-79 USE OF GOVERNMENT-OWNED PROPERTY (JULY 1997)**

(a) The offeror ( ) does, ( ) does not intend to use in performance of any contract awarded as a result of this solicitation existing Government-owned facilities (real property or plant equipment), special test equipment, or special tooling (including any property offered by this solicitation). The offeror shall identify any offered property not intended to be used. If the offeror does intend to use any of the above items, the offeror must furnish the following information required by Federal Acquisition Regulation (FAR) 45.205(b), and NASA FAR Supplement (NFS) 1845.102-71:

(1) Identification and quantity of each item. Include the item's acquisition cost if it is not property offered by this solicitation.

(2) For property not offered by this solicitation, identification of the Government contract under which the property is accountable and written permission for its use from the cognizant Contracting Officer.

(3) Amount of rent, calculated in accordance with FAR 45.403 and the clause at FAR 52.245-9, Use and Charges, unless the property has been offered on a rent-free basis by this solicitation.

(4) The dates during which the property will be available for use, and if it is to be used in more than one contract, the amounts of respective uses in sufficient detail to support proration of the rent. This information is not required for property offered by this solicitation.

(b) The offeror ( ) does, ( ) does not request additional Government-provided property for use in performing any contract awarded as a result of this solicitation. If the offeror requests additional

**Final RFP NNM08125357R**

Government-provided property, the offeror must furnish --

- (1) Identification of the property, quantity, and estimated acquisition cost of each item; and
- (2) The offeror's written statement of its inability to obtain facilities as prescribed by FAR 45.302-1(a)(4).

(c) If the offeror intends to use any Government property (paragraph (a) or (b) of this provision), the offer must also furnish the following:

(1) The date of the last Government review of the offeror's property control and accounting system, actions taken to correct any deficiencies found, and the name and telephone number of the cognizant property administrator.

(2) A statement that the offeror has reviewed, understands, and can comply with all property management and accounting procedures in the solicitation, FAR Subpart 45.5, and NFS Subparts 1845.5 and 1845.71.

(3) A statement indicating whether or not the costs associated with paragraph (c)(2) of this provision, including plant clearance and/or plant reconversion costs, are included in its cost proposal.

(End of Provision)

**K.9 52.223-9 ESTIMATE PERCENTAGE OF RECOVERED MATERIAL CONTENT FOR EPA DESIGNATED PRODUCTS (AUG 2000)**

(a) *Definitions.* As used in this clause—

“Postconsumer material” means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Postconsumer material is a part of the broader category of “recovered material.”

“Recovered material” means waste materials and by-products recovered or diverted from solid waste, but the term does not include those materials and by-products generated from, and commonly reused within, an original manufacturing process.

(b) The Contractor, on completion of this contract, shall—

(1) Estimate the percentage of the total recovered material used in contract performance, including, if applicable, the percentage of postconsumer material content; and

(2) Submit this estimate to \_\_\_\_\_ [*Contracting Officer complete in accordance with agency procedures*].

(End of clause)

**K.10 52.222-22 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FEB 1999)**

The offeror represents that –

(a) It  has,  has not participated in a previous contract or subcontract subject to the Equal Opportunity clause of this solicitations:

(b) It  has,  has not filed all required compliance reports; and

(c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

(End of provision)

**K.11 52.237-8 RESTRICTION ON SEVERANCE PAYMENTS TO FOREIGN NATIONALS (AUG 2003)**

(a) The Federal Acquisition Regulation (FAR), at 31.205-6(g)(6), limits the cost allowability of severance payments to foreign nationals employed under a service contract performed outside the United States unless the agency grants a waiver pursuant to FAR 37.113-1 before contract award.

(b) In making the determination concerning the granting of a waiver, the agency will determine that-

(1) The application of the severance pay limitations to the contract would adversely affect the continuation of a program, project, or activity that provides significant support services for -

(i) Members of the armed forces stationed or deployed outside the United States; or

(ii) Employees of an executive agency posted outside the United States;

(2) The Contractor has taken (or has established plans to take) appropriate actions within its control to minimize the amount and number of incidents of the payment of severance pay to employees under the contract who are foreign nationals; and

(3) The payment of severance pay is necessary in order to comply with a law that is generally applicable to a significant number of businesses in the country in which the foreign national receiving the payment performed services under the contract, or is necessary to comply with a collective bargaining agreement.

(End of provision)

**[END OF SECTION]**

TOTAL PROGRAM COST CONTINUED  
REAL YEAR DOLLARS

COMPANY NAME: \_\_\_\_\_

PWS LEVEL: \_\_\_\_\_

PWS TITLE/DESCRIPTION: \_\_\_\_\_

COST ELEMENTS (from Form CA)	BASE YEAR		OPTION YEAR 1		OPTION YEAR 2		OPTION YEAR 3		OPTION YEAR 4		CONTRACT TOTAL	
	HOURS	AMOUNT	HOURS	AMOUNT	HOURS	AMOUNT	HOURS	AMOUNT	HOURS	AMOUNT	HOURS	AMOUNT
Manager		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Business Administration		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Quality Assurance Manager		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Producibility		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Engineer		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Operations Manager		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Senior Engineer		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Mechanical Engineer		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Physicist		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Data Analyst		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Chemist		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Test Coordinator		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Accounting Clerk I		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Accounting Clerk II		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Accounting Clerk III		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Order Clerk I		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Order Clerk II		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Safety Training Specialist		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Quality Control/Mechanical Inspector		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Laboratory Technician		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Manufacturing Process Planner/Estimator		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Production Control Clerk		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Material Expeditor		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Metal Cleaner, Immersion		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Painter		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Aerospace Structural Welder		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Welder, Combination		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Maintenance Trades Helper		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Machinery Maintenance Mechanic		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Machine Tool Operator		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Sheet-metal Worker		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
CNC Programmer		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Tool and Die Maker/Tool & Parts Attendant		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Electronics Planner/Lead		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Electronics Mechanic, Grade 10		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Electronics Worker, Grade 8		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Electronics Technician, Maintenance II		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Engineering Technician I		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Engineering Technician II		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Engineering Technician III		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Engineering Technician IV		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Engineering Technician V		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Library Technician		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Technical Writer II		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Secretary I		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Secretary II		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Secretary III		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Drafter/CAD Operator III		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
Drafter/CAD Operator IV		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	0.0	\$0.00
<b>REGULAR TIME LABOR COST</b>	<b>0</b>	<b>\$0</b>	<b>0</b>	<b>\$0</b>	<b>0</b>	<b>\$0</b>	<b>0</b>	<b>\$0</b>	<b>0</b>	<b>\$0</b>	<b>0</b>	<b>\$0</b>

[END OF PAGE]

TOTAL PROGRAM COST CONTINUED

COMPANY NAME: \_\_\_\_\_

COST ELEMENTS	BASE YEAR		OPTION YEAR 1		OPTION YEAR 2		OPTION YEAR 3		OPTION YEAR 4		CONTRACT TOTAL	
	HOURS	AMOUNT	HOURS	AMOUNT	HOURS	AMOUNT	HOURS	AMOUNT	HOURS	AMOUNT	HOURS	AMOUNT
Overtime Premium		\$0		\$0		\$0		\$0		\$0	0.0	\$0
Shift Premium		\$0		\$0		\$0		\$0		\$0	0.0	\$0
<b>TOTAL DIRECT LABOR</b>	<b>0</b>	<b>\$0</b>	<b>0</b>	<b>\$0</b>	<b>0</b>	<b>\$0</b>	<b>0</b>	<b>\$0</b>	<b>0</b>	<b>\$0</b>	<b>0</b>	<b>\$0</b>
<b>RATES &amp; FACTORS</b>												
Payroll Additives	0.00%	\$0	0.00%	\$0	0.00%	\$0	0.00%	\$0	0.00%	\$0		\$0
Fringe Benefits	0.00%	\$0	0.00%	\$0	0.00%	\$0	0.00%	\$0	0.00%	\$0		\$0
Overhead - Other	0.00%	\$0	0.00%	\$0	0.00%	\$0	0.00%	\$0	0.00%	\$0		\$0
<b>INDIRECT LABOR</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>
<b>TOTAL BURDENED LABOR</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>
Direct Materials & Incidental Subcontracting		\$275,000		\$275,000		\$275,000		\$275,000		\$275,000		\$275,000
Subcontractor Burden	0.00%	\$0	0.00%	\$0	0.00%	\$0	0.00%	\$0	0.00%	\$0		\$0
Relocation		\$0		\$0		\$0		\$0		\$0		\$0
Insurance		\$0		\$0		\$0		\$0		\$0		\$0
All Other		\$0		\$0		\$0		\$0		\$0		\$0
<b>OTHER DIRECT COSTS (ODC)</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>	<b>0</b>	<b>\$0</b>
General & Administrative	0.00%	\$0	0.00%	\$0	0.00%	\$0	0.00%	\$0	0.00%	\$0		\$0
Cost of Money		\$0		\$0		\$0		\$0		\$0		\$0
<b>ESTIMATED FEE-BEARING COST</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>
Award Fee	0.00%	\$0	0.00%	\$0	0.00%	\$0	0.00%	\$0	0.00%	\$0		\$0
<b>ESTIMATED COST PLUS AWARD FEE</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>		<b>\$0</b>
General Operating Materials, Supplies, Tools & Equipment		\$325,000		\$325,000		\$325,000		\$325,000		\$325,000		\$1,625,000
Travel		\$30,000		\$30,000		\$30,000		\$30,000		\$30,000		\$150,000
Training		\$10,000		\$10,000		\$10,000		\$10,000		\$10,000		\$10,000
Burden/Handling Charge		\$0		\$0		\$0		\$0		\$0		\$0
<b>TOTAL NON-FEE BEARING ODC</b>		<b>\$365,000</b>		<b>\$365,000</b>		<b>\$365,000</b>		<b>\$365,000</b>		<b>\$365,000</b>		<b>\$1,825,000</b>
<b>GRAND TOTAL ESTIMATED VALUE</b>		<b>\$640,000</b>		<b>\$640,000</b>		<b>\$640,000</b>		<b>\$640,000</b>		<b>\$640,000</b>		<b>\$1,775,000</b>

[END OF FORM]

**ATTACHMENT L-1  
COST RELATED FORMS**

Form/Exhibit No.	Title	Pages
CA	Total Program Cost	L-1-2 – L-1-4
CB	Work Year Equivalent (WYE) by Labor Category	L-1-5 – L-1-6
CC	Labor Costs	L-1-7 – L-1-17
CD	Payroll Additives Rate Development – Real Year Dollars	L-1-18
CE	Fringe Benefits	L-1-19
CF	Purchased Materials, Supplies, Equipment and Travel	L-1-20
CG	Overhead & G&A – Real Year Dollars	L-1-21
CH	Personnel and Fringe Benefits Policies	L-1-22
CI	Phase In Cost	L-1-23 – L-1-25
CJ	IDIQ Fully Burdened Rates	L-1-26 – L-1-30
DD Form 1861	Contract Facilities Capital Cost of Money	L-1-30

[END OF PAGE]

PAGE L-1-1

**TOTAL PROGRAM COST  
REAL YEAR DOLLARS**

COMPANY NAME: \_\_\_\_\_

PWS LEVEL: \_\_\_\_\_

PWS TITLE/DESCRIPTION: \_\_\_\_\_

REGULAR TIME LABOR RATES		BASE YEAR	OPTION YEAR 1	OPTION YEAR 2	OPTION YEAR 3	OPTION YEAR 4
1	Manager	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2	Business Administration	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
3	Quality Assurance Manager	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
4	Producibility	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
5	Engineer	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
6	Operations Manager	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
7	Senior Engineer	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
8	Mechanical Engineer	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
9	Physicist	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
10	Data Analyst	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
11	Chemist	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
12	Test Coordinator	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
13	Accounting Clerk I	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
14	Accounting Clerk II	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
15	Accounting Clerk III	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
16	Order Clerk I	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
17	Order Clerk II	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
18	Safety Training Specialist	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
19	Quality Control/Mechanical Inspector	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
20	Laboratory Technician	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
21	Manufacturing Process Planner/Estimator	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
22	Production Control Clerk	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
23	Material Expeditor	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
24	Metal Cleaner, Immersion	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
25	Painter	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
26	Aerospace Structural Welder	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
27	Welder, Combination	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
28	Maintenance Trades Helper	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
29	Machinery Maintenance Mechanic	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
30	Machine Tool Operator	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
31	Sheet-metal Worker	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
32	CNC Programmer	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
33	Tool and Die Maker/Tool & Parts Attendant	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
34	Electronics Planner/Lead	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
35	Electronics Mechanic, Grade 10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
36	Electronics Worker, Grade 8	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
37	Electronics Technician, Maintenance II	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
38	Engineering Technician I	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
39	Engineering Technician II	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
40	Engineering Technician III	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
41	Engineering Technician IV	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
42	Engineering Technician V	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
43	Library Technician	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
44	Technical Writer II	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
45	Secretary I	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
46	Secretary II	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
47	Secretary III	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
48	Drafter/CAD Operator III	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
49	Drafter/CAD Operator IV	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

[END OF PAGE]

**WORK YEAR EQUIVALENT (WYE)  
BY LABOR CATEGORY**

COMPANY NAME: \_\_\_\_\_

PWS LEVEL: \_\_\_\_\_

PWS TITLE/DESCRIPTION: \_\_\_\_\_

WD - Wage Determination

LABOR CATEGORY (Bidders may propose additional Job Titles)	BASE YEAR	OPTION YEAR 1	OPTION YEAR 2	OPTION YEAR 3	OPTION YEAR 4
<b>EXEMPT</b>	0	0	0	0	0
Manager	0	0	0	0	0
Business Administration	0	0	0	0	0
Quality Assurance Manager	0	0	0	0	0
Engineer	0	0	0	0	0
Operations Manager	0	0	0	0	0
Senior Engineer	0	0	0	0	0
Mechanical Engineer	0	0	0	0	0
Physicist	0	0	0	0	0
Data Analyst	0	0	0	0	0
Chemist	0	0	0	0	0
Test Coordinator	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
<b>SCA</b>					
Producibility	0	0	0	0	0
Accounting Clerk I	0	0	0	0	0
Accounting Clerk II	0	0	0	0	0
Accounting Clerk III	0	0	0	0	0
Order Clerk I	0	0	0	0	0
Order Clerk II	0	0	0	0	0
Safety/Training Specialist	0	0	0	0	0
Quality Control (Mechanical Inspector)	0	0	0	0	0
Laboratory Technician	0	0	0	0	0
Manufacturing Process Planner/Estimator	0	0	0	0	0
Production Control Clerk	0	0	0	0	0
Material Expediter	0	0	0	0	0
Metal Cleaner, Immersion	0	0	0	0	0
Painter	0	0	0	0	0
Aerospace Structural Welder	0	0	0	0	0
Welder, Combination	0	0	0	0	0
Maintenance Trades Helper	0	0	0	0	0
Machinery Maintenance Mechanic	0	0	0	0	0
Machine Tool Operator	0	0	0	0	0
Sheet-metal Worker	0	0	0	0	0
CNC Programmer	0	0	0	0	0
Tool and Die Maker/Tool and Parts Attendant	0	0	0	0	0

[END OF FORM]

**WORK YEAR EQUIVALENT (WYE)  
BY LABOR CATEGORY**

COMPANY NAME: \_\_\_\_\_

PWS LEVEL: \_\_\_\_\_

PWS TITLE/DESCRIPTION: \_\_\_\_\_

WD - Wage Determination

Electronics Planner/Lead	0	0	0	0	0
Electronics Mechanic, Grade 10	0	0	0	0	0
Electronics Worker, Grade 8	0	0	0	0	0
Electronics Technician, Maintenance II	0	0	0	0	0
Engineering Technician I	0	0	0	0	0
Engineering Technician II	0	0	0	0	0
Engineering Technician III	0	0	0	0	0
Engineering Technician IV	0	0	0	0	0
Engineering Technician V	0	0	0	0	0
Library Technician	0	0	0	0	0
Technical Writer II	0	0	0	0	0
Secretary I	0	0	0	0	0
Secretary II	0	0	0	0	0
Secretary III	0	0	0	0	0
Drafter/CAD Operator III	0	0	0	0	0
Drafter/CAD Operator IV	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
<b>GRAND TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

[END OF FORM]

LABOR COSTS

COMPANY NAME: \_\_\_\_\_

	BASE YEAR	OPTION YEAR 1	OPTION YEAR 2	OPTION YEAR 3	OPTION YEAR 4	GRAND TOTAL
<b>Escalation Rate</b>						
<b>1</b>						
<b>Manager</b>						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
<b>TOTAL COST</b>						
<b>2</b>						
<b>Business Administration</b>						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
<b>TOTAL COST</b>						
<b>3</b>						
<b>Quality Assurance Manager</b>						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
<b>TOTAL COST</b>						
<b>4</b>						
<b>Producibility</b>						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
<b>TOTAL COST</b>						
<b>5</b>						
<b>Engineer</b>						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
<b>TOTAL COST</b>						

[END OF PAGE]

COMPANY NAME: \_\_\_\_\_

	BASE YEAR	OPTION YEAR 1	OPTION YEAR 2	OPTION YEAR 3	OPTION YEAR 4	GRAND TOTAL
<b>Escalation Rate</b>						
6						
Operations Manager						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
7						
Senior Engineer						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
8						
Mechanical Engineer						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME BASE						
TOTAL COST						
9						
Physicist						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
10						
Data Analyst						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						

[END OF PAGE]

COMPANY NAME: \_\_\_\_\_

	BASE YEAR	OPTION YEAR 1	OPTION YEAR 2	OPTION YEAR 3	OPTION YEAR 4	GRAND TOTAL
<b>Escalation Rate</b>						
11						
<b>Chemist</b>						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
<b>TOTAL COST</b>						
12						
<b>Test Coordinator</b>						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
<b>TOTAL COST</b>						
13						
<b>Accounting Clerk I</b>						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
<b>TOTAL COST</b>						
14						
<b>Accounting Clerk II</b>						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
<b>TOTAL COST</b>						
15						
<b>Accounting Clerk III</b>						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
<b>TOTAL COST</b>						

[END OF PAGE]

COMPANY NAME: \_\_\_\_\_

	BASE YEAR	OPTION YEAR 1	OPTION YEAR 2	OPTION YEAR 3	OPTION YEAR 4	GRAND TOTAL
<b>Escalation Rate</b>						
16						
Order Clerk I						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
17						
Order Clerk II						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
18						
Safety Training Specialist						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
19						
Quality Control/Mechanical Inspector						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
20						
Laboratory Technician						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						

[END OF PAGE]

COMPANY NAME: \_\_\_\_\_

	BASE YEAR	OPTION YEAR 1	OPTION YEAR 2	OPTION YEAR 3	OPTION YEAR 4	GRAND TOTAL
--	--------------	---------------------	---------------------	---------------------	---------------------	----------------

Escalation Rate

21

Manufacturing Process Planner/Estimator						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						

22

Production Control Clerk						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						

23

Material Expeditor						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						

24

Metal Cleaner, Immersion						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						

[END OF PAGE]

COMPANY NAME: \_\_\_\_\_

	BASE YEAR	OPTION YEAR 1	OPTION YEAR 2	OPTION YEAR 3	OPTION YEAR 4	GRAND TOTAL
<b>Escalation Rate</b>						
25						
Painter						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
26						
Aerospace Structural Welder						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
27						
Welder, Combination						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
28						
Maintenance Trades Helper						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
29						
Machinery Maintenance Mechanic						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						

[END OF PAGE]

COMPANY NAME: \_\_\_\_\_

	BASE YEAR	OPTION YEAR 1	OPTION YEAR 2	OPTION YEAR 3	OPTION YEAR 4	GRAND TOTAL
<b>Escalation Rate</b>						
30						
Machine Tool Operator						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
31						
Sheet-metal Worker						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
32						
CNC Programmer						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
33						
Tool and Die Maker/Tool & Parts Attendant						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
34						
Electronics Planner/Lead						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						

COMPANY NAME: \_\_\_\_\_

	BASE YEAR	OPTION YEAR 1	OPTION YEAR 2	OPTION YEAR 3	OPTION YEAR 4	GRAND TOTAL
<b>Escalation Rate</b>						
35						
Electronics Mechanic, Grade 10						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
36						
Electronics Worker, Grade 8						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
37						
Electronics Technician, Maintenance II						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
38						
Engineering Technician I						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
39						
Engineering Technician II						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						

COMPANY NAME: \_\_\_\_\_

	BASE YEAR	OPTION YEAR 1	OPTION YEAR 2	OPTION YEAR 3	OPTION YEAR 4	GRAND TOTAL
<b>Escalation Rate</b>						
40						
Engineering Technician III						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
41						
Engineering Technician IV						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
42						
Engineering Technician V						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
43						
Library Technician						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
44						
Technical Writer II						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						

[END OF PAGE]

COMPANY NAME: \_\_\_\_\_

	BASE YEAR	OPTION YEAR 1	OPTION YEAR 2	OPTION YEAR 3	OPTION YEAR 4	GRAND TOTAL
<b>Escalation Rate</b>						
45						
Secretary I						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
46						
Secretary II						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
47						
Secretary III						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
48						
Drafter/CAD Operator III						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
49						
Drafter/CAD Operator IV						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						
<b>TOTAL MISSION CONTRACT</b>						
WORK YEAR EQUIVALENTS						
HOURS - STRAIGHT TIME						
HOURS - OVERTIME						
RATES - STRAIGHT TIME						
RATES - OVERTIME						
COST - STRAIGHT TIME						
COST - OVERTIME						
TOTAL COST						

[END OF PAGE]

PAGE L-1-16

**PAYROLL ADDITIVES RATE DEVELOPMENT  
REAL YEAR DOLLARS**

COMPANY NAME: \_\_\_\_\_

DESCRIPTION	BASE YEAR	OPTION YEAR 1	OPTION YEAR 2	OPTION YEAR 3	OPTION YEAR 4
<b>FICA CALCULATIONS:</b>					
SOCIAL SECURITY (SS)					
BASE WAGES					
X SS RATE					
= SUBTOTAL					
MEDICARE					
BASE WAGES					
X MEDICARE RATE					
= SUBTOTAL					
UNEMPLOYMENT TAX:					
FUTA					
BASE WAGES					
X TAX RATE					
= SUBTOTAL					
SUTA					
BASE WAGES					
X TAX RATE					
= SUBTOTAL					
WORKERS' COMPENSATION:					
BASE WAGES					
X PREMIUM RATE					
= SUBTOTAL					
OTHER (SPECIFY)					
= SUBTOTAL					
TOTAL PAYROLL ADDITIVES:					
TOTAL EXPECTED COST					
/ TOTAL LABOR BASE					
= PAYROLL ADDITIVE RATE					

**[END OF FORM]**

**FORM CE**

FINAL RFP NNM08125357R

**FRINGE BENEFITS  
REAL YEAR DOLLARS**

COMPANY NAME: \_\_\_\_\_

DESCRIPTION	BASE YEAR	OPTION YEAR 1	OPTION YEAR 2	OPTION YEAR 3	OPTION YEAR 4
GROUP HEALTH INSURANCE					
GROUP LIFE INSURANCE					
RETIREMENT					
SAVING PLAN					
PROFESSIONAL LIABILITY INS.					
OTHER (SPECIFY) Employee Awards Health and Welfare Training					
TOTAL EXPECTED COST OF FB					
TOTAL LABOR BASE					
FRINGE BENEFIT RATE					

**[END OF FORM]**

**PURCHASED SUPPLIES, MATERIALS, EQUIPMENT, TRAVEL, and TRAINING  
REAL YEAR DOLLARS**

COMPANY NAME: \_\_\_\_\_

DESCRIPTION	BASE YEAR	OPTION YEAR 1	OPTION YEAR 2	OPTION YEAR 3	OPTION YEAR 4
<b>FEE BEARING OTHER DIRECT COSTS</b>					
<b>DIRECT MATERIALS &amp; INCIDENTAL SUBCONTRACTING</b>					
UNBURDENED	275,000	275,000	275,000	275,000	275,000
SUBCONTRACTOR BURDEN	0	0	0	0	0
<b>NON-FEE BEARING OTHER DIRECT COSTS</b>					
<b>GENERAL OPERATING SUPPLIES, MATERIALS, TOOLS &amp; EQUIPMENT</b>					
UNBURDENED	325,000	325,000	325,000	325,000	325,000
APPLICABLE BURDEN _____	0	0	0	0	0
<b>TRAVEL</b>					
UNBURDENED	30,000	30,000	30,000	30,000	30,000
APPLICABLE BURDEN _____	0	0	0	0	0
<b>TRAINING</b>					
UNBURDENED	10,000	10,000	10,000	10,000	10,000
APPLICABLE BURDEN _____	0	0	0	0	0

[END OF FORM]

**OVERHEAD, G&A and OTHER INDIRECT  
REAL YEAR DOLLARS**

COMPANY NAME: \_\_\_\_\_

A. OFFEROR'S FISCAL YEAR BEGINS \_\_\_\_\_ AND ENDS \_\_\_\_\_.  
DESCRIPTION OF ALLOCATION BASES OVERHEAD AND G&A

DESCRIPTION	BASE YEAR	OPTION YEAR 1	OPTION YEAR 2	OPTION YEAR 3	OPTION YEAR 4
B. EXPENSE POOL(S) DOLLARS: OVERHEAD _____  G&A _____  Other _____					
C. ALLOCATION BASE DOLLARS OVERHEAD _____  G&A _____  Other _____					
D. BURDEN RATES (B/C=%) OVERHEAD _____  G&A _____  Other _____					
E. CEILING RATES (%)  G&A _____					

[END OF FORM]

**PERSONNEL AND FRINGE BENEFIT POLICIES**

COMPANY NAME: \_\_\_\_\_

DESCRIPTION	SALARIED	HOURLY
RELOCATION		
INSURANCE - LIFE		
INSURANCE - HEALTH		
RETIREMENT		
SEVERANCE PAY		
VACATION		
HOLIDAYS		
SICK & PERSONAL LEAVE		
PER DIEM		
OVERTIME POLICY		
OTHER DIFFERENTIALS		
COMPENSATORY LEAVE POLICY		
SHIFT PREMIUM POLICY		
SUGGESTION AWARD POLICY		
OFF-SITE DIFFERENTIAL		
BONUS PLAN		
TRAINING		
SPECIAL WORKWEEK		

**[END OF FORM]**

PHASE IN COST  
REAL YEAR DOLLARS

COMPANY NAME: \_\_\_\_\_

REGULAR TIME LABOR RATES	BASE YEAR
Manager	\$0.00
Business Administration	\$0.00
Quality Assurance Manager	\$0.00
Producibility	\$0.00
Engineer	\$0.00
Operations Manager	\$0.00
Senior Engineer	\$0.00
Mechanical Engineer	\$0.00
Physicist	\$0.00
Data Analyst	\$0.00
Chemist	\$0.00
Test Coordinator	\$0.00
Accounting Clerk I	\$0.00
Accounting Clerk II	\$0.00
Accounting Clerk III	\$0.00
Order Clerk I	\$0.00
Order Clerk II	\$0.00
Safety Training Specialist	\$0.00
Quality Control/Mechanical Inspector	\$0.00
Laboratory Technician	\$0.00
Manufacturing Process Planner/Estimator	\$0.00
Production Control Clerk	\$0.00
Material Expeditor	\$0.00
Metal Cleaner, Immersion	\$0.00
Painter	\$0.00
Aerospace Structural Welder	\$0.00
Welder, Combination	\$0.00
Maintenance Trades Helper	\$0.00
Machinery Maintenance Mechanic	\$0.00
Machine Tool Operator	\$0.00
Sheet-metal Worker	\$0.00
CNC Programmer	\$0.00
Tool and Die Maker/Tool & Parts Attendant	\$0.00
Electronics Planner/Lead	\$0.00
Electronics Mechanic, Grade 10	\$0.00
Electronics Worker, Grade 8	\$0.00
Electronics Technician, Maintenance II	\$0.00
Engineering Technician I	\$0.00
Engineering Technician II	\$0.00
Engineering Technician III	\$0.00
Engineering Technician IV	\$0.00
Engineering Technician V	\$0.00
Library Technician	\$0.00
Technical Writer II	\$0.00
Secretary I	\$0.00
Secretary II	\$0.00
Secretary III	\$0.00
Metrology Technician I	\$0.00
Metrology Technician II	\$0.00
Metrology Technician III	\$0.00
Drafter/CAD Operator III	\$0.00
Drafter/CAD Operator IV	\$0.00

[END OF PAGE]

PHASE IN COST  
REAL YEAR DOLLARS

COMPANY NAME: \_\_\_\_\_

COST ELEMENTS	BASE YEAR	
	HOURS	AMOUNT
Manager		\$0.00
Business Administration		\$0.00
Quality Assurance Manager		\$0.00
Producibility		\$0.00
Engineer		\$0.00
Operations Manager		\$0.00
Senior Engineer		\$0.00
Mechanical Engineer		\$0.00
Physicist		\$0.00
Data Analyst		\$0.00
Chemist		\$0.00
Test Coordinator		\$0.00
Accounting Clerk I		\$0.00
Accounting Clerk II		\$0.00
Accounting Clerk III		\$0.00
Order Clerk I		\$0.00
Order Clerk II		\$0.00
Safety Training Specialist		\$0.00
Quality Control/Mechanical Inspector		\$0.00
Laboratory Technician		\$0.00
Manufacturing Process Planner/Estimator		\$0.00
Production Control Clerk		\$0.00
Material Expeditor		\$0.00
Metal Cleaner, Immersion		\$0.00
Painter		\$0.00
Aerospace Structural Welder		\$0.00
Welder, Combination		\$0.00
Maintenance Trades Helper		\$0.00
Machinery Maintenance Mechanic		\$0.00
Machine Tool Operator		\$0.00
Sheet-metal Worker		\$0.00
CNC Programmer		\$0.00
Tool and Die Maker/Tool & Parts Attendant		\$0.00
Electronics Planner/Lead		\$0.00
Electronics Mechanic, Grade 10		\$0.00
Electronics Worker, Grade 8		\$0.00
Electronics Technician, Maintenance II		\$0.00
Engineering Technician I		\$0.00
Engineering Technician II		\$0.00
Engineering Technician III		\$0.00
Engineering Technician IV		\$0.00
Engineering Technician V		\$0.00
Library Technician		\$0.00
Technical Writer II		\$0.00
Secretary I		\$0.00
Secretary II		\$0.00
Secretary III		\$0.00
Drafter/CAD Operator III		\$0.00
Drafter/CAD Operator IV		\$0.00
<b>REGULAR TIME LABOR COST</b>	<b>0</b>	<b>\$0</b>
Overtime Base		\$0
Overtime Premium		\$0
Shift Premium		\$0
<b>TOTAL DIRECT LABOR</b>	<b>0</b>	<b>\$0</b>
<b>RATES &amp; FACTORS</b>		
Payroll Additives	0.00%	\$0
Fringe Benefits	0.00%	\$0
Overhead - Other	0.00%	\$0
<b>INDIRECT LABOR</b>		<b>\$0</b>
<b>TOTAL BURDENED LABOR</b>		<b>\$0</b>

[END OF PAGE]

COMPANY NAME: \_\_\_\_\_

COST ELEMENTS	BASE YEAR	
	HOURS	AMOUNT
<b>OTHER DIRECT COSTS:</b>		
Direct Materials & Incidental Subcontracting		\$0
Subcontractor Burden		\$0
Relocation		\$0
Insurance		\$0
All Other		\$0
<b>TOTAL OTHER DIRECT COSTS (ODC)</b>		<b>\$0</b>
General & Administrative	0.00%	\$0
Cost of Money		\$0
<b>ESTIMATED FEE BEARING COST</b>		<b>\$0</b>
Fee	0.00%	\$0
<b>ESTIMATED COST PLUS FEE</b>		<b>\$0</b>
General Operating Materials, Supplies, Tools & Equipment		\$0
Travel		\$0
Training		\$0
Material Handling Charge	0.00%	\$0
<b>TOTAL NON-FEE BEARING ODC</b>		<b>\$0</b>
<b>TOTAL HSPD-12 COST</b>		<b>\$0</b>
<b>TOTAL FIRM-FIXED PRICE</b>		<b>\$0</b>

[END OF FORM]

IDIQ FULLY BURDENED RATES

COMPANY NAME: \_\_\_\_\_

BASE YEAR

LABOR CATEGORY		DIRECT LABOR RATES		RELATED INDIRECT COST					Burdened RATE
GOVERNMENT	OFFEROR'S	REGULAR	OVERTIME	FRINGE	PAYROLL ADD.	OTHER D.L. OH	G&A	OTHER	
<b>EXEMPT</b>									
Engineer		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Senior Engineer		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Mechanical Engineer		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Physicist		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Data Analyst		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Chemist		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Test Coordinator		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>SCA</b>									
Producibility		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Accounting Clerk I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Accounting Clerk II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Accounting Clerk III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Order Clerk I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Order Clerk II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Safety Training Specialist		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Quality Control/Mechanical Inspector		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Laboratory Technician		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Manufacturing Process Planner/Estimator		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Production Control Clerk		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Material Expeditor		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Metal Cleaner, Immersion		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Painter		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Aerospace Structural Welder		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Welder, Combination		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Maintenance Trades Helper		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Machinery Maintenance Mechanic		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Machine Tool Operator		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Sheet-metal Worker		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CNC Programmer		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Tool and Die Maker/Tool & Parts Attendant		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Electronics Planner/Lead		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Electronics Mechanic, Grade 10		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Electronics Worker, Grade 8		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Electronics Technician, Maintenance II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician IV		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician V		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Library Technician		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Technical Writer II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Secretary I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Secretary II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Secretary III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Metrology Technician I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Metrology Technician II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Metrology Technician III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Drafter/CAD Operator III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Drafter/CAD Operator IV		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>GRAND TOTAL</b>		<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>

[END OF PAGE]

IDIQ RATES (Continued)

COMPANY NAME: \_\_\_\_\_

OPTION 1

LABOR CATEGORY		DIRECT LABOR RATES		RELATED INDIRECT COST					Burdened RATE
Government	Offeror's	REGULAR	OVERTIME	FRINGE	PAYROLL ADD.	OTHER D.L. OH	G&A	OTHER	
<b>EXEMPT</b>									
Engineer		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Senior Engineer		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Mechanical Engineer		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Physicist		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Data Analyst		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Chemist		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Test Coordinator		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>SCA</b>									
Producibility		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Accounting Clerk I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Accounting Clerk II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Accounting Clerk III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Order Clerk I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Order Clerk II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Safety Training Specialist		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Quality Control/Mechanical Inspector		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Laboratory Technician		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Manufacturing Process Planner/Estimator		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Production Control Clerk		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Material Expeditor		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Metal Cleaner, Immersion		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Painter		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Aerospace Structural Welder		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Welder, Combination		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Maintenance Trades Helper		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Machinery Maintenance Mechanic		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Machine Tool Operator		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Sheet-metal Worker		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CNC Programmer		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Tool and Die Maker/Tool & Parts Attendant		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Electronics Planner/Lead		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Electronics Mechanic, Grade 10		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Electronics Worker, Grade 8		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Electronics Technician, Maintenance II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician IV		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician V		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Library Technician		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Technical Writer II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Secretary I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Secretary II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Secretary III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Metrology Technician I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Metrology Technician II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Metrology Technician III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Drafter/CAD Operator III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Drafter/CAD Operator IV		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>GRAND TOTAL</b>		<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>

[END OF PAGE]

IDIQ RATES CONTINUED

COMPANY NAME: \_\_\_\_\_

OPTION 2

LABOR CATEGORY		DIRECT LABOR RATES		RELATED INDIRECT COST					Burdened RATE
Government	Offeror's	REGULAR	OVERTIME	FRINGE	PAYROLL ADD.	OTHER D.L. OH	G&A	OTHER	
<b>EXEMPT</b>									
Engineer		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Senior Engineer		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Mechanical Engineer		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Physicist		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Data Analyst		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Chemist		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Test Coordinator		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>SCA</b>									
Producibility		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Accounting Clerk I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Accounting Clerk II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Accounting Clerk III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Order Clerk I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Order Clerk II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Safety Training Specialist		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Quality Control/Mechanical Inspector		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Laboratory Technician		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Manufacturing Process Planner/Estimator		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Production Control Clerk		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Material Expeditor		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Metal Cleaner, Immersion		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Painter		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Aerospace Structural Welder		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Welder, Combination		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Maintenance Trades Helper		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Machinery Maintenance Mechanic		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Machine Tool Operator		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Sheet-metal Worker		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CNC Programmer		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Tool and Die Maker/Tool & Parts Attendant		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Electronics Planner/Lead		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Electronics Mechanic, Grade 10		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Electronics Worker, Grade 8		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Electronics Technician, Maintenance II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician IV		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician V		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Library Technician		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Technical Writer II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Secretary I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Secretary II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Secretary III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Metrology Technician I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Metrology Technician II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Metrology Technician III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Drafter/CAD Operator III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Drafter/CAD Operator IV		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>GRAND TOTAL</b>		<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>

[END OF PAGE]

IDIQ RATES CONTINUED

COMPANY NAME: \_\_\_\_\_

OPTION 3

LABOR CATEGORY		DIRECT LABOR RATES		RELATED INDIRECT COST					Burdened RATE
Government	Offeror's	REGULAR	OVERTIME	FRINGE	PAYROLL ADD.	OTHER D.L. OH	G&A	OTHER	
<b>EXEMPT</b>									
Engineer		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Senior Engineer		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Mechanical Engineer		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Physicist		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Data Analyst		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Chemist		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Test Coordinator		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>SCA</b>									
Producibility		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Accounting Clerk I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Accounting Clerk II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Accounting Clerk III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Order Clerk I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Order Clerk II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Safety Training Specialist		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Quality Control/Mechanical Inspector		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Laboratory Technician		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Manufacturing Process Planner/Estimator		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Production Control Clerk		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Material Expeditor		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Metal Cleaner, Immersion		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Painter		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Aerospace Structural Welder		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Welder, Combination		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Maintenance Trades Helper		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Machinery Maintenance Mechanic		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Machine Tool Operator		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Sheet-metal Worker		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CNC Programmer		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Tool and Die Maker/Tool & Parts Attendant		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Electronics Planner/Lead		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Electronics Mechanic, Grade 10		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Electronics Worker, Grade 8		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Electronics Technician, Maintenance II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician IV		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician V		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Library Technician		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Technical Writer II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Secretary I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Secretary II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Secretary III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Metrology Technician I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Metrology Technician II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Metrology Technician III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Drafter/CAD Operator III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Drafter/CAD Operator IV		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>GRAND TOTAL</b>		<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>

[END OF PAGE]

IDIQ RATES CONTINUED

COMPANY NAME: \_\_\_\_\_

OPTION 4

LABOR CATEGORY		DIRECT LABOR RATES		RELATED INDIRECT COST					Burdened RATE
Government	Offeror's	REGULAR	OVERTIME	FRINGE	PAYROLL ADD.	OTHER D.L. OH	G&A	OTHER	
<b>EXEMPT</b>									
Engineer		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Senior Engineer		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Mechanical Engineer		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Physicist		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Data Analyst		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Chemist		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Test Coordinator		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>SCA</b>									
Producibility		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Accounting Clerk I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Accounting Clerk II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Accounting Clerk III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Order Clerk I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Order Clerk II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Safety Training Specialist		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Quality Control/Mechanical Inspector		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Laboratory Technician		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Manufacturing Process Planner/Estimator		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Production Control Clerk		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Material Expeditor		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Metal Cleaner, Immersion		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Painter		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Aerospace Structural Welder		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Welder, Combination		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Maintenance Trades Helper		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Machinery Maintenance Mechanic		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Machine Tool Operator		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Sheet-metal Worker		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CNC Programmer		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Tool and Die Maker/Tool & Parts Attendant		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Electronics Planner/Lead		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Electronics Mechanic, Grade 10		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Electronics Worker, Grade 8		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Electronics Technician, Maintenance II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician IV		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Engineering Technician V		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Library Technician		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Technical Writer II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Secretary I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Secretary II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Secretary III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Metrology Technician I		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Metrology Technician II		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Metrology Technician III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Drafter/CAD Operator III		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Drafter/CAD Operator IV		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>GRAND TOTAL</b>		<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>

[END OF PAGE]



**SECTION L**

**INSTRUCTIONS, CONDITIONS, AND NOTICES TO OFFERORS OR RESPONDENTS**

**L.1 52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)**

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these addresses:

FAR provisions: <http://www.arnet.gov/far/>

NASA FAR Supplement Provisions: <http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm>

MSFC Provisions: [http://www.ec.msfc.nasa.gov/msfc/msfc\\_uni.html](http://www.ec.msfc.nasa.gov/msfc/msfc_uni.html)

(End of Provision)

NOTICE: The following provisions are hereby incorporated by reference:

**A. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) PROVISIONS**

<u>Provision Number</u>	<u>Title</u>	<u>Date</u>
52.204-6	Data Universal Numbering System (DUNS) Number	OCT 2003
52.211-14	Notice of Priority Rating for National Defense Use	SEP 1990
52.214-34	Submission of Offers in the English Language	APR 1991
52.214-35	Submission of Offers in U.S. Currency	APR 1991
52.215-1	Instructions to Offerors – Competitive	JAN 2004
52.215-16	Facilities Capital Cost of Money	JUN 2003
52.222-24	Pre-award On-Site Equal Opportunity Compliance Evaluation	FEB 1999
52.222-46	Evaluation of Compensation for Professional Employees	FEB 1993
52.233-4	Applicable Law for Breach of Contract Claim	OCT 2004
52.237-10	Identification of Uncompensated Overtime	OCT 1997
52.247-6	Financial Statement	APR 1984

**B. NASA/FAR SUPPLEMENT (48 CFR CHAPTER 18) PROVISIONS**

<u>Provision #</u>	<u>Title</u>	
1852.227-71	Requests for Wavier of Rights to Inventions	APR 1984

(End of Provision)

**L.2 52.215-20 – REQUIREMENTS FOR COST AND PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA (Oct 1997) – ALTERNATE II (OCT 1997) thru ALTERNATE IV (OCT 1997)**

(a) Submission of cost or pricing data is not required.

(b) Provide information described below: **Reference L.18, “Instructions for Proposal Preparation Service/Cost.”**

(c) When the proposal is submitted, also submit one copy to the Offeror’s cognizant Defense Contract Audit Agency (DCAA) Auditor.

**L.3 52.216-1 – TYPE OF AWARD (APR 1984)**

The Government contemplates award of a Cost Plus Award Fee Contract for Mission Services with an Indefinite Delivery Indefinite Quantity (IDIQ) provision resulting from this solicitation.

(End of Provision)

**L.4 52.233-2 – SERVICE OF PROTEST (SEP 2006)**

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the Government Accountability Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from NASA, George C. Marshall Space Flight Center, Attn: PS20/Mr. Kim Whitson, Contracting Officer, Marshall Space Flight Center, AL 35812.

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of Provision)

**L.5 PROTESTS TO NASA (OCTOBER 2002)**

Potential bidders or offerors may submit a protest under 48 CFR Part 33 (FAR Part 33) directly to the Contracting Officer. As an alternative to the Contracting Officer's consideration of a protest, a potential bidder or offeror may submit the protest to the Assistant Administrator for Procurement, who will serve as or designate the Official responsible for conducting an independent review. Protests requesting an independent review shall be addressed to Assistant Administrator for Procurement, NASA Code H, Washington, DC 20546-0001.

(End of Provision)

**L.6 1852.223-73 - SAFETY AND HEALTH PLAN (NOV 2004)**

(a) The offeror shall submit a detailed safety and occupational health plan as part of its proposal (see NPR 8715.3, NASA Safety Manual, Appendices). The plan shall include a detailed discussion of the policies, procedures, and techniques that will be used to ensure the safety and occupational health of Contractor employees and to ensure the safety of all working conditions throughout the performance of the contract.

**Final RFP NNM08125357R**

(b) When applicable, the plan shall address the policies, procedures, and techniques that will be used to ensure the safety and occupational health of the public, astronauts and pilots, the NASA workforce (including Contractor employees working on NASA contracts), and high-value equipment and property.

(c) The plan shall similarly address subcontractor employee safety and occupational health for those proposed subcontracts that contain one or more of the following conditions:

(1) The work will be conducted completely or partly on premises owned or controlled by the government.

(2) The work includes construction, alteration, or repair of facilities in excess of the simplified acquisition threshold.

(3) The work, regardless of place of performance, involves hazards that could endanger the public, astronauts and pilots, the NASA workforce (including Contractor employees working on NASA contracts), or high value equipment or property, and the hazards are not adequately addressed by Occupational Safety and Health Administration (OSHA) or Department of Transportation (DOT) regulations (if applicable).

(4) When the assessed risk and consequences of a failure to properly manage and control the hazards warrants use of the clause.

(d) This plan, as approved by the Contracting Officer, will be included in any resulting contract.

(End of Provision)

**L.7 1852.227-84 PATENT RIGHTS CLAUSES (DEC 1989)**

This solicitation contains the patent rights clauses of **FAR 52.227-11** (as modified by the NFS) and NFS 1852.227-70. If the contract resulting from this solicitation is awarded to a small business or nonprofit organization, the clause at NFS 1852.227-70 shall not apply. If the award is to other than a small business or nonprofit organization, the clause at **FAR 52.227-11** shall not apply.

(End of Provision)

**L.8 52.252-5 AUTHORIZED DEVIATIONS IN PROVISIONS (APR 1984)**

(a) The use in this solicitation of any Federal Acquisition Regulation (48 CFR Chapter 1) provision with an authorized deviation is indicated by the addition of "(DEVIATION)" after the date of the provision.

(b) The use in this solicitation of any NASA/Federal Acquisition Regulation Supplement (48 CFR Chapter 18) provision with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

(End of Provision)

**L.9 1852.231-71 DETERMINATION OF COMPENSATION REASONABLENESS (MAR 1994)**

(a) The proposal shall include a total compensation plan. This plan shall address all proposed labor categories, including those personnel subject to union agreements, the Service Contract Act, and those exempt from both of the above. The total compensation plan shall include the salaries/wages, fringe benefits and leave programs proposed for each of these categories of labor. The plan also shall include a discussion of the consistency of the plan among the categories of labor being proposed. Differences between benefits offered professional and non-

**Final RFP NNM08125357R**

professional employees shall be highlighted. The requirements of this plan may be combined with that required by the clause at FAR 52.222-46, "Evaluation of Compensation for Professional Employees."

(b) The Offeror shall provide written support to demonstrate that its proposed compensation is reasonable.

(c) The Offeror shall include the rationale for any conformance procedures used or those Service Contract Act employees proposed that do not fall within the scope of any classification listed in the applicable wage determination.

(d) The Offeror shall require all service subcontractors (1) with proposed cost reimbursement or non-competitive fixed-price type subcontracts having a total potential value in excess of \$500,000 and (2) the cumulative value of all their service subcontracts under the proposed prime contract in excess of 10 percent of the prime contract's total potential value, provide as part of their proposals the information identified in (a) through (c) of this provision.

**(Note – See Subfactor B, Staffing and Total Compensation, STC4, Compensation Plan, under Clause L.18, Instructions for Proposal Preparation.)**

(End of Provision)

**L.10 MSFC 52.215-90 SUMMARY OF DEVIATIONS/EXCEPTIONS (APR 1987)**

The Offeror will explain any exceptions (including deviations and conditional assumptions) taken with respect to this RFP. Any exceptions must contain sufficient amplification and justification to permit evaluation. Such exceptions will not, of themselves, automatically cause a proposal to be termed unacceptable. A large number of exceptions or one or more significant exceptions not providing any obvious benefit to the Government may, however, result in rejection of such proposal(s) as unacceptable. Highlight exceptions in the margin of the proposal where they appear in the text.

(End of Provision)

**L.11 MSFC 52.253-90 REQUIRED FORMS (DEC 1997)**

(a) The form checked below is attached to the end of this solicitation and shall be submitted prior to award of any contract resulting from this solicitation, upon request from the responsible contracting office.

\_\_\_ FAR 15.406-2 - Certificate of Current Cost or Pricing Data

(b) The forms checked below are required to be submitted in the performance of any contract awarded as a result of this solicitation. Forms are available in Part 53 of the FAR or NASA FAR Supplement. An information copy of a form may be obtained from the responsible contracting office. See FAR 52.253-1 and 53.105(b) for information on the use of computer generated forms. See FAR 53.107(b) for information on obtaining multiple copies of forms.

\_\_\_ SF 272 - Federal Cash Transactions Report

\_\_\_ SF 294 - Subcontracting Report for Individual Contracts

\_\_\_ SF 295 - Summary Subcontract Report

Final RFP NNM08125357R

- SF 298 - Report Documentation Page
- SF 1034A - Public Voucher for Purchases and Services Other Than Personal
- SF 1413 - Statement and Acknowledgment
- SF 1414 - Consent of Surety
- SF 3881 - Payment Information Form ACH Vendor Payment System
- NASA Form 533M - Monthly Contractor Financial Management Report
- NASA Form 533Q - Quarterly Contractor Financial Management Report
- NASA Form 778 - Contractor's Release
- NASA Form 780 - Contractor's Assignment of Refunds, Rebates, Credits and Other Amounts
- NASA Form 1018 - NASA Property in the Custody of Contractors
- DD Form 250 - Material Inspection and Receiving Report
- DD Form 1149 – Requisition and Invoice/Shipping Document
- DD Form 1419 - DOD Industrial Plant Equipment Requisition, if applicable.

(End of Provision)

**L.12 1852.215-81 PROPOSAL PAGE LIMITATIONS (FEB 1998)**

(a) The following page limitations are established for each portion of the proposal submitted in response to this solicitation.

<u>Proposal Section</u>	<u>Page Limit</u>
Volume I – Mission Suitability Factor	One Hundred (100) pages
• Excludes the following:	
○ Key Personnel Resumes per format provided in Form SA (not to exceed 20 pages total)	
○ Key Personnel Letters of Commitment	
○ Job Descriptions/Qualifications (Note: Offeror shall provide no less than 3 JDQs per page – Reference Form SC Instructions)	
○ Draft Safety, Health, and Environmental Plan (not to exceed 15 pages per DRD1163SA-001)	
○ Cross Reference Matrix of Sections L and M – see Clause L.18 (no limit on pages)	
○ 8a Certification Letter	
Volume II – Cost Factor	Unlimited



**L.14 8(a) CERTIFICATION**

This requirement is an 8(a) Set-Aside and proposals are solicited only from small business concerns expressly certified by the Small Business Administration (SBA) for participation in the SBA's 8(a) Program. Offeror shall submit a copy of their 8(a) Certification Letter with their proposal.

(End of provision)

**L.15 PHASE-IN**

The Government requires phase-in costs to be priced separately. A separate Purchase Order (utilizing Simplified Acquisition Procedures) obligating up to 29 calendar days of start up and phase-in effort (See Volume II, Cost Factor) will be issued.

(End of provision)

**L.16 INDUSTRY BRIEFING**

An Industry Briefing was held on Friday, June 29, 2007 at NASA/Marshall Space Flight Center, Huntsville, AL.

Industry Briefing charts and an Interested Parties List were posted after the industry briefing to the NASA Acquisition Internet Service (NAIS) and Federal Business Opportunities (FedBizOps) websites. The Interested Parties List is based on "Notice of Intent" responses to the presolicitation synopsis for the draft RFP and industry briefing attendance

(End of Provision)

**L.17 DUE DATES FOR PROPOSALS**

(a) The due date and time for receipt of proposals is as follows:

<b><u>Volume</u></b>	<b><u>Date and Time</u></b>
Volume III – Past Performance Factor	September 7, 2007 4:00 p.m local time
Volume I – Mission Suitability Factor	September 17, 2007 4:00 p.m local time
Volume II – Cost Factor	September 17, 2007 4:00 p.m local time
Volume IV – Completed RFP & Signed SF33	September 17, 2007 4:00 p.m local time

(b) Proposals shall be mailed to the address specified in Block 8 of the SF33 or hand delivered as shown in (c) below.

(c) Hand delivery of proposals:

Offerors shall contact the Contracting Officer identified on the SF33 to coordinate the delivery of any proposal that will be hand carried to MSFC on a date prior to those specified in paragraph (a), above.

**Final RFP NNM08125357R**

Due to increased security at the MSFC, Offerors are cautioned to include sufficient time to clear security, obtain parking, and be properly badged (person and vehicle) to ensure proposals are delivered on or before the time specified in paragraph (a). Offerors hand delivering proposals must provide a valid drivers license, vehicle registration, and proof of vehicle insurance to obtain vehicle passes and badges. Offerors should allow a minimum of 2 hours to clear security when entering Redstone Arsenal. No escorts will be provided.

Proposals hand carried to MSFC on the date due, shall be delivered to Building **4203, Basement Elevator Lobby**, between **1:00 pm to 4:00 pm, local time**. Offerors shall call 256-961-2035 for a representative to accept their proposal. A telephone is available in the basement lobby.

(d) Proposals received after the due date and time specified in paragraph (a), will be processed in accordance with FAR Clause 52.215-1 "Instructions to Offerors – Competitive Acquisitions (JAN 2004)."

(End of provision)

**L.18 INSTRUCTIONS FOR PROPOSAL PREPARATION SERVICE/COST**

(a) Introduction

This Request for Proposal (RFP) is issued to obtain proposals for providing Marshall Space Flight Center (MSFC) with Engineering Technicians and Trades Support (METTS) Services in accordance with the Performance Work Statement (PWS) set forth herein.

The Government intends to make only one award as a result of this solicitation

The successful Contractor shall be expected to perform all elements of the Performance Work Statement of the resultant contract within the costs estimated and negotiated for Mission Services in each resulting Task Order.

The contents of this RFP should be carefully reviewed to assure that all requirements for proposal data, detail and supporting rationale are fully met. Questions should be submitted in writing to the Contracting Officer (CO) no later than 10 calendar days after release of the Final RFP on any area wherein clarification appears warranted.

(b) General

The prime Contractor will be responsible for successful execution of the contract awarded hereunder. In the event subcontractors or other teaming arrangements are proposed, their relationship during the effort shall be indicated, and their proposed contributions to the work and to your proposal shall be identified and integrated into each part of the proposal as applicable. On the first page of Volume III - Past Performance Factor, the Offeror shall provide a summary listing (by name and address) of all team members, joint venture partners, subcontractors and vendors that have been identified by name throughout the Offeror's proposal and the proposed percentage of total work associated with each entity. If no subcontractors or other teaming arrangements are proposed this shall be noted.

Each Offeror is cautioned to submit its best and most realistic as well as most competitive proposal initially. An Offeror not submitting its best, most realistic, and most competitive initially could face non-selection in the event the Government makes an award from the initial proposals. An Offeror could also be removed from the competitive range, cost and other

**Final RFP NNM08125357R**

factors considered, if other than its best, most realistic, and most competitive proposal is submitted.

Upon release of the final RFP, any communication in reference to this solicitation shall cite the solicitation number and be directed to the following government representative:

Name: Kimberly Carson  
Phone: (256) 961-2035 (collect calls not accepted)  
Fax: (256) 544-8353  
Address: NASA, George C. Marshall Space Flight Center  
Attention: PS20/ Kimberly Carson, Contracting Officer  
Marshall Space Flight Center, AL 35812

The Performance Work Statement set forth is unclassified, and proposals should be submitted accordingly. However, some contractor personnel may require access to classified information; the selected Contractor must be able to acquire a Facility Security Clearance. Security clearance, for those persons that may require having such, will be obtained in accordance with the Industrial Security Manual for Safeguarding Classified Information, DOD Manual 5220.22. Contractor personnel working at MSFC must comply with pertinent MSFC security regulations. The requirements of Homeland Security Presidential Directive (HSPD) No. 12 shall apply to the potential contractor, any teammates/subcontractors (at any tier), affiliates and consultants. Note: HSPD-12 costs shall be proposed separately as a distinct line item of cost (Reference Attachment J-18) on Form CI, Phase-In Cost.

Proposal Format

1. General

A. Your proposal shall be submitted in four lose leaf binders (One Volume per Binder) and organized as follows with each section appropriately tabbed and identified.

- Volume I Mission Suitability Factor
- Volume II Cost Factor
- Volume III Past Performance Factor
- Volume IV Completed RFP and Signed SF33

B. Original and 15 copies of Volumes I, II, and III shall be submitted along with the original and one copy of Volume IV. In addition to paper copies of the proposal, an exact electronic proposal shall be submitted in Microsoft Word 2003 or later (Volumes I, II (two electronic copies), III, & IV) and Microsoft Excel 2003 for spreadsheets CD(s). Where the electronic proposal differs from the hardcopy proposal, the hardcopy proposal will prevail. Text, tables, and graphics shall allow for copy and paste into other applications. Supporting cost information included in the proposal shall also be provided on CD(s) (CD-R only) and accessible via a PC with the formulas visible. See Provision L.12 (NFS 1852.215-81) for proposal page limitations. The cover sheet on each volume/copy shall indicate either "Original" or "Volume [redacted], Copy [redacted] of 15".

**Final RFP NNM08125357R**

C. Information in your proposal must be furnished entirely in compliance with these instructions and be complete within itself. The information requested and the manner of submission is essential to permit a prompt and thorough evaluation.

2. The following instructions are provided to assist the Offeror in understanding the information needed to make an objective selection of this procurement. Since this information constitutes the major basis for formal judgment, it will be advantageous to the Offeror to present commitments in a clear, concise manner, and in terms understandable to those who may be unfamiliar with the Offeror's intentions.
3. The Offeror shall provide a matrix that cross-references all instructions and evaluation criteria (Sections L & M, respectively) to their proposal to ensure that all areas have been completely addressed.
4. The Offeror should prepare Volume I in accordance with the outline provided below:

(**Note:** the outline is provided for use in organizing your proposal only and should not be construed as an indication of the order of importance or relative weighting within the individual mission suitability subfactors as there are no discrete point values attached to any of the sub-sections.)

Management and Technical Approach

- MTA1 Management
- MTA2 Organizational Structure
- MTA3 Local Autonomy
- MTA4 Communication
- MTA5 Task Order Work Process
- MTA6 Quality Assurance
- MTA7 Cost Control
- MTA8 Teaming/Subcontracting
- MTA9 Export Control
- MTA10 Organizational Conflicts of Interest
- MTA11 Risk Analysis and Mitigation

Staffing and Total Compensation

- STC1 Phase-In
- STC2 Staffing and Skill Levels
- STC3 Rationale/Qualifications of Key Personnel
- STC4 Compensation Plan
- STC5 Flexibility to Address Varying Demands
- STC6 Risk Analysis and Mitigation

Safety, Health, and Environmental

- SHE1 Safety, Health, and Environmental Initiatives
- SHE2 Risk Analysis and Mitigation

**Volume I – Mission Suitability Factor**

The Mission Suitability Factor affords Offerors the opportunity to explain their approach to effectively and efficiently accomplishing the work specified in the Performance Work Statement (PWS) (Section J-1). The Offeror is expected to demonstrate their understanding of the requirements of the PWS, the roles and missions of the Marshall Space Flight Center, the distribution of responsibility for those roles and missions throughout the organizational structure of MSFC, the process MSFC employs to accomplish assigned technician and trade support services, and the specific role the METTS contractor performs in supporting those tasks. For each Mission Suitability subfactor, the Offeror shall provide an assessment of risks inherent in their approach and a plan to mitigate those risks.

**A. Management and Technical Approach**

The Offeror shall fully describe their management, technical and operational approach for providing the services delineated in the Performance Work Statement (PWS). The offeror shall address each of the numbered Management and Technical Approach (MTA) criteria presented below:

MTA1 Management

The Offerors shall provide their approach and methods to fulfill the PWS, the activities that will be performed in the accomplishment of the PWS, and the methods and/or techniques used in planning, scheduling, integrating, processing, controlling, and completing the PWS. The Offeror shall provide their methodology for leveraging management techniques and systems to provide effective services and products, including the approach to developing integrated processes and procedures.

The Offeror's approach shall cover:

- a) Description of the work to be accomplished and an outline of methods by which the contractor proposes to accomplish work down through 3<sup>rd</sup> level WBS, including management concepts, plans, and approach to project management.
- b) Description and overall approach for tracking and managing work and its relation to each PWS element.
- c) Specifically for 3<sup>rd</sup> level PWS 2.4.11 address:
  - i. Receiving, estimating and processing customer orders (reference the Visual Manufacturing™ system) through the fabrication and assembly.
  - ii. Issuing, receiving, and controlling work done by subcontractor(s) to augment the fabrication and assembly capability.
  - iii. Fabrication process planning and production control (which includes scheduling and monitoring shop work loads, expediting hardware and status of work orders).

MTA2 Organizational Structure

The Offeror shall provide organizational charts (down through the third level WBS) depicting the proposed organizational structure, including any associations with corporate or division organizations and teammates/major subcontractors. The Offeror shall describe how their organizational structure provides clear internal and external lines of authority. A complete rationale for the organizational structure shall be provided to demonstrate a

logical, organized approach to the integrated planning, controlling, and reporting of contract activities.

MTA3 Local Autonomy

The Offeror shall describe the degree of local autonomy granted to their METTS General Manager, the relationships between the METTS organization and the parent organization, and the types of decisions that will be made outside the local organization. This description shall include, but not be limited to, the identification of organizational and geographical placement of authority to perform the following:

- Assume existing work effort
- Respond to task order (IDIQ) requests and accept task orders
- Release completed work and vouchers to the Government
- Reassign work in response to varying workloads
- Negotiate and sign contract modifications
- Select, administer, and terminate subcontracts
- Acquire (by direct hire, subcontract, or teaming agreement) specific and unique expertise in a manner consistent with task skills and schedule requirements
- Recruit and hire required personnel in a manner consistent with task skills and schedule requirements
- Promote, demote, discipline, or dismiss personnel
- Approve travel
- Acquire property and supplies as necessary
- Provide training and conduct mentoring

MTA4 Communication

The Offeror shall describe their approach for maintaining good communication with cognizant personnel. Offerors shall discuss proposed methods of resolving ambiguities, concerns, and conflicts that become apparent during the performance of this contract. The Offeror shall describe procedures for communicating to the COTR and Technical Monitors (TMs) the status of activities down to the 3<sup>rd</sup> level WBS elements and any issues or concerns that need to be raised to the management level.

MTA5 Task Order Work Process

The Offeror shall present an approach to providing a complete and timely TOP in response to a Government TOR. The approach shall also include description of how cost estimating for IDIQ work will be accomplished. The plan shall implement the requirements of Clauses H.4, Task Ordering Procedure, and H.5, Supplement Task Ordering Procedure, and all DRDs identified in Attachment J-2.

Given the specialized nature of calibration work, the Offeror shall present their approach for obtaining and retaining the required skills to accomplish calibration work including up to 20 metrology technicians.

MTA6 Quality Assurance

The Offeror shall describe their approach for ensuring that the services provided under this contract are accurate, timely, and responsive to the requirements as defined in the PWS. The Offeror shall describe how adherence to any applicable Federal laws, Marshall Work Instructions, Marshall Organizational Instruction, regulations, and

## Final RFP NNM08125357R

guidelines will be maintained. The Offeror shall identify procedures and features of their operating approach which provide early recognition of potential problems, problem areas, and allow for proactive problem avoidance and solutions. The Offeror shall address their approach to quality and the extent of compliance to (ISO9000-2000/AS9100) (certification/registration not required) and their approach to working within the Marshall Management System.

### MTA7 Cost Control

The Offeror shall describe their approach, and any teammate/major subcontractor's approach, to control contract cost, including the effect of the METTS contract on their cost center structure. The Offeror shall describe how training, travel, labor, overtime, and procurement (including materials) will be monitored and controlled. The Offeror shall describe policies for estimating, managing, tracking, and reporting cost. The Offeror shall identify the current status of the prime's, any teammate's, and each major subcontractor's business systems (accounting, estimating, compensation, property, timekeeping, and purchasing) indicating Government approval status, the date the approval was given, and the address of the responsible Government agency for each prime contractor and major subcontractor. If no approval has been granted by DCAA please state and provide rationale.

**(Note:** Offerors are reminded that an adequate cost accounting system is required before a cost-reimbursable contract can be awarded to the Offeror (see FAR 16.301-3(a)(1).)

### MTA8 Teaming/Subcontracting Arrangements

If the Offeror proposes using teammates/major subcontractors, the Offeror shall describe and explain their approach to teaming and subcontracting and for compliance with the Small Business Administration's (SBA) Ostensible Subcontractor Rule. Include specific details so that the Government can determine that the prime contractor making the offer will be performing the primary and vital requirements for the contract. In the event an Offeror's proposal is determined to be unacceptable based on the SBA Ostensible Subcontractor Evaluation, the matter will be referred to the Small Business Administration (SBA) for a Certificate of Competency in accordance with the procedures outlined in FAR 19.6. The description and explanation shall include the following:

- Rationale for each of the arrangements
- Identification of points of contact
- Business size of each teammate or major subcontractor
- Identification of which party will be managing the contract
- Which teammate led pursuit of the Contract
- The degree of collaboration in preparing and submitting the proposal
- How management and control policies will be implemented
- How work will be controlled, reported, and reviewed
- Accessibility and flow of relevant support from internal and external sources, such as parent organizations, teaming arrangements, major subcontractors
- Any integration of teammate/major subcontractors into the management and supervisory hierarchy.
- Which party possesses the background and expertise necessary for contract performance
- Identification of teammate that will perform the more complex and costly contract functions

**Final RFP NNM08125357R**

- Description and amount of the work to be performed by each party (contractor, teammate, and subcontractor), including the associated PWS paragraphs, percentage of the total work to be performed by each party, and whether each party will perform discreet tasks or a commingling of personnel from each party will perform each task
- Distribution of award fee between prime Contractor and teammates/major subcontractors

The offeror is cautioned to ensure that their teaming/major subcontracting arrangement does not violate the ostensible subcontracting rules set forth by the small business administration.

**MTA9 Export Control**

The Offeror shall provide their approach to complying with NASA/MSFC export control requirements and procedures as well as all related export control laws and regulations.

**MTA10 Organizational Conflicts of Interest**

The Offeror shall clearly and completely describe their approach for assuming, planning, controlling, and executing the requirements of the PWS, while complying with clauses H.2, Limitation of Future Contracting, H.3, Organizational Conflicts of Interest, and I.8, Access to Sensitive Information. In the event the offeror teams or subcontracts, explain how the participants in the teaming arrangement will also comply with these clauses. The description shall include an analysis of possible organizational conflicts of interest resulting from access to sensitive information and pertaining to impaired objectivity identifying the conflicts and proposing methods for avoiding, neutralizing, or mitigating the conflicts.

**MTA11 Risk Analysis and Mitigation**

The Offeror shall provide an assessment of risks inherent in their approach for this subfactor and a plan to mitigate those risks.

**B. Staffing and Total Compensation (STC)**

The Offeror shall describe their management approach for providing a high quality and stable management team and workforce, which satisfies the requirements of the METTS Contract. The Offeror shall address each of the numbered Staffing and Total Compensation (STC) criteria presented below:

NOTE: Offerors should note that the Government is interested in new and innovative approaches to fulfill these requirements. As a result, Offeror's are allowed to propose any labor categories they deem necessary to accomplish the requirements of the PWS. If new or additional labor categories are proposed, the contractor shall provide a cross reference to the Government-identified labor category position descriptions. The current staffing structure may or may not be the most beneficial, and offerors should propose the most effective approach using industry best practices where practicable to meet the Government's requirements.

**STC1 Phase-In**

The Offeror shall describe their approach to phase-in with minimal impact to the Government. The Offeror's phase-in proposal shall fully describe the phase-in time

## Final RFP NNM08125357R

required (not to exceed 29 days); the method for transitioning work to the new contract with minimal impact, including assuming responsibility for PWS 1.0 and 2.0 work and the process for planning and implementing PWS 3.0 tasks; the phase-in activities essential for obtaining the required workforce; and any other issues deemed critical to a successful transition from the current contracts to this follow-on effort.

### STC2 Staffing and Skill Levels

The Offeror shall describe their approach to determining optimum skill mix and staffing levels. The Offeror's approach shall include the methodology for ensuring and maintaining a consistent application of appropriate labor classifications in all PWS elements throughout the life of the contract. The Offeror shall explain how they will recruit and retain multi-disciplined personnel to meet the requirements of the PWS, excluding metrology technicians (metrology technicians to be addressed in MTA 5). The Offeror shall identify and address the sources of staffing for the performance of this PWS, including the percentage of current incumbent staffing proposed to retain, the percentage of new hires, and the percentage of transfers from within the Offeror's existing workforce. The Offeror shall provide their approach to ensuring all personnel are properly certified based on the work they will be expected to accomplish.

For WBS 2.0, the Offeror shall provide, down through the 3<sup>rd</sup> level WBS, their assessment of the skill mix and staffing levels necessary to accomplish the work. For each skill mix and staffing level identified, the Offeror shall provide their rationale supporting their conclusion that this is the optimum skill mix and staffing level. This information shall also be provided for WBS 1.0 at the 2<sup>nd</sup> level. No information shall be submitted for WBS 3.0 or its subelements.

The historical skill mix and certifications are provided in Attachment L-9 and L-7, respectively. [The historical skill mix is provided for the Offeror's convenience only. Reevaluation of, and adjustments to, the historical skill mix are strongly encouraged]. In adjusting the historical skill mix, the offeror is strongly encouraged to ensure that jobs are properly classified based on the duties and responsibilities required to accomplish the work.

### STC3 Rationale/Qualifications of Key Personnel

The Offeror shall provide a sufficient number of key personnel (not-to-exceed nine (9)) to demonstrate their understanding of the diverse technical requirements of this RFP. The Offeror shall provide rationale for designating each of the key positions as key. The Offeror shall provide their rationale for selecting key personnel and their verification of credentials of prospective employees. The Offeror shall provide resumes and letters of commitment, which shall include pay rates, for each proposed key personnel position. The Offeror shall provide a plan that delineates how the replacement and/or transition of key personnel will be accomplished. This plan must include a transition period (or explain lack thereof), well defined approach for the employee replacement or transition, and a strategy to minimize the impact to the Government by the transition or replacement of an employee identified as key personnel. The Offeror shall provide the Key Personnel Resumes in Form SA.

### STC4 Compensation Plan

The Offeror and each proposed major subcontractor shall submit a total compensation plan setting forth salaries and fringe benefits proposed for the professional employees

who will work on the contract. The compensation plan shall include a description of the employee's benefits, such as vacation, sick leave, health insurance, life insurance, relocation reimbursement, savings plans, severance pay, and retirement plan. The compensation plan shall be described in terms of its capability to support recruitment and retention of employees as well as realism. The compensation levels proposed shall reflect a clear understanding of the work to be performed as evidenced by the capability of the proposed compensation structure to obtain and keep suitably qualified personnel to meet the PWS objectives. The Offeror is cautioned that materially lower or higher compensation than that of local standards for comparable work may indicate a lack of understanding of the complexity of the total contract. The salary rates/range must take into account differences in skill, education, experience, complexity of various disciplines, and professional job difficulty. Supporting information may include data, such as recognized national and regional compensation surveys and studies of professional, public, and private organizations used in establishing the total compensation structure. The Offeror shall describe personnel policies, such as performance, incentive, promotion, award, training, seniority, and professional development opportunities. In addition, the Offeror shall describe policies for addressing portability of benefits and compensation benefits, seniority of incumbent staff, and other sources of staffing hired from the current Contractor if such an approach is utilized.

The Offeror shall describe their approach for compliance with the Service Contract Act that demonstrates their understanding of the Service Contract Act. The Offeror shall provide a completed Job Description/Qualification (JD/Q), Form SC, for each service labor category to be used in the performance of the METTS services contract. The purpose of this information is to allow the Government the ability to determine the Offeror's understanding and application of the Service Contract Act.

In addition to the JD/Q forms provided for the service labor categories, the Offeror shall use the forms for providing the same information for the non-service labor categories to demonstrate conformance of their labor categories into the Government's labor categories. (Reference Clause L.9)

**STC5 Flexibility to Address Varying Demands**

The Offeror shall describe how they will address increases or decreases in workload under the sections of the PWS. The Offeror will provide their approach to recruiting and hiring required personnel in the event the workload increases beyond defined in PWS 1.0 and 2.0. The Offeror shall also describe how they will use cross-training and cross-utilization of personnel to optimally achieve the requirements of this PWS. The Offeror shall explain how they will handle reductions in workload in the event there is a decrease in workload or scope. The Offeror shall explain how existing resources can be leveraged as workload shifts between various areas of the PWS.

**STC6 Risk Analysis and Mitigation**

The Offeror shall provide an assessment of risks inherent in their approach for this subfactor and a plan to mitigate those risks.

**C. Safety, Health, and Environmental (SHE)**

**SHE1 Safety, Health, and Environmental Initiatives**

## Final RFP NNM08125357R

The Offeror shall submit for evaluation a draft version of the Safety, Health, and Environmental Plan in accordance with DRD 1163SA-001, as set forth in Attachment J-2 of the Request for Proposal (RFP). The draft Safety, Health and Environmental Plan shall establish and implement an industrial safety, health, and environmental program and shall incorporate the following Safety and Health Core Program Requirement Elements documented in MPG 8715.1:

- CPR1: Management Leadership and Employee Involvement
- CPR2: System and Worksite Analysis
- CPR3: Hazard Prevention and Control
- CPR4: Safety, Health and Environmental Training
- CPR5: Environmental Compliance

### SHE2 Risk Analysis and Mitigation

The Offeror shall provide an assessment of risks inherent in their approach for this subfactor and a plan to mitigate those risks.

## Volume II – Cost Factor

### a. General

Certified cost or pricing data are not required; however, information other than cost and pricing data are required for cost realism analysis. Offerors are cautioned not to include Mission Suitability related data in the Cost Volume.

1. A total cost summary and PWS breakdown through level 2 shall be provided. It is incumbent upon the Offeror to assure that their proposal includes complete and factual cost data. Offerors should note that HSPD-12 costs shall be proposed separately as a distinct line item of cost within phase-in costs (Reference Attachment J-18 for HSPD-12 requirements). Summary level direct labor costs only are not acceptable. Estimated costs for the base period and all options will be evaluated. Offeror shall link all forms, where applicable. Electronic links shall not be broken in Offeror's electronic submission. Clause F.6, Phase-In and Phase-Out, requires that phase-in costs be priced separately to facilitate a separate Purchase Order, which utilizes Simplified Acquisition Threshold (SAT) procedures and will obligate up to 29 calendar days of start up and phase-in effort.

2. The Cost Proposal will encompass all costs associated with the requirements of the proposed contract and will comply with the applicable FAR and NASA FAR Supplement Regulations and governing statutory requirements.

3. It is contemplated that a contract will be awarded for the base period (March 1, 2008 through February 28, 2009) with four 1-year, priced option periods (through February 28, 2013). The Offeror and their team members/major subcontractors, if any propose under a cost type arrangement are required to state ceiling G&A rate(s) that they will be willing to accept for the life of this contract. (Reference Attachment J-6)

4. The cost proposal preparation instructions set forth herein are applicable to the Offeror as a prime contractor, team members/major subcontractors (if any). A major subcontract is defined as a subcontract estimated to exceed \$550,000 in total value for the base period and all options.

**Final RFP NNM08125357R**

5. The Offerors must use Microsoft Excel 2003 compatible with Microsoft Office XP Professional in submitting their proposals. Specific instructions for submitting computerized data are contained in paragraph "d. Cost Proposal Preparation" below. The Offeror shall not alter proposal electronic spreadsheet file formats except for lengthening forms as appropriate or adjusting column widths. To the extent of any inconsistency between data provided on the CD-ROM and proposal hard copies, the hard copy data will be considered to be the intended data.

6. The normal MSFC duty hours are provided for the Offerors' information. Normal duty hours are defined as a 5-day week, Monday through Friday, (excluding legal holidays), 8 hours per day between the hours of 6:30 a.m. and 5:30 p.m. Clause I.16, Statement of Equivalent Rates for Federal Hires, lists the normal holidays observed by NASA.

**b. Pricing and Estimating Techniques**

1. All pricing or estimating techniques shall be clearly explained in detail (projections, rates, ratios, percentages, factors, etc.) and shall support the proposed cost in such a manner that audit, computation, and verification can be accomplished. Also, any experience factors (unit price, hours, quantities, efforts, etc.) adjusted for proposal purposes shall be included in this area.

2. All past actuals shall show the period of time and costs in detail when used as a basis of estimating.

3. Each Offeror shall submit estimates of the costs, and at the rates expected to be negotiated for a contract and performance thereunder. There will be no advantage in proposing costs or rates which are understated on the assumption that they will increase the probability of receiving a contract award. Since total cost estimates will not be given a numerical score in the evaluation process, unrealistic costs or rates, either low or high, will tend to indicate a lack of understanding of the Performance Work Statement and requirements for contract performance.

4. Unrealistically low estimates will adversely impact the Offeror's Mission Suitability ratings and scores.

5. The Offeror shall disclose the methods used in determining particular classifications of cost (direct versus indirect). The Offeror shall furnish a synopsis of accounting policies and procedures. The proposed overhead and G&A rates shall be supported by forecasts and substantiating rationale which provide the following specific information for each rate, including any forward pricing rate agreements (this applies to the prime, teaming partner, and each proposed major subcontract):

- (a) Major elements within each indirect pool and functions performed.
- (b) Allocation base (comprising elements and basis for projections).
- (c) Equivalent indirect personnel in each pool by contract year. Specify types of personnel and functions performed.
- (d) Equivalent direct personnel in the allocation base by contract year.
- (e) This proposal base as a percent of total allocation base.

6. In accordance with the FAR Part 30, for any proposed large business teammate(s) or major subcontractor: (a) identify the Government Administrative Contracting Office (ACO) responsible for determination, and date of adequacy determination, of each Disclosure Statement for the prime and major subcontractors; (b) explain in detail any accounting practice where there is a disagreement between Offeror and the ACO; and (c) provide a new Disclosure Statement in the event the Offeror plans to establish a new cost/profit center for performance of this effort, or the existing Disclosure Statement does not accommodate the requirements imposed by this RFP.

**Final RFP NNM08125357R**

The prime, teammate(s) and all major subcontractors shall identify the cognizant Defense Contract Audit Agency (DCAA) (name, address, and telephone number) and the cognizant Government Agency (name, address, and telephone number) who currently approves forward pricing rates. Provide a copy of the latest approvals applicable to this cost proposal.

7. For any teammate/major subcontractor proposed to perform IDIQ work, the Offeror shall provide fully burdened labor rates per the matrix shown in Attachment J-6. The Offeror shall provide their proposed work split ratio (prime/each subcontractor) in each labor category.

8. Materials, Supplies, Tools, Equipment, Training, & Travel: Material costs for standard items not provided by the Government under the "Installation Provided Property" Clause of the contract are estimated at \$600,000 per year as indicated on Form CF. Materials under this category are those not normally stocked by the MSFC supply catalog and typically include items such as software, laboratory equipment and tools, raw materials, shop equipment and shop supplies needed to efficiently complete objectives or enhance existing MSFC capabilities. Travel expenses are estimated at \$30,000 per year as indicated on Form CF. Training expenses are estimated at \$10,000 per year as indicated on Form CF.

9. In determining the proposed optimum skill mix for each year of the mission services effort, the Offeror can assume that the amount of workload in each work area will remain constant throughout the life of the contract.

**c. Fee**

1. The Government anticipates the contract will be a cost-plus-award-fee type. Under this arrangement, evaluations of overall performance will be based on the Sample MSFC Award Fee Plan (Attachment L-11). Maximum award fee available in an evaluation period is specified in Clause B.2.

2. The Offeror's fee proposal should recognize the varying degrees of risk and challenges for the Contractor in performing different tasks within the PWS. The proposed fee arrangement should be commensurate with the contract type.

3. If formal teaming arrangements or other unique business arrangement combinations are proposed, a single fee pool will be established for distribution among the participant contractors/subcontractors, thereby precluding any pyramiding of fees. Offerors shall submit to the Government for evaluation all teaming agreements applicable to this effort.

4. General operating supplies, materials, tools, equipment, training and travel procured by the contractor will be reimbursed at actual cost plus negotiated material handling fee and will be non fee-bearing. Direct materials and incidental services will be fee bearing.

**d. Cost Proposal Preparation**

Electronic spreadsheets shall be submitted including the application of rates, a functional rate table, and all formulas necessary to calculate proposed cost. Cost data for rate application shall be presented by both contractor fiscal year and contract year. In order to facilitate verification of the proposed rates and factors, if the contract year overlaps two contractor accounting (fiscal) years, the Offeror shall provide a separate application of rates for each of the contractor accounting (fiscal) years, which are totaled to arrive at the contract year cost. Both the application of rates and totals must be clearly shown. Formats consistent with the Offeror's normal, disclosed, and/or approved estimating and accounting practices shall be used. The

**Final RFP NNM08125357R**

Offeror's established labor classifications, by individual labor position (including hours and rates), and all other cost categories (including overhead/burden rates), base amounts, and application of rates shall be clearly shown and mapped to the Government labor classifications as identified on the cost forms (see table in paragraph "2" below). Also a summary of total program cost by element of cost shall be provided.

1. In preparing the cost proposal, Offerors shall complete all applicable forms provided in Attachment L-1, Forms CA through CJ, and provide detailed supporting data to explain the basis and rationale for each proposed element of cost. The forms are designed to provide NASA with information necessary to evaluate all Offeror's proposals on a uniform and consistent basis. The composition of some forms may require an Offeror to classify some proposed elements of cost in a manner that differs from the Offeror's normal, disclosed, and/or approved estimating and accounting practices. To facilitate uniformity in evaluation, Offerors shall classify and propose cost elements in consonance with the specified format and furnish addenda which provide complete traceability, clearly explain, and reconcile the differences between the way the Offeror classifies its costs and the way costs are requested to be classified by the RFP cost forms. The contemplated resultant contract will be written in a manner which is consistent with the Offeror's normal, disclosed, and/or approved estimating and accounting practices.

2. The Offeror shall include each of the following forms in its cost proposal. For clarity, cost related forms are designated by a "C" prefix (staffing related forms are designated by an "S"). If a form is not applicable then the Offeror shall so state and provide complete supporting rationale. Any reproduction of the forms is the responsibility of the Offeror but must adhere to the format designs. Amounts proposed (excluding hourly labor rates) should be rounded to the nearest whole dollar. For all subcontracted effort, the prospective team members or major subcontractors (value over \$550,000 over the life of the contract) anticipated to perform under this contract shall complete all forms. The completed forms should be submitted through the prime contractor to the Government for evaluation. If the subcontractor considers any of this information to be proprietary data, it is incumbent upon the prime contractor to ensure that the completed forms are submitted, directly from the subcontractor to the Government contracting officer, not later than the proposal due date specified in this solicitation.

<u>Cost Form No.</u>	<u>Title</u>
CA	Total Program Cost – Real Year Dollars
CB	Work Year Equivalent (WYE) by Labor Category
CC	Labor Costs
CD	Payroll Additives Rate Development – Real Year Dollars
CE	Fringe Benefits – Real Year Dollars
CF	Purchased Supplies, Materials, Equipment, Travel, and Training – Real Year Dollars
CG	Overhead, G&A, and Other Indirect – Real Year Dollars
CH	Personnel and Fringe Benefit Policies
CI	Phase-In Cost – Real Year Dollars
CJ	IDIQ Fully Burdened Rates
DD Form 1861	Contract Facilities Capital Cost of Money

3. Labor Categories applicable to this contract, provided in Attachment J-5, provide the description of the labor categories that are to be used by each Offeror. The Offeror may add additional labor categories they deem necessary. The Offeror shall develop a matrix that maps the Offeror's internal labor categories to the labor categories listed on Forms CA through CC and Form CJ.

## Final RFP NNM08125357R

The Offeror shall provide all pricing information in accordance with its Attachment J-5, labor categories (Forms CA through CJ).

The Offeror shall provide the number of Direct Productive Labor Hours (DPLH) that they will use for Work Year Equivalent (WYE) to prepare the Mission Services proposal (PWS 1.0 and 2.0).

4. Instructions for completing the provided forms are as follows:

### Form CA: Total Program Cost

(i) The Offeror (prime, teammates, and major subcontractors) shall complete the attached Form CA. This form shall include the total program costs by year showing: labor hours, weighted average labor rates by labor category, rates, and amounts; labor overhead bases, rates, and amounts; non-labor amounts; G&A base, rate, and amount; and Cost Of Money (COM) base, rate, and amount. If necessary, the Offeror may add additional exempt labor categories to the attached Form CA. The detailed cost schedules required in paragraph (ii) below shall show how the Offeror's disclosed/normal accounting cost categories were conformed and summed to the cost categories specified in Form CA. The Offeror shall provide a separate Form CA for PWS elements (through the 3<sup>rd</sup> level in section 2.0 and 2<sup>nd</sup> level in section 1.0), excluding PWS 3.0.

(ii) In addition, detailed cost schedules shall be provided by the prime, teammates, and each major subcontractor that supports the development of Form CA total amounts proposed. The prime, teammates, and each major subcontractor shall submit this data for the base period, each option period, and total contract. Cost data shall be presented by Contract/Contractor fiscal year. The teammates and major subcontractors may submit the detailed cost breakdown directly to the Government if the data is considered by the company to be proprietary in nature. Format consistent with each Offeror's normal, disclosed, and/or approved estimating and accounting practices may be employed, provided it shows the Offeror's established labor classifications, labor hours and rates as applied and summed (hours and dollars) to the RFP specified categories of labor on Form CA. All cost categories, including overhead/breakdown rates, base amounts, and applications shall be clearly shown and shall be summed to the Form CA labor, overhead, and nonlabor cost categories, and the Form CB labor categories.

(iii) Phase-in of 29 calendar days is not included in total program cost.

### Form CB – Work Year Equivalent (WYE) by Labor Category

This form shall include the "by year" contract total staffing levels (WYEs) by labor classification to which rates are applied. Provide WYEs on Form CB. A separate Form CB shall be provided by the prime, teammates, and each major subcontractor which supports the total. In addition, WYEs shall also be provided in the specified format for each PWS cost level.

For each supporting Form(s) CB, the individual Contractors (prime, teammates, and major subcontractor) normal labor classification WYEs shall be shown, conformed, and summed to the Government specified categories of labor as shown on the enclosed Form CB

**(Note – Offeror may add additional exempt categories).** Each form shall include PWS level, title, and description.

In supporting narrative, provide specific "skill level" information by individual position (Offeror may reference Attachment L-2, Form SC) that is planned to be applied for accomplishment of the described tasks. This should cover the time period from contract inception through all option periods for each job position.

**Final RFP NNM08125357R**

Form CC - Labor Costs

(i) Prepare and submit Form CC by each identified job classification.

(ii) The Offeror shall provide a listing of direct labor costs by category showing work year equivalents (WYEs), straight time hours; proposed hourly rates; straight time costs; overtime hours; and overtime costs. Special attention is invited to the U.S. Department of Labor Wage Determinations included as Attachment J-15. The logic and reasonableness of the relationship between personnel qualifications and proposed labor rate/costs will be carefully evaluated as a significant indicator of the Offeror's understanding of requirements. Should the above referenced Department of Labor Wage Determinations not reflect all labor classifications required for implementation of the Offeror's approach, appropriate action shall be taken and included as part of the proposal, pursuant to the clause entitled "Service Contract Act of 1965, As Amended." All such proposed classifications and corresponding labor rates shall be thoroughly described with complete supporting rationale.

(iii) WYEs shall be converted to straight time labor hours using the number of hours available per year as indicated below. Offerors shall provide, as supplemental data, the typical productive and nonproductive hours per work year based on their personnel and accounting policies and practices. Nonproductive time is all paid absences, e.g., vacations, holidays, sick leave and other authorized paid absences.

Term	Period Covered	Total Available Work Hours
Base Period	March 1, 2008 – February 28, 2009	2080
Option No. 1	March 1, 2009 – February 28, 2010	2080
Option No. 2	March 1, 2010 – February 28, 2011	2080
Option No. 3	March 1, 2011 – February 29, 2012	2088
Option No. 4	March 1, 2012 – February 28, 2013	2080

In determining the proposed optimum skill mix for each year of the mission services effort, the Offeror can assume that the amount of workload in each work area will remain constant throughout the life of the contract.

(iv) Provide the methodology and complete supporting rationale used to establish salary/wage ranges and pricing rates for each individual labor category, including consideration of the following: the various skills and disciplines; the features of the compensation plan designed to enable the Offeror to attract and retain qualified employees; escalation factors; applicability of collective bargaining agreements, if any; and overtime payment policies. In order to facilitate timely evaluation of cost proposals, the Offeror will use \$200,000 per year for the base year and each option year to account for overtime spread across non-exempt and exempt categories. This number reflects a dollar equivalent value reflecting overtime premium as defined in Clause B.6, Note 1. There will be no advantage in proposing the use of unpaid nonexempt overtime. If unpaid nonexempt overtime is proposed, adjustments will be made to the Offeror's proposal.

Any proposed uncompensated overtime for employees exempt from the overtime requirements of the Fair Labor Standards Act (FLSA) shall be identified, supported, and justified in the written explanation in the cost/price proposal.

Wage/salary increases shall be in compliance with any applicable union agreements. Offerors shall propose reasonable labor rate increases.

**Final RFP NNM08125357R**

The wage determination rates set forth herein represent the minimum rate of pay for entry-level employees performing under this contract. Offerors should consider the incumbent employees experience level and length of service when proposing rates which are based on retaining incumbent personnel.

The following uniform rates of change for pricing purposes are provided below:

Contract Year	Escalation Rates
Base Year	N/A
Option Year 1	2.7%
Option Year 2	2.7%
Option Year 3	2.9%
Option Year 4	3.0%

Form CD - Payroll Additives Rate Development – Real Year Dollars

(i) FICA

Use a rate of 7.65 percent. This rate is composed of Hospital Insurance Tax (HIT) at 1.45 percent and Old Age, Survivors, Disability Insurance (OASDI) at 6.20 percent. Maximum earnings subject to OASDI will be \$94,200 and HIT will be unlimited.

(ii) Federal/State Unemployment Insurance (FUI/SUI) -- Base proposed FUI/SUI costs on current rates and bases for the Federal Government and the states where the effort is to be performed.

(iii) Worker's Compensation -- Offerors shall provide an explanation and rationale for the average premium rate developed, considering the various risk categories encompassed by the planned workforce, the geographical distribution of the workforce, and appropriate loss and adjustment experience.

(iv) Other -- For any other expected types of payroll additives, Offerors shall provide an explanation and rationale for the proposed cost of each item.

Form CE - Fringe Benefits

It is imperative that the Offeror demonstrate their understanding and compliance with the requirements of the Service Contract Act, the Wage Determination, and any applicable union agreements in regard to minimum fringe benefit requirements for non-exempt employees.

Provide estimates on Form CE for each fringe benefit cost element (Group Health, Dental, Pension, Sick Leave, etc.) for all employees identified on Form CB under the labor categories. Offeror shall demonstrate that the estimates for fringe benefits shown on Form CE are incorporated into their proposed contract cost in accordance with their normal accounting and estimating practices for each contract year.

Form CF – Purchased Supplies, Materials, Equipment, Travel, and Training

Annual estimates, exclusive of G&A or other burden, for each year are set forth below and should be used for estimating purposes for purchased materials, supplies, tools, equipment, incidental subcontracting, travel, and training.

**Final RFP NNM08125357R**

Contract Year	Direct Materials and Incidental Subcontracting	Operations Supplies, Materials, Tools, and Equipment	Travel	Training
Base Year	\$275K	\$325K	\$30K	\$10K
Option 1	\$275K	\$325K	\$30K	\$10K
Option 2	\$275K	\$325K	\$30K	\$10K
Option 3	\$275K	\$325K	\$30K	\$10K
Option 4	\$275K	\$325K	\$30K	\$10K

Form CG – Overhead, G&A, and Other Indirect

Provide data indicated on Form CG for each overhead pool (if any), G&A and any other applicable indirect rates. As supporting data, show the element for the base period and each option period.

All proposed overhead/burden rates (labor overhead, material handling, procurement burden, G&A expense, etc.) shall be provided with the proposal.

Each Offeror shall propose a ceiling rate for G&A. The ceiling rate will be used in establishing the Government’s cost realism analysis for evaluation/selection purposes.

Form CH - Personnel and Fringe Benefits Policies

This form provides a standard format to disclose, by employee category, the application of personnel policies and fringe benefits which will be in effect at the time of award. Although only brief explanations are desired, sufficient information is required to allow an evaluation and estimate of all potential costs which will arise upon award of the contract. Comments are required on all of the items listed below under the proposed column, whether or not the policy is written. The consistent practice of the Offeror and its applicability to this proposal is to be provided. If the items below are not applicable, so state. Items pertinent to the Offeror which are not identified below must be included if cost recovery is anticipated.

- |                       |                           |
|-----------------------|---------------------------|
| Relocation            | Overtime Policy           |
| Insurance – Life      | Special Workweek          |
| Insurance – Health    | Compensatory Leave Policy |
| Severance Pay         | Suggestion Award Policy   |
| Per Diem              | Off-site Differential     |
| Vacation              | Bonus Plan                |
| Retirement            | Shift Premium Policy      |
| Holidays              | Training                  |
| Sick & Personal Leave | Other Differentials       |

Form CI - Phase-In Cost

Provide a complete summary of all phase-in costs, by element of cost, on Form CI. Proposed phase-in will be for a period not to exceed twenty-nine (29) calendar days. The cost and labor force shall be presented in the same detail as required by Form CA. Provide detailed schedules supporting the development of the proposed Form CI costs (for the prime, teammate(s), and each major subcontractor) showing how the Offeror's normal/disclosed cost categories were conformed and summed to the Form CI cost categories.

## Final RFP NNM08125357R

Phase-in costs shall include all costs incurred prior to full assumption of the PWS. These costs shall include those required to secure the initial staff, equipment, etc. and shall reflect the cost associated with staffing build-up to full assumption of contract responsibility. The Offeror's submission shall contain a separate and complete phase-in estimate delineated by element of cost in accordance with the Offeror's normal estimating procedures. Include relocation and travel cost associated with phase-in with supporting rationale. The Offeror shall delineate HSPD-12 cost as a separate and distinct line item of cost.

As stated in Clause F.6, Phase-In and Phase Out, the total firm-fixed price for a maximum of 29 calendar days (February 1, 2008 through February 29, 2008) phase-in period listed on Form CI, will be used to award a separate purchase order to fund the phase-in period.

### Form CJ – IDIQ Fully Burdened Rates

The Offeror shall provide fully burdened Prime Contractor labor rates, excluding purchased travel, materials, equipment, supplies, and fees, for each of the IDIQ labor categories required to perform the efforts specified in PWS 3.0 (see Attachment J-6, Schedule of IDIQ Fully Burdened Not-To-Exceed (NTE) Labor Rates for Prime & Major Subcontractors). Fully burdened labor rates shall also be provided for each Teammate(s) and/or Major Subcontractor (if Teammate(s) and/or Major Subcontractor are proposed to support PWS 3.0 efforts). In calculating these fully burdened labor rates, Offerors shall include costs for each of the expenses identified below. The Offeror shall provide these rates by labor category and by contract year.

The Offeror shall provide the base labor rate for each of the labor categories for the Prime Contractor and each Teammate(s) and/or Major Subcontractor. Additionally the Offeror shall list the labor escalation rates for each period (see instructions for Form CC).

Indirect/burden rates should be in terms of the Offeror's customary accounting practices. A complete listing of supporting type personnel and expenses included in the burden and/or general and administrative expense pools shall be provided. Indicate whether the rates quoted have been approved by the cognizant Government Audit Agency for forward pricing. If the projected burden rates include an allowance for general research, so state, and furnish complete details, such as the Government agreement and amount. Append a statement preferably of not less than three (3) years prior to experience, showing for each expense category, the amount of burden expense, the base to which applied, and the resultant burden rates.

### DD Form 1861 - Contract Facilities Capital Cost of Money

If Facilities Capital Cost of Money is proposed, in accordance with FAR 15.408(h), the Offeror shall submit DD Form 1861, showing the calculation of Facilities Capital Cost of Money.

#### **e. IDIQ Effort (WBS 3.0)**

Attachment J-6 shall be used for all Offerors to develop and provide, for evaluation purposes, fully burdened (less fee) labor rates for the WBS 3.0 Government labor categories. Labor rates listed in J-6 for IDIQ task orders shall not include any travel, training, materials, equipment, or supplies in the burdened labor rate.

#### **f. Computerized Input Instructions**

1. In addition to the requirements previously mentioned, Offerors and subcontractors/teammates are required to submit cost information data on Forms CA through CJ and DD1861 on CD-ROM.

**Final RFP NNM08125357R**

2. Two copies of each CD-ROM are to be submitted. Each CD-ROM provided is to have an external label indicating:

The name of the Offeror.  
A list of the files contained on the disk.

3. The Microsoft Excel spreadsheet format files are to be submitted to the Government using the following file identifier system:

- The first two alpha characters of the filename will be based on the Offeror's company names (e.g., General Motors Corporation might be "GM").
- The third and fourth alpha characters of the filename will contain, if applicable, the alpha character identifier to the subcontractor of which the spreadsheet format is submitted. If the format is not related to subcontractor data, "XX" is to be inserted in the filename for these alpha character positions.
- The fifth file identifier refers to the RFP form on which the data are contained. The applicable alphabetic letter (A through J) will be used for these spaces in the filename.
- The sixth file identifier refers to the number of the forms if more than one form exists.
- To the extent of any inconsistency between data provided on the disks and proposal hard copies, the hard copy data will be considered to be the intended data.

4. Electronic information submitted in response to this RFP shall not be password protected.

**Volume III – Past Performance Factor**

At the start of Volume III the offeror shall provide a Summary Assessment (limited to three pages) that includes the following:

- 1) In the event that any subcontractors or other teaming arrangements are utilized, the Offeror shall provide a summary listing (by name and address) of all team members, joint venture partners, subcontractors and vendors that have been identified by name throughout the Offeror's proposal and the proposed percentage of total work and contract value associated with each entity. If no subcontractors or other teaming arrangements are proposed this shall be noted.
- 2) The rationale for each contract selected as a most relevant contract for completion of form SB (see below; provided in Attachment L-2).
- 3) The Offeror, including any teammates/major subcontractors, shall provide voluntary turnover history for the past 3 years for exempt and nonexempt employees (or other major categorizations used by the offeror) for the Corporate entity bidding on this Contract for each contract or project comparable to this requirement.
- 4) The Offeror shall provide their composite corporate Lost Time Case (LTC) Rate for the last three calendar years for all corporate activities, including the Offeror and each major Subcontractor/Teammate.

In addition to the 3 page Summary Assessment, the Offeror shall complete a self assessment of their performance by completing and submitting to the Government one Form SB "Past Performance Questionnaire" for up to 8 of the Offeror's (including Teammates/Major Subcontractors) most relevant contracts comparable in contract type, scope and size (size

**Final RFP NNM08125357R**

includes both dollars and workforce) which are currently being performed or have been completed within the last 3 years. The Offeror shall provide the North American Industrial Classification System (NAICS) Code associated with the relevant contract. The limitation of 8 forms applies to the Offeror's entire team, regardless of the number of any Teammates/Major Subcontractors proposed and the page count shall not exceed eight pages per form. Contracts identified on Form SB which have been completed more than 3 years ago will not be evaluated. The same applies to Form SB's received in excess of the limitation of 8 forms.

For each of the 8 contracts identified, the Offeror shall forward copies of Form SB including preparation instructions to maximum of 3 customer representatives (e.g. CO and COTR) per contract for them to complete and submit to the Government. In addition to offeror provided references, the NASA/MSFC past performance database and references known to the SEB will be checked as deemed necessary. Instructions for completing the Past Performance Questionnaires are contained on the form.

In addition to the Summary Assessment, the Offeror shall provide in Chart form, Form SD, the Lost Time Case (LTC) Rates (not to exceed 2 pages) for the last 3 calendar years for each contract or project comparable in magnitude and scope to this requirement. Include the LTC Rate, number of injuries and illnesses that resulted in days away from work or the total lost workday cases, the total number of employees, and the total hours worked on each referenced contract/project. The NAICS is also required for each referenced contract/project.

**Volume IV – Completed RFP and Signed SF33**

The Offeror shall complete Items 12-18 on the SF33 and include three copies of the SF33 in this volume. All three copies of the SF33, shall have an original signature in Item 17. To aid in completing this Form, Items 12-18 have been highlighted in yellow on the electronic version of the RFP located on the NASA Acquisition Internet Service (NAIS) website.

The Offeror shall also complete the following sections of the RFP and include a copy of the RFP (Sections B-K plus Attachments) in this volume following the SF33s.

<b>Section/Attachment</b>	<b>Clause</b>	<b>Fill-in Required</b>
B	B.2	Table B-1 and B-2
	B.7	G&A Ceiling Rates
F	F.6, Paragraph (b)	Phase In Firm Fixed Priced amount
H	H.10, Paragraph (c)	Key Personnel and Facilities
J	Attachment J-6	Schedule of IDIQ burdened labor rates General and Administrative Rate Ceiling
K	K.2 through K.9	Representations and Certifications, as applicable

These sections of the RFP have been highlighted in yellow on the electronic version of the RFP located on the NASA Acquisition Internet Service (NAIS) website to aid the Offeror in their completion.

In the event the Government elects to award a contract from initial proposals without discussions, the signed SF33 and completed RFP will form the executed contract.

**[END OF SECTION]**

**SECTION L - LIST OF ATTACHMENTS**

<u>Attachment No.</u>	<u>Description</u>	<u>Pages</u>
L-1	Cost Related Forms ("C" Forms) CA – Total Program Cost – Real Year Dollars CB – WYE by Labor Category CC – Labor Costs CD – Payroll Additives Rate Development – Real Year Dollars CE – Fringe Benefits – Real Year Dollars CF – Purchased Supplies, Materials, Equipment, Training & Travel – Real Year Dollars CG – Overhead, G&A & Other Indirect – Real Year Dollars CH – Personnel & Fringe Benefits CI – Phase in Cost – Real Year Dollars CJ – IDIQ Fully Burdened Rates DD Form 1861 – Contract Facilities Capital COM	L-1-1 – L-1-30
L-2	Staffing Related Forms ("S" Forms) SA – Key Personnel Position Description and Resume SB – Past Performance Interview/ Questionnaire Form SC – Job Description/Qualification SD – Lost Time Case (LTC) Rates Matrix	L-2-1 – L-2-15
L-3	Facilities Site Map	L-3-1
L-4	MSFC & ED Organizational Chart	L-4-1 – L-4-2
L-5	Background	L-5-1 – L-5-3
L-6	(Reserved)	L-6-1
L-7	Historical Certifications	L-7-1 – L-7-7
L-8	Historical Test Data	L-8-1 – L-8-73
L-9	Historical Skill Mix	L-9-1 – L-9-6
L-10	Historical IT Application Seat Availability	L-10-1
L-11	Sample Award Fee Plan	L-11-1 – L-11-12

**ATTACHMENT L-2**

**STAFFING FORMS AND EXHIBITS**

<b>Form/Exhibit No.</b>	<b>Title</b>	<b>Pages</b>
SA	Key Personnel Position Description and Resume	L-2-2 – L-2-4
SB	Past Performance Interview/Questionnaire Form	L-2-5 – L-2-12
SC	Job Description/Qualification Form (JD/Q)	L-2-13 – L-2-14
SD	Lost Time Case (LTC) Rate Matrix	L-2-15

**FORM SA - KEY PERSONNEL POSITION DESCRIPTION AND RESUME**

**(Complete one form for each proposed Key Person. Copies of this form should be used for continuation of work experience; use plain bond paper if additional space is needed otherwise. Start with the present or most recent position and work back. Do not submit work experience prior to 1996. Employer and customer references may be contacted during the proposal evaluation period. The availability of the person referenced, complete mailing address, and complete telephone number shall be verified by the Offeror before submission).**

---

---

PROPOSED POSITION TITLE: \_\_\_\_\_

PROPOSED POSITION SALARY: \_\_\_\_\_

NAME OF PROPOSED KEY PERSON: \_\_\_\_\_

CURRENT EMPLOYER: \_\_\_\_\_

---

---

DESCRIPTION AND SCOPE OF PROPOSED KEY POSITION:

RATIONALE FOR SELECTING THIS AS A KEY POSITION:

REASONS FOR SELECTING PROPOSED PERSON FOR THIS POSITION:

---

---

THE PROPOSED PERSON:

HAS \_\_\_\_\_ HAS NOT \_\_\_\_\_ BEEN CONTACTED  
IS \_\_\_\_\_ IS NOT \_\_\_\_\_ COMMITTED TO THE PROPOSED POSITION  
HAS \_\_\_\_\_ HAS NOT \_\_\_\_\_ BEEN INCLUDED IN CONCURRENT PROPOSALS  
WILL DEVOTE \_\_\_\_\_% OF TIME TO THIS CONTRACT

**FORM SA - KEY PERSONNEL POSITION DESCRIPTION AND RESUME (Continued)**

COLLEGE EDUCATION OF PROPOSED KEY PERSONNEL:

**NAME & LOCATION OF**

**OF INSTITUTION   YEAR OF DEGREE   TYPE OF DEGREE & MAJOR**

OTHER SPECIALIZED TRAINING/MEMBERSHIP IN PROFESSIONAL SOCIETIES:

---

**EMPLOYMENT HISTORY (SINCE 1996) STARTING WITH CURRENT POSITION:**

***EXPLAIN ANY INTERRUPTIONS IN EMPLOYMENT***

DATES EMPLOYED:

TITLE/SALARY:

EMPLOYER & LOCATION:

TYPE OF BUSINESS:

NO. & KIND OF EMPLOYEES SUPERVISED:

EMPLOYER REFERENCE & PHONE NUMBER:

CUSTOMER REFERENCE & PHONE NUMBER:

JOB DESCRIPTION/ACCOMPLISHMENTS:

**FORM SA - KEY PERSONNEL POSITION DESCRIPTION AND RESUME (Continued)**

DATES EMPLOYED:

TITLE/SALARY:

EMPLOYER & LOCATION:

TYPE OF BUSINESS:

NO. & KIND OF EMPLOYEES SUPERVISED:

EMPLOYER REFERENCE & PHONE NUMBER:

CUSTOMER REFERENCE & PHONE NUMBER:

JOB DESCRIPTION/ACCOMPLISHMENTS:

---

DATES EMPLOYED:

TITLE/SALARY:

EMPLOYER & LOCATION:

TYPE OF BUSINESS:

NO. & KIND OF EMPLOYEES SUPERVISED:

EMPLOYER REFERENCE & PHONE NUMBER:

CUSTOMER REFERENCE & PHONE NUMBER:

JOB DESCRIPTION/ACCOMPLISHMENTS:

**FORM SB - PAST PERFORMANCE INTERVIEW/QUESTIONNAIRE**

This evaluation should be completed by the Contracting Officer (CO), Contracting Officer's Representative or Contracting Officer's Technical Representative (COR or COTR), Task Monitor (TM), or other person identified in the contract by the appropriate Contracting Officer with monitoring the contractor's compliance with the requirements of the contract.

***In compliance with the direction in the FAR, the information contained in this evaluation is not subject to view by anyone other than the designated source selection evaluation personnel.***

**INSTRUCTIONS, DEFINITIONS, AND RATING GUIDELINES**

Instructions

This evaluation is to be completed as indicated below. For purposes of these evaluations, the term "project" is intended to mean "contract". This package consists of the following:

Section	Description
Section I	Basic contract information
Section II	Government Evaluator identifying information
Section III	Contractor Performance Report

For each contract selected, three separate assessments are required; a self assessment by the Offeror, an assessment by the appropriate Contracting Officer (CO), and one by the cognizant COTR.

The Offeror shall complete one Form SB (Sections I, II, & III) for each relevant contract as their self assessment and return as the past performance factor (Volume III) (See L.12 for page limitation).

In addition, the Offeror is responsible for completing Section I and Section II (point-of-contact information for CO and COTR excluding signature) of Form SB before forwarding the questionnaire to the appropriate CO and COTR for the evaluations required. The Offeror shall request the CO and COTR to complete the remainder of the questionnaire, seal their submittals, and mail them directly to the SEB at the address specified below (Past Performance references are excluded from the L.12 page limitation).

NASA/George C. Marshall Space Flight Center  
 ATTN: PS21/Kimberly S. Carson, Contracting Officer  
 Building 4203, Room B109  
 Marshall Space Flight Center, AL 35812

Any questions you might have concerning completion of this form should be addressed to the Contracting Officer, Kimberly Carson, at (256) 544-0609 or (256) 961-2035.

**FORM SB - PAST PERFORMANCE INTERVIEW/QUESTIONNAIRE (Continued)**

**CONTRACTOR PERFORMANCE REPORT**

***Section I***

**To be completed by Contractor requesting evaluation.**

Contract Number:		
Contract Title:		
Contract Prime Contractor:		
Contract Award Date:		
Contract Completion Date (including options):		
Contract Value (including Options)		
Contract Type:	Competitive	Non-Competitive
Description of Work		

**CONTRACTOR PERFORMANCE REPORT**

***Section II***

**To be completed by Contractor or Government person performing the evaluation.**

CO Name:	
CO Signature:	
Phone Number:	
Facsimile Phone Number:	
E-mail address:	
Date:	
COTR, COR, TM, or Other Name:	
COTR, COR, TM, or Other Signature:	
Phone Number:	
Facsimile Phone Number:	
E-mail address:	
Date:	

**FORM SB - PAST PERFORMANCE INTERVIEW/QUESTIONNAIRE (Continued)**

**CONTRACTOR PERFORMANCE REPORT**

**Section III**

**Definitions and Rating Guidelines**

The Factors/Ratings tables on the next page summarize contractor performance in each of the following rating areas. Each criteria should be assigned a rating, from highest to lowest, of Excellent Plus, Excellent, Good, Fair, Poor, or Unsatisfactory. If a particular criteria is not applicable, it should be rated in the far right column as N/A. However, the evaluator is encouraged to provide comments on any rating to further support a particular rating.

The following definitions and instructions should be used as guidance to aid in evaluating the criteria in the Factors/Ratings tables. Please read the definitions and instructions before rating any criteria to be sure that each criteria is graded in the context of the definitions. Also, please ensure that this assessment is consistent with any other assessments that have been done for the same contractor for the same work, such as for payment of fee purposes, exercise of option, other past performance requests, etc.

<b>Technical Performance</b>	<b>Cost Control</b>	<b>Timeliness of Performance</b>	<b>Management Effectiveness</b>
<ul style="list-style-type: none"> <li>- Compliance with contract requirement</li> <li>- Appropriateness of personnel</li> <li>- Technical excellence</li> <li>- Responsive to technical direction</li> <li>- Effective contractor recommended solutions</li> </ul>	<ul style="list-style-type: none"> <li>- Within budget (over/under target costs)</li> <li>- Current, accurate, and complete cost reporting and billings</li> <li>- Cost efficiencies</li> </ul>	<ul style="list-style-type: none"> <li>- Met interim schedule milestones</li> <li>- End items delivered on time</li> <li>- Contract administrative activities performed timely</li> </ul>	<ul style="list-style-type: none"> <li>- Reliable</li> <li>- Pro-active</li> <li>- Reasonable and cooperative</li> <li>- Flexible</li> <li>- Prompt notification of problems</li> <li>- Effective small and small disadvantaged business subcontracting program</li> <li>- Accuracy of reports</li> </ul>

The four headings above relate to the actual ratings defined on the following pages.

**FORM SB - PAST PERFORMANCE INTERVIEW/QUESTIONNAIRE (Continued)**

**CONTRACTOR PERFORMANCE REPORT**

**Section III (Cont'd)**

<b>Technical Performance</b>	<b>Cost Control</b>	<b>Timeliness of Performance</b>	<b>Management Effectiveness</b>
<b><i>Excellent Plus</i></b>			
<p>The contractor has demonstrated an exceptional performance level in any of the below categories that justifies adding a point to the score. This rating will be used only in those circumstances when contractor performance clearly exceeds the Excellent performance level.</p>			
<b><i>Excellent</i></b>			
There are no quality problems.	There are no cost issues.	There are no delays.	Responses to inquiries, technical, service, and administrative issues are effective and responsive.
<b><i>Good</i></b>			
Nonconformance or technical issues do not impact achievement of contract requirements.	Cost issues do not impact achievement of contract requirements.	Delays do not impact achievement of contract requirements.	Response to inquiries, technical, service, and administrative issues is usually effective and responsive.
<b><i>Fair</i></b>			
Nonconformance or technical issues require minor Agency resources to ensure achievement of contract requirements.	Cost issues require minor Agency resources to ensure achievement of contract requirements.	Delays require minor Agency resources to ensure achievement of contract requirements.	Response to inquiries, technical, service, and administrative issues is somewhat effective and responsive.
<b><i>Poor</i></b>			
Nonconformance or technical issues require major Agency resources to ensure achievement of contract requirements.	Cost issues require major Agency resources to ensure achievement of contract requirements.	Delays require major Agency resources to ensure achievement of contract requirements.	Response to inquiries, technical, service, and administrative issues is marginally effective and responsive.
<b><i>Unsatisfactory</i></b>			
Nonconformance or technical issues are compromising the achievement of contract requirements, despite use of Agency resources.	Cost issues are compromising performance of contract requirements.	Delays are compromising the achievement of contract requirements, despite the use of Agency resources.	Response to inquiries, technical, service, and administrative issues is not effective and responsive.

**FORM SB - PAST PERFORMANCE INTERVIEW/QUESTIONNAIRE (Continued)**

**CONTRACTOR PERFORMANCE REPORT**

Item	FACTORS/RATINGS	Excellent Plus	Excellent	Good	Fair	Poor	Unsatisfactory	N/A
<b>Technical Performance</b>								
1	Overall skill level & technical competence of Contractor personnel?							
2	Ability to identify risk factors and alternatives for alleviating risk.							
3	Rate the ability of the contractor to consistently provide quality products.							
4	Ability to identify and solve problems expeditiously							
<b>Cost Control</b>								
5	Ability to accurately estimate and control contract cost (if the contract experienced an overrun, please amplify on the following page).							
6	Did the Contractor diligently search for and apply cost efficient practices?							
7	Were Contractor's reports and documentation accurate and complete?							
<b>Timeliness of Performance</b>								
8	Completion of major tasks or key project milestones on schedule.							
9	Did the Contractor deliver end items in accordance with the Contract schedule?							
10	Were the Contractor's reports and documentation submitted timely?							
<b>Management Effectiveness</b>								
11	Rate the Contractor's effectiveness at directing, controlling and completing of all assigned tasks.							
12	Was the Contractor able to effectively coordinate, integrate & manage subcontractors?							
13	Did the Contractor management team show innovation and a proactive approach to problem identification and resolution?							
14	Was the Contractor effective in interfacing with the Government's staff?							
15	Was the documentation produced by the Contractor's efforts satisfactory to the users?							
16	Reserved							
17	Ability to recruit and retain specialized, critical and unique personnel and maintain a stable, high quality and well trained workforce.							

**FORM SB - PAST PERFORMANCE INTERVIEW/QUESTIONNAIRE (Continued)**

Item	FACTORS/RATINGS	Excellent Plus	Excellent	Good	Fair	Poor	Unsatis.	N/A
18	Responsiveness to changes in technical direction.							
19	Rate the Contractor's transition or phase-in effectiveness.							
20	Rate your satisfaction with the contractor's security performance and security policies.							
21	If the contractor made use of an automated electronic tasking system, how effective and efficient was that system?							
22	How well did the contractor address any task requirements that may have given them an unfair advantage in competing for future work? Was the contractor able to effectively mitigate any organizational conflicts of interest issues that may have been present?							
23	Please rate the contractor's efforts to retain a stable set of key management personnel.							
24	How well did the contractor perform in an export control environment?							
25	Commitment to Safety as indicated by the content and implementation of the Contractor's safety program including the basic plan as well as any special safety related initiatives							
26	Degree to which the program manager was given the authority to make the decisions necessary to support specific task requirements that might involve additional cost considerations (i.e., subcontracting for special skills, approving unique travel and training requests)?							
27	To what extent did the Contractor display initiative in meeting requirements?							
<b>Overall Evaluation</b>								
28	How would you rate the Contractor's <i>overall management performance</i> on this contract?							
29	How would you rate the Contractor's <i>overall technical performance</i> on this contract?							
30	Would you use this Contractor again? (If "No", please comment in the Narrative Summary)	<b>Yes</b>			<b>No</b>			
31	If this was an award fee contract, provide the adjective ratings for the last 3 evaluation periods.							
32	Averaged (3 year) referenced contract or project LTC Rates and latest available Department of Labor LTC Rates national average for the applicable NAICS.	LTC value _____		DOL average value _____			NAICS number _____	

**FORM B - PAST PERFORMANCE INTERVIEW/QUESTIONNAIRE (Continued)**

CONTRACTOR PERFORMANCE REPORT

**Section III (Cont'd)**

**NARRATIVE SUMMARY (Use this section to explain additional information not included above)**

Item	Comments

**FORM SB - PAST PERFORMANCE INTERVIEW/QUESTIONNAIRE (Continued)**

This form letter is provided for Offerors to use in transmitting the Past Performance questionnaire to customers

**PAST PERFORMANCE FORM LETTER EXAMPLE**

**Solicitation Name & RFP Number**

**CLIENT AUTHORIZATION LETTER: FORMAT**

*[Date of Letter]*

*[Name and Address of proposed Offeror's customer]*

Attention: *[Name and Designation of Customer's Contract Manager or Appropriate Contact]*

Dear *[Contact Name]*:

We are currently responding to the NASA, Marshall Space Flight Center Request for Proposal (RFP) NNM08125357R, Marshall Engineering Technicians and Trades Support (METTS) Services. NASA is requesting that clients of entities responding to their solicitation be identified and their participation in the evaluation process requested. In the event you are contacted for information on work we have performed, you are hereby authorized to respond to those inquiries. Your cooperation with this effort is greatly appreciated. Please direct any questions to *[Name and Phone Number of Offeror's Point-of-Contact]*.

*We have included our work for your agency as a past performance reference. A Past Performance Questionnaire is enclosed. Please complete Sections II and III of the enclosed evaluation and return the signed, completed document to:*

NASA/Marshall Space Flight Center  
Attention: PS21/Kimberly S. Carson  
MSFC, Alabama 35812

Please forward the completed evaluation to NASA at the above address to ensure it is received prior to **4:00 PM Local Time on September 7, 2007.**

*In order to maintain the integrity of this process, please **DO NOT** return the questionnaire to us. Return it to NASA/MSFC at the address listed above.*

Sincerely,  
*[Name of Signer]*  
*[Designation of Signer]*

cc:  
NASA/Marshall Space Flight Center  
Attention: PS21/Kimberly S. Carson  
MSFC, AL 35812

**Form SC, JOB DESCRIPTION/QUALIFICATION FORM (JD/Q)**  
 [Revised 05-22-07 – Average FB]

<b>TITLE</b>	Contractor Job Title: _____ Solicitation Job Title: _____ SCA Wage Determination Job Title: _____ SCA Directory of Occupations Classification Number _____
<b>TYPE</b>	<input type="checkbox"/> EXEMPT <input type="checkbox"/> NON-EXEMPT
<b>SALARY / WAGE RANGE</b>	ANNUAL FROM: _____ TO: _____ HOURLY FROM: _____ TO: _____
<b>FRINGE BENEFITS DESCRIPTION</b>	AVERAGE HOURLY COST OF FRINGE BENEFITS _____ _____ _____
<b>QUALIFICATION REQUIREMENTS</b>	EDUCATION: _____ EXPERIENCE: _____ _____

<b>TITLE</b>	Contractor Job Title: _____ Solicitation Job Title: _____ SCA Wage Determination Job Title: _____ SCA Directory of Occupations Classification Number _____
<b>TYPE</b>	<input type="checkbox"/> EXEMPT <input type="checkbox"/> NON-EXEMPT
<b>SALARY / WAGE RANGE</b>	ANNUAL FROM: _____ TO: _____ HOURLY FROM: _____ TO: _____
<b>FRINGE BENEFITS DESCRIPTION</b>	AVERAGE HOURLY COST OF FRINGE BENEFITS _____ _____ _____
<b>QUALIFICATION REQUIREMENTS</b>	EDUCATION: _____ EXPERIENCE: _____ _____

<b>TITLE</b>	Contractor Job Title: _____ Solicitation Job Title: _____ SCA Wage Determination Job Title: _____ SCA Directory of Occupations Classification Number _____
<b>TYPE</b>	<input type="checkbox"/> EXEMPT <input type="checkbox"/> NON-EXEMPT
<b>SALARY / WAGE RANGE</b>	ANNUAL FROM: _____ TO: _____ HOURLY FROM: _____ TO: _____
<b>FRINGE BENEFITS DESCRIPTION</b>	AVERAGE HOURLY COST OF FRINGE BENEFITS _____ _____ _____
<b>QUALIFICATION REQUIREMENTS</b>	EDUCATION: _____ EXPERIENCE: _____ _____

**Form SC, JOB DESCRIPTION/QUALIFICATION FORM (JD/Q) (Continued)**  
[Revised 05-22-2007 - Average FB]

**Instructions for Completing Job Description/Qualification Form (JD/Q)**

**TITLE**

There are three Job Description/Qualification forms per page. One form is to be completed for each job title/classification. (**NOTICE**: This applies to all proposing subcontractors as well)

- **Contractor Job Title** – Enter your company job title.
- **Solicitation Job Title** – Enter the job title identified in the solicitation.
- **SCA Wage Determination Job Title/Classification** - Enter the accurate Service Contract Act (SCA) job title/classification and SCA job number from the SCA Wage Determination.

[**NOTE**: Detailed position descriptions are contained in the SCA Directory of Occupations, Fifth Edition, April 2006, for each job classification listed on the wage determination]. In addition, the SCA Directory of Occupations can be found on-line at the following web address:

<http://www.dol.gov/esa/regs/compliance/whd/wage/SCADirV5/SCADirectVers5.pdf>

**TYPE**

Place an **X** in the Box that is applicable to the job title/classification.

- **Exempt** - Those job classifications identified in Title 29 CFR Part 541 dated April 23, 2004, as exempt classifications.
- **Nonexempt** – All job classifications other than those exempt by 29 CFR Part 541 dated April 23, 2007.

**SALARY / WAGE RANGES:**

For the specified job title/classification, enter the minimum annual pay in the **Annual From** space and the maximum annual pay in the corresponding **To** space or enter the equivalent minimum hourly pay in the **Hourly From** space and the maximum hourly pay in the corresponding **To** space.

**NOTE**: The minimum rate must never be lower than the SCA wage determination minimum.

**FRINGE BENEFITS:**

Provide the **exact average hourly cost of fringe benefits** for each service employee (See Title 29 CFR Part 4.175(b) for complete details).

**NOTICE**: The cost of **fringe benefits** for service (non-exempt) employees **shall not include** the cost of vacation pay, holiday pay, liability insurance, state and Federal taxes, professional liability insurance, unemployment or workmen's compensation insurance, etc.

**NOTE**: The **average hourly cost** of fringe benefits must be computed separately for **Exempt** (those employees not covered by the SCA) and **Nonexempt** (those employees covered by the SCA) employees.

**NOTICE**: The SCA makes **NO** distinction between full-time, part-time, and temporary "service employees" in regards to the required payment of fringe benefits, including vacation and holiday pay.

**DESCRIPTION**

Briefly describe the duties performed under the specified job title/classification.

**QUALIFICATION REQUIREMENTS**

Identify the education and experience requirements for an employee to qualify for the specified job title/classification.

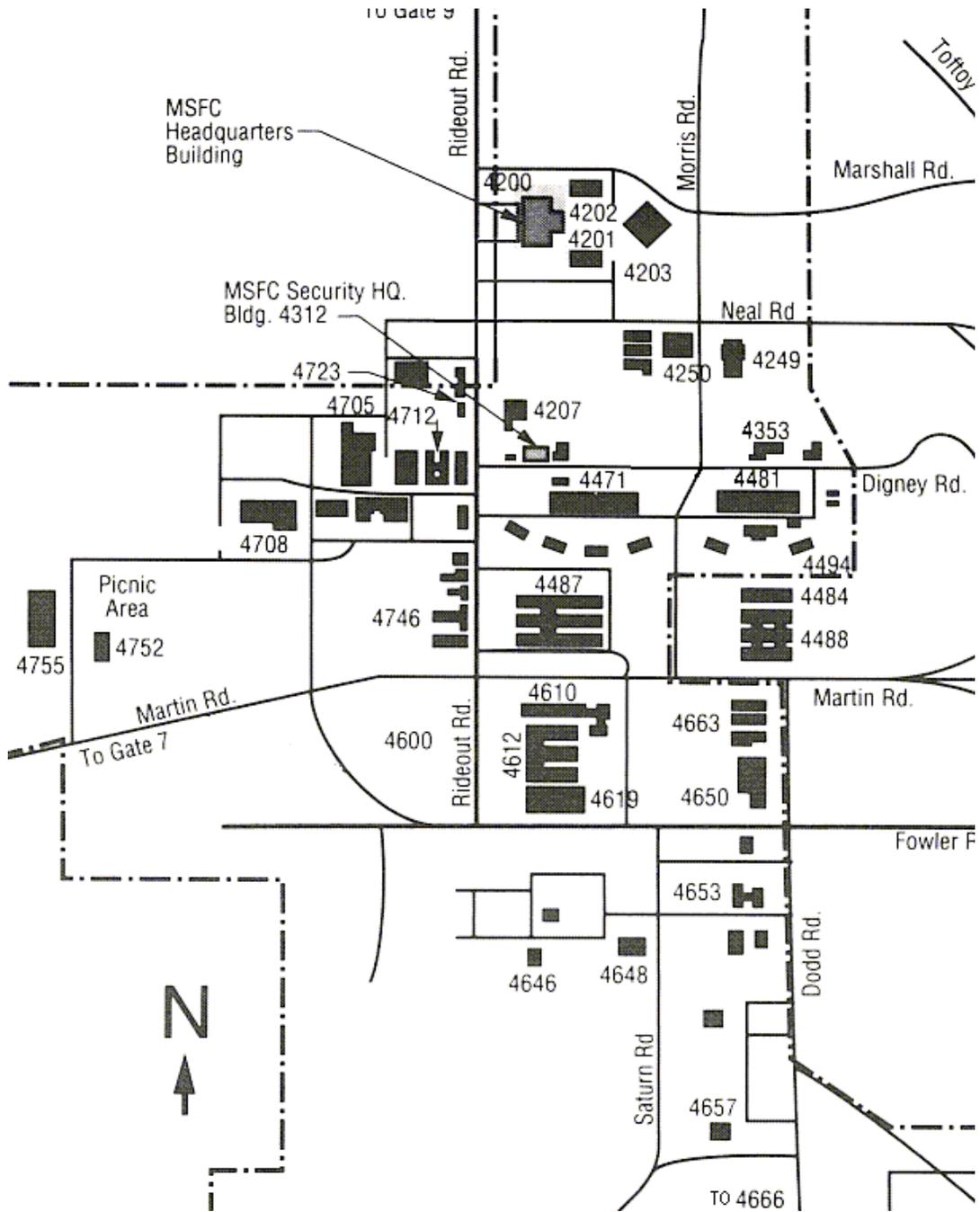
**FORM SD - LOST TIME CASE (LTC) RATES MATRIX**

SIC/NAICS	Company Name/Contract Name		Year	Year	Year
			2004	2005	2006
		<b>Lost Time Case (LTC) Rate</b>			
		<b>Number of lost workday cases (injury/illness)</b>			
		<b>Number of employees</b>			
		<b>Number of hours worked</b>			
SIC/NAICS	Company Name/Contract Name		2004	2005	2006
		<b>Lost Time Case (LTC) Rate</b>			
		<b>Number of lost workday cases (injury/illness)</b>			
		<b>Number of employees</b>			
		<b>Number of hours worked</b>			
SIC/NAICS	Company Name/Contract Name		2004	2005	2006
		<b>Lost Time Case (LTC) Rate</b>			
		<b>Number of lost workday cases (injury/illness)</b>			
		<b>Number of employees</b>			
		<b>Number of hours worked</b>			
(N / EH) X 200,000 = LTC Rates					
N = Sum of total lost-time injuries and illnesses in the year					
EH = Total number of hours worked by all employees in the year					
200,000 = equivalent of 100 full-time workers working 40 hour weeks 50 weeks per year					

ATTACHMENT L-3

FACILITIES SITE MAP

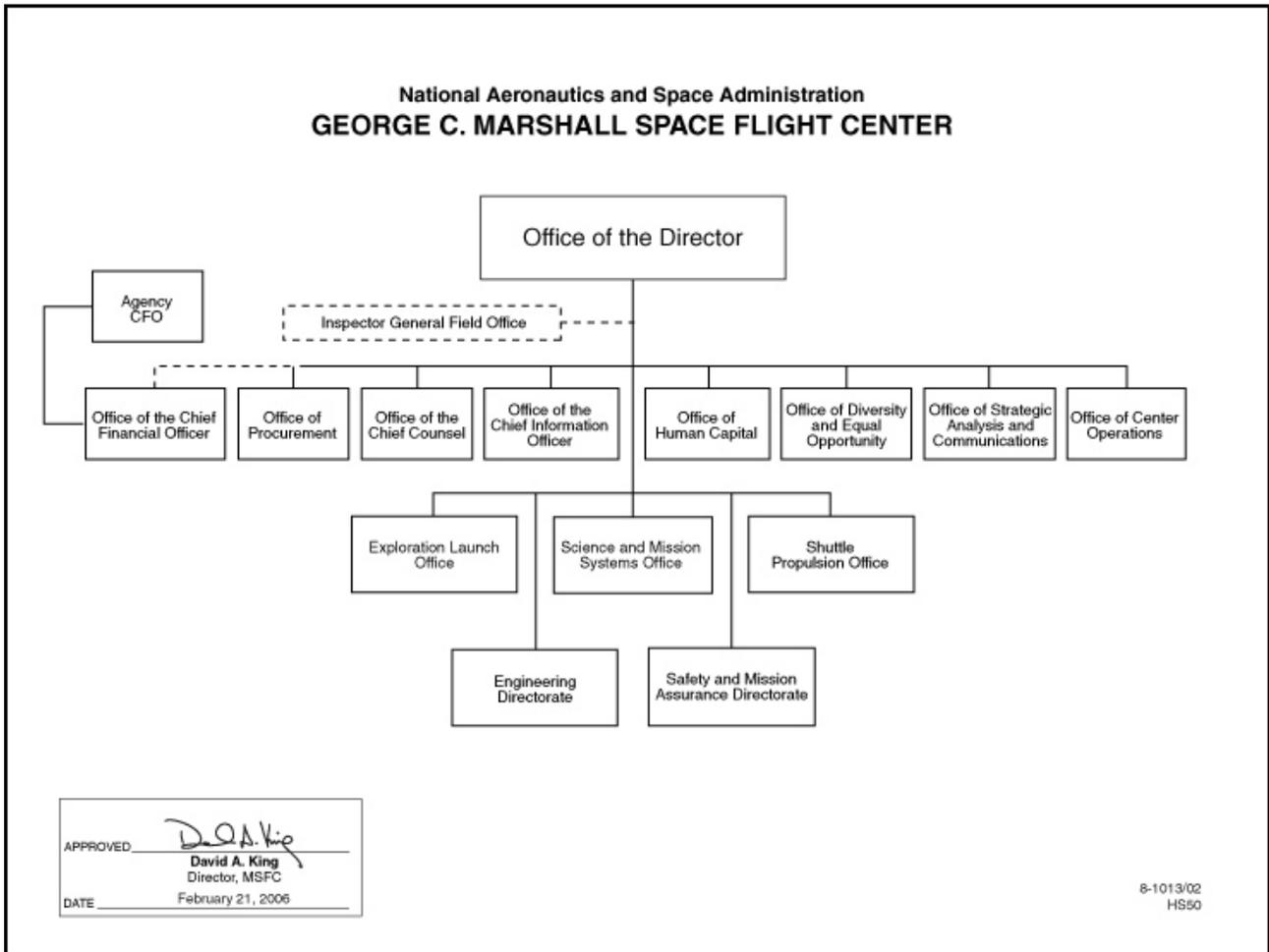
Figure 1: Facilities Site Map of the Marshall Space Flight Center



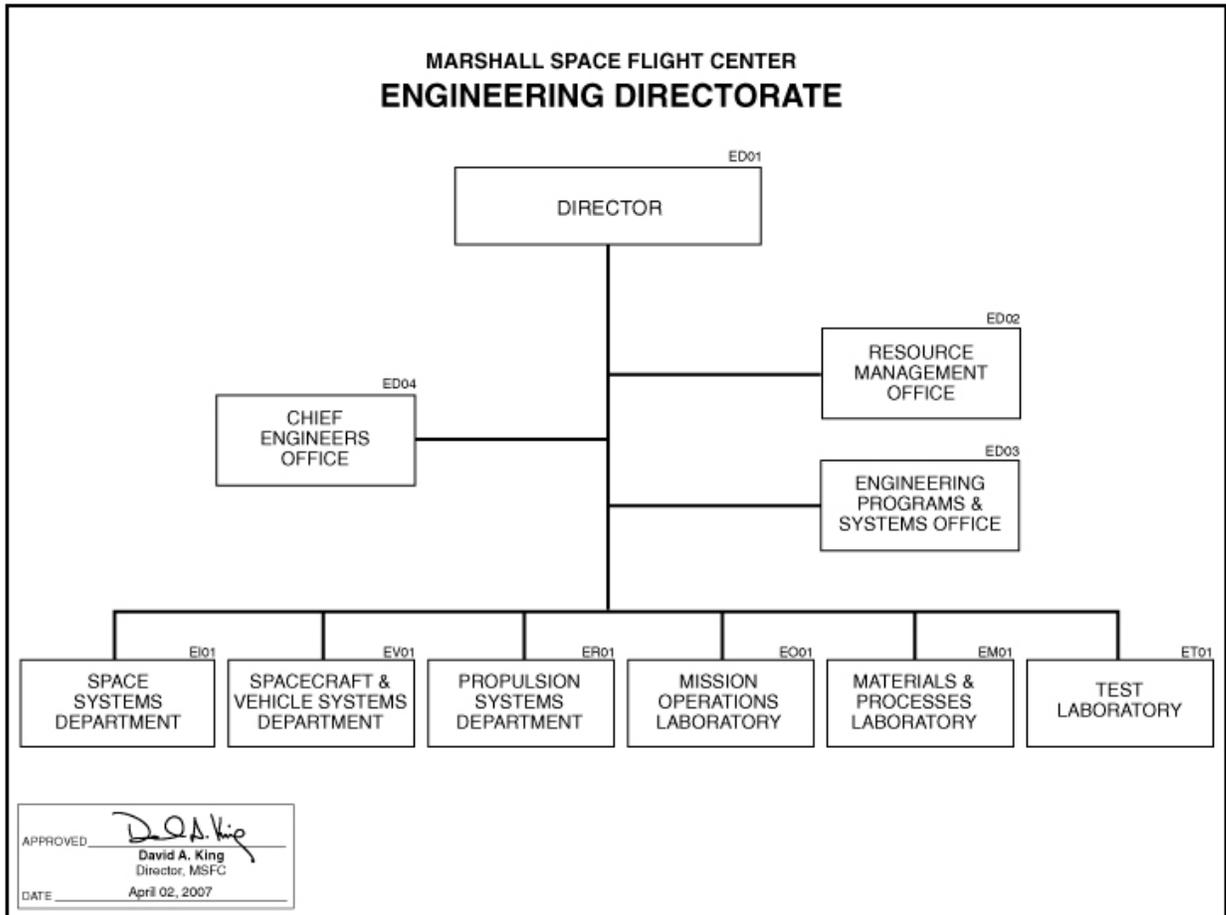
[END OF ATTACHMENT L-3]

ATTACHMENT L-4

MSFC ORGANIZATION CHART



ENGINEERING DIRECTORATE ORGANIZATION CHART



[END OF ATTACHMENT L-4]

ATTACHMENT L-5

**HISTORICAL BACKGROUND INFORMATION**

NNM06AB30C - Materials Testing in Aerospace Environments

(a) Disclaimer

The background and historical data contained herein is provided for the sole purpose of giving all the Offeror a better understanding of the requirements contained in the solicitation. The information provided constitutes a snapshot in time (May 2007) and is not intended to restrict prospective Offerors in their approach to proposal preparation. The quantity of work to be performed may vary in the future as the Center workload changes due to changing roles within MSFC and NASA.

(b) Overview

This contract began in 1986 when it was realized that there needs to be a central database of materials testing data. NASA had the need to provide existing NASA materials test data and general information to the centers, and to eliminate the duplication of effort among centers in materials work. In January 1986, MSFC awarded an 8(a) set-aside contract to Brown and Associates Management Services, Incorporated (BAMSI) to create a database of materials information, later to be called the Materials and Processes Technical Information System (MAPTIS). Several contract changes occurred during the first few years of this contract, and one or two contracts ended while others began.

The work on this contract expanded in October 1988 when NASA awarded another contract to BAMSI, Inc. to continue the work begun on the first contract, and also to create a material properties database that will also be part of the MAPTIS database system. The work under this contract was expanded by one task, then another. Materials testing were being performed in other parts of the MSFC Materials and Processes Laboratory and this testing data was being input into the database as it was generated. MSFC decided that it is best to have the testing performed by the same contractor, so a task was added to the BAMSI contract to perform materials testing.

The computer database support task and the materials testing task continued under this contract for several more years. MSFC management decided in the early 1990's to consolidate all of its computer programming work under one single contractor. As the BAMSI contract was coming to an end, much of the database work began to be shifted away to the center-wide programming contact. Materials testing then became the primary focus of this contract, with data entry into MAPTIS becoming a lesser effort.

MSFC awarded the next contract for materials testing in November, 1995 to Native American Services, Incorporated (NAS) as another 8(a) set-aside contract, NAS8-40789. MSFC testing capabilities continued to grow during the late 1990's and the number of employees on contract NAS8-40789 contract also continued to grow. MSFC also had the need to produce publications for the materials testing that was being performed, so a technical writing task was added to the contract.

The follow-on contract to contract NAS8-40789 was awarded in February 2000. MSFC made use of a law that allowed the Government to provide a direct contract award, of any size, to a tribal-owned company. MSFC awarded the *Materials Testing in Aerospace Environments* contract, NAS8-01050, to Integrated Concepts and Research Corporation (ICRC), a native-Alaskan, tribal-owned company. Materials testing tasks continued through this contract.

**Final RFP NNM08125357R**

MSFC witnessed very dynamic times during the tenure of the ICRC contract. The tribal-owned company procurement authority, and the nature of the materials testing umbrella, allowed this contract to grow tremendously during this time period. MSFC decided that this contract was a good vehicle for the work being performed in the Structural Strength Testing Facility and the Environmental Test Facility. The addition of these areas more than doubled the number of employees under this contract. Some time later, the testing in the North Test Area and the Electrical Fabrication Facility were also added, causing the number of employees on the contract to increase again.

The materials testing areas began soliciting commercial work to supplement the government work at about the same time period as ICRC began performance on this contract. The addition of commercial work proved to be a worthy avenue to offset the decreasing budget that the testing areas had begun experiencing. Private industries had found that MSFC could perform materials testing that could not be performed by private industry. MSFC and industry took advantage of the Space Act Agreement (SAA) process to bring work, and funds, into the Center. ICRC was also allowed, for small jobs, to utilize the Federal Acquisition Regulation (FAR) clauses that allow for a company to perform outside work using Government-owned equipment, and receive payments for the work not through the Government. This work was only allowed on a non-interference basis with Government work, and ICRC had to pay rent to the Government for use of the equipment prior to beginning the commercial work.

The current contract is continually adding new work tasks. The employees are developing new testing capabilities, and therefore adding new tasks as the demand for these tests increases. There are also other testing facilities within MSFC where small contracts are ending. It has been demonstrated that rolling these testing tasks under this contract is the most cost-effective means of achieving continuing the necessary work.

MSFC expects that the needs falling within the scope of this contract will continue to be dynamic. New test methods will continue to be developed. New test areas will add their testing tasks to this contract. Most importantly, as NASA moves forward toward the goal of Moon and Mars missions, work that cannot be envisioned now will be added to this contract during the performance period.

NAS8-02115 - Research and Development Space Flight and Associated Hardware

The following data represents the number of Customer Orders issued and dollar range for FY06. The Offeror is cautioned that this data is for information purposes and some of the COs could have been worked across multiple years.

Cost Range	≤ \$5K	> \$5K ≤ \$15K	> \$15K ≤ \$25K	≥ \$25K
# of Customer Orders	913	100	17	28

The following data represents the number of Customer Orders issued and costs incurred for FY03 – FY06. The Offeror is cautioned that this data is for information purposes and some of the COs could have been worked across multiple years. Costs incurred also could include purchases of major equipment and materials.

FY	# of Customer Orders	Cost
2003	1257	\$ 5,902,694
2004	1425	\$ 4,694,259
2005	1138	\$ 7,625,320
2006	1058	\$ 3,519,115

**[END OF ATTACHMENT L-5]**

**ATTACHMENT L-6**

**(RESERVED)**

ATTACHMENT L-7

HISTORICAL CERTIFICATIONS

**I. WBS Element 2.1 Materials Testing**

Promoted Ignition-Combustion Testing

Cryogenic Handler

Program Critical Hardware – Forklift Operator (Class 1, 3 or 5)

Overhead Crane/Hoist Operation

High-Pressure Systems Operation

Credentials Listed in the following OWIs:

EM10-OWI-CHM-037

EM10-OWI-CHM-050

EM10-OWI-CHM-051

EM10-OWI-CHM-057

EM10-OWI-CHM-058

EM10-OWI-CHM-061

EM10-OWI-CHM-064

Flammability Testing

High-Pressure Systems Operation

Lockout/Tagout

Credentials Listed in the following OWIs:

EM10-OWI-CHM-034

EM10-OWI-CHM-036

EM10-OWI-CHM-050

EM10-OWI-CHM-051

EM10-OWI-CHM-058

Liquid and Gaseous Oxygen Mechanical Impact Testing

Cryogenic Handler

High-Pressure Systems Operation

Credentials Listed in the following OWIs:

EM10-OWI-CHM-032

EM10-OWI-CHM-033

EM10-OWI-CHM-050

EM10-OWI-CHM-051

EM10-OWI-CHM-058

EM10-OWI-CHM-061

Advanced Materials Ignition Testing

Cryogenic Handler

High-Pressure Systems Operation

Credentials Listed in the following OWIs:

EM10-OWI-CHM-038

EM10-OWI-CHM-045

EM10-OWI-CHM-050

EM10-OWI-CHM-051

EM10-OWI-CHM-057

EM10-OWI-CHM-058  
EM10-OWI-CHM-059  
EM10-OWI-CHM-060  
EM10-OWI-CHM-061  
EM10-OWI-CHM-062  
EM10-OWI-CHM-063  
EM10-OWI-CHM-082  
EM10-OWI-CHM-083  
EM10-OWI-CHM-089

Thermal Vacuum Stability (Outgassing) Testing

Electrostatic Discharge

Lockout/Tagout

Credentials Listed in the following OWIs:

EM10-OWI-CHM-040  
EM10-OWI-CHM-050  
EM10-OWI-CHM-051  
EM10-OWI-CHM-058

Toxic Offgassing (Toxicity) Testing

Cryogen Handler

Electrostatic Discharge

Credentials Listed in the following OWIs:

EM10-OWI-CHM-039  
EM10-OWI-CHM-050  
EM10-OWI-CHM-051  
EM10-OWI-CHM-058

Test Sample Verification and Preparation

Credentials Listed in the following OWIs:

EM10-OWI-CHM-042  
EM10-OWI-CHM-050  
EM10-OWI-CHM-051  
EM10-OWI-CHM-058

**II. WBS Elements 2.2 ETF/EFDTF Test Support**

**Center Level Certifications**

PCH - Overhead Crane / Hoist  
PCH - Forklift Operator Class 1  
PCH - Forklift Operator Class 3  
PCH - Forklift Operator Class 5  
PCH - Forklift Operator Class 7  
Forklift Operator Class 1  
Forklift Operator Class 2  
Forklift Operator Class 3  
Forklift Operator Class 4  
Forklift Operator Class 5  
Forklift Operator Class 7

Cryogen Handler / Designer  
Lockout / Tagout Authorized Employee  
PCH - Manual Move  
Electrostatic Discharge Awareness for Electrical Hardware  
Aerial Lift Operator (Boom Supported)  
Aerial Lift Operator (Vertical)  
High Pressure System Operators (> 150 psig)  
Respirator (Non-SCUBA)  
Confined Space Entry  
Propellant & Explosive Handler  
Foreign National Escort

**III. WBS Elements 2.3 Structural Test Support**

**Certification**

PCH - Forklift Operator Class 5  
PCH - Forklift Operator Class 7  
Cryogen Handler / Designer  
Lockout / Tagout Authorized Employee  
PCH - Manual Move  
Electrostatic Discharge Awareness for Electrical Hardware  
Aerial Lift Operator (Boom Supported)  
Aerial Lift Operator (Vertical)  
High Pressure System Operators (> 150 psig)  
Respirator (Non-SCUBA)  
Confined Space Entry

**HISTORICAL UNIQUE CERTIFICATIONS**

**Certification/Training**

PCH Overhead Crane/Hoist      Restrictions: 4619;  
CRN0003,Remote Control Only;  
25T  
PCH Overhead Crane/Hoist      Restrictions: 4619; CRN 0003,  
0004, 25 Ton Cab; Remote and Cab  
Control  
PCH Overhead Crane/Hoist      Restrictions: Temporary; 4619;  
CRN 0003; 0004, 25T; Remote and  
Cab Control

**Final RFP NNM08125357R**

- PCH Overhead Crane/Hoist    Restrictions: CRN 0003;  
CRN0004; R/C 25T, CAB 25T
- PCH Overhead Crane/Hoist    Restrictions: 4619; CRN0003,  
0004; Remote & Cab Control; 25T
- PCH Overhead Crane/Hoist    Restrictions: CRN0003, 0004,  
Remote Control 25 Ton Cab; 4619  
Remote Control/Cab Control
- Tensile Test Machine Operation, OJT  
Strain Gage Installation, OJT
- Vacuum System Operation, OJT
- Welding Equipment (soldering, MIG, TIG, stick), OJT
- Manual and CNC Machining Operations, OJT
- Stainless Steel Tubing Bending and Flaring Operations, OJT
- High Pressure Hydraulic System Operation (e.g., hydraulic  
pumps, servo control systems), OJT

**IV. WBS Element 2.4 Fabrication and Assembly of R&D Space Flight and Associated Hardware**

Fusion Welding	MSFC-SPEC-766 MSFC-SPEC-504C MSFC-SPEC-560A ANSI/AWS D 1.1-2000 ASME B31.1-1998 ASME B31.3-1999
Brazing	AWS-C3.4-1999 AWS-C3.5-1999 AWS-C3.6-1999 AWS-C3.7-1999
Heat Treatment	SAE-AMS-2770 SAE-AMS-2771 SAE-AMS-2772 SAE-AMS-H-6875A SAE-AMS-H-81200 ASTM-B661-1999 MSFC-SPEC-469
Surface Treatment/Electroplating	TT-C-490D MIL-S-5002D

**Final RFP NNM08125357R**

	MIL-DTL-13924D MIL-DTL-16232G SAE-AMS-QQ-N-290 SAE-AMS2422D ASTM B488-95 MIL-C-5541E SAE-AMS-QQ-P-35 MIL-A-8625F SAE-AMS-QQ-C-320 SAE-AMS-QQ-P-416 MIL-DTL-13924D SAE-AMS-2422D ASTM B488 ASTM A967
Painting	MSFC-PROC-547C DOD-P-15328D MIL-PRF-23377G
Precision Cleaning	ISO 14644-1-1999 MSFC-STD-246B MSFC-SPEC-164B MSFC-PROC-166D SN-C-0005D MIL-STD-1246C
Dry Film Lubrication	MSFC-RQMT-1282A
Adhesive Bonding:	MSFC-SPEC-445A
Flex Hose Fabrication:	INDUSTRY STANDARDS
Forklift and Overhead Crane Operation:	MWI 6000.1B MWI 6410.1B MWI 6430.1C MWI 8715.3A NPG 6000.1 NSS/GO 1740.9 29 CFR 1910.179
Dye Penetrant Inspection Magnetic Particle	SNT-TC-IA-SUP D ASTM-E-1444-94A SNT-TC-IA-SUP B
Eddy Current Ultrasonic	SNT-TC-IA-SUP E SNT-TC-IA-SUP C

**V. WBS Element 2.5 Electrical Fabrication, Test and Assembly**

Hand Soldering	MSFC-STD-2903 NASA-STD-8739.3
----------------	----------------------------------

**Final RFP NNM08125357R**

Crimping, Interconnecting Cables Harnesses and Wiring	MSFC-STD-2905A NASA-STD-8739.4
ESD Control	MSFC-RQMT-2918A
Strain Gage Installation	ASTM E 1237-93
Conformal Coating and Staking	MSFC-STD-2906A NASA-STD-8739.1 MSFC-PROC-508
Surface Mount Technology	MSFC-STD-2904A NASA-STD-8739.2
Fiber Optics	NASA-STD-8739.5
Soldering	J-STD-001DS*

\* J-STD-001DS      This standard is an aerospace addendum to the industry standard.  
It can be found at:

[http://www.ipc.org/4.0\\_Knowledge/4.1\\_Standards/J-STD-001DS-addendum.pdf](http://www.ipc.org/4.0_Knowledge/4.1_Standards/J-STD-001DS-addendum.pdf)

**VI. WBS Element 2.6 Reserved**

**VII. WBS Element 2.7 Space Environmental Effects Testing**

Contamination Control Support

Cryogen Handler  
Vacuum system operation

Space Environmental Effects Testing

Laser Operator, Class 3B or 4  
Overhead Crane/Hoist Operation  
Radiation Facility Operator  
Radiation Hazards  
Cryogen Handler  
High Reliability Soldering  
Program Critical Hardware – Manual Move  
Vacuum system operation  
Forklift operator

Specific to ITF Support

Explosives Handlers  
Laser Operator, Class 3B or 4  
Overhead Crane/Hoist Operation  
Cryogen Handler  
US Government Secret Security clearance  
Vacuum system operation  
Forklift operator

ESL System Operations

Laser Operator, Class 3B or 4  
Cryogen Handler  
Vacuum system operation

**VIII. WBS Element 2.8 Soil Moisture Testing**

N/A

**IX. WBS Element 2.9 Environmental Gas Laboratory Support**

Cryogenic Handler  
High-Pressure Systems Operation

**X. WBS Element 2.10 Computer Aided Design Drawing**

U. S. Government Secret Security Clearance

**XI. WBS Element 2.11 Data Analysis and Database Entry for MAPTIS**

N/A

**XII. WBS Element 2.12 Optics Support**

Respirator/Non-SCBA Certification  
Lockout/Tagout  
Electrostatic Discharge  
Confined Space Entry  
Program Critical Hardware – Forklift Operator (Class 1, 3 or 5)  
Overhead Crane Operation

**XIII. WBS Element 2.13 Tool Crib Operation**

Program Critical Hardware – Forklift Operator (Class 1, 3 or 5)  
Program Critical Hardware – Overhead Crane/Hoist

[END OF ATTACHMENT L-7]

## ATTACHMENT L-8

## HISTORICAL TEST DATA

I. WBS Element 2.1 Materials Testing

<i>Materials Testing Reports – Materials Combustion Research Facility</i>					
<u>January 2004 through May 2007</u>					
<u>Tracking Number/ Priority</u>	<u>Test Date</u>	<u>Test Type (ref. NASA- STD-6001)</u>	<u>Test Conditions</u>	<u>Material Designation/ Description</u>	<u>NASA Project or Customer</u>
107693/4	12/31/2003	7	120F/72 hrs/14.7 psia	MO 08903	MCRF/TI
107694/4	12/31/2003	7	120F/72 hrs/14.7 psia	MO 08904	MCRF/TI
107696/4	12/31/2003	7	120F/72 hrs/14.7 psia	TM 01732	MCRF/TI
107699/1	12/31/2003	13A	Lox/-297F/14.7 psia	Cantesco™	ET
107700/0	12/31/2003	13A	Lox/-297F/14.7 psia	Leak-Tec™	ET
107703-A/1	12/31/2003	1	20.9%O2/14.7 psia	Nylon/6/6	Research
107703-B/1	12/31/2003	1	20.9%O2/14.7 psia	Nylon/6/6	Research
107703-C/1	12/31/2003	1	20.9%O2/14.7 psia	Nylon/6/6	Research
107703-D/1	12/31/2003	1	20.9%O2/14.7 psia	Nylon/6/6	Research
107655/4	1/15/2004	TVS	125C/5.5E-06 torr	Dun-Met™ DE 350	Research

**Final RFP NNM08125357R**

107656/4	1/15/2004	TVS	125C/5.5E-06 torr	Dun-Met™ DE 362	Research
107695/4	1/15/2004	TOX	120F/72 hrs/14.7 psia	Dun-Met™ TM 05214	Research
107697/4	1/15/2004	TOX	120F/72 hrs/14.7 psia	Dun-Met™ TM 02522	Research
107705/1	1/15/2004	Special	.5 hrs @ 130F/ 1 hr @ 130 F	Aclar/Polyester Laminate	Research
107640-ZE/4	1/22/2004	TOX	120F/72 hrs/14.7 psia	Lexan™ FR 700-701	MCRF/TI
107640-ZF/4	1/22/2004	TOX	120F/72 hrs/14.7 psia	Lexan™ FR 700-701	MCRF/TI
107698/4	1/22/2004	TOX	120F/72 hrs/14.7 psia	Dun-Met™ TM 01734	MCRF/TI
107704/2	1/22/2004	TOX	120F/72 hrs/14.7 psia	SAMS-TSH-ES	ISS
107706/2	1/22/2004	1	20.9% O2/14.7 psia	Moldite A	Commercial
107707/2	1/22/2004	1	20.9% O2/14.7 psia	Moldite B	Commercial
107640-ZG/4	1/29/2004	7	120F/72 hrs/14.7 psia	Lexan™ FR 700-701	MCRF/TI
107640-ZG/4	1/29/2004	7	120F/72 hrs/14.7 psia	Lexan™ FR 700-701	MCRF/TI
107706/2	1/29/2004	7	120F/72 hrs/14.7 psia	Moldite A	Commercial
107706/2	1/29/2004	7	120F/72 hrs/14.7 psia	Moldite A	Commercial
107708/2	1/29/2004	7	120F/72 hrs/14.7 psia	Moldite C	Commercial
107708/2	1/29/2004	1	20.9% O2/14.7 psia	Moldite C	Commercial
107708/2	1/29/2004	7	120F/72 hrs/14.7 psia	Moldite C	Commercial
107709/4	1/29/2004	7	120F/72 hrs/14.7 psia	Dun-Met™ MO 11616	MCRF/TI

Final RFP NNM08125357R

107709/4	1/29/2004	7	120F/72 hrs/14.7 psia	Dun-Met™ MO 11616	MCRF/TI
107710/4	1/29/2004	7	120F/72 hrs/14.7 psia	Dun-Met™ TM 02566	MCRF/TI
107710/4	1/29/2004	7	120F/72 hrs/14.7 psia	Dun-Met™ TM 02566	MCRF/TI
107719/2	1/29/2004	1	20.9%O2/14.7 psia	MCC-1/TIGA 3216/K-54	SRB
107719/2	1/29/2004	1	20.9%O2/14.7 psia	MCC-1/TIGA 3216/K-54	SRB
107720/2	1/29/2004	1	20.9%O2/14.7 psia	RT-455	SRB
107720/2	1/29/2004	1	20.9%O2/14.7 psia	RT-455	SRB
107657/4	2/12/2004	TVS	125C/24 hrs/5.5E-6 torr	Dun-Met™ DE 400	MCRF/TI
107658/4	2/12/2004	TVS	125C/24 hrs/5.5E-6 torr	Dun-Met™ DE 404	MCRF/TI
107659/4	2/12/2004	TVS	125C/24 hrs/5.5E-6 torr	Dun-Met™ TM 05565	MCRF/TI
107702/4	2/12/2004	7	120F/72 hrs/14.7 psia	Dun-Met™ TM 01733	MCRF/TI
107722-A/2	2/12/2004	13A LOX	LOX/-297F/14.7 psia	Novec™ HFE-72DE	Research
107722-B/2	2/12/2004	13A LOX	LOX/-297F/14.7 psia	Novec™ HFE-72DE	Research
107712/4	2/19/2004	7	120F/72 hrs/14.7 psia	Dun-Met™ MO 01503	MCRF/TI
107727/0	2/19/2004	13A LOX	Lox/-297F/14.7 psia	Leak-Tec™ OX-315 Type 3	ET
107640-ZH/4	3/4/2004	7	120F/72 hrs/14.7 psia	Lexan™ FR 700-701	MCRF/TI
107640-ZI/4	3/4/2004	7	120F/72 hrs/14.7 psia	Lexan™ FR 700-701	MCRF/TI
107662/4	3/4/2004	TVS	125C/24 hrs/5.0e-06 torr	RF 401	MCRF/TI

Final RFP NNM08125357R

107663/4	3/4/2004	TVS	125C/24 hrs/5.0e-06 torr	RF 402	MCRF/TI
107664/4	3/4/2004	TVS	125C/24 hrs/5.0e-06 torr	RF 275	MCRF/TI
107723/2	3/4/2004	7	120F/72 hrs/14.7 psia	LoTec Active Door Recharger	LoTeC/LADR
107736/1	3/4/2004	13B GOX	Gox/72F/10000 psia	PTFE Anti-Seize Tape	Valve Lab
107736/1	3/4/2004	13B LOX	Lox/72F/10000 psia	PTFE Anti-Seize Tape	Valve Lab
107640-ZJ/4	3/11/2004	Tox	120F/72 hrs/14.7 psia	Lexan™ FR 700-701	MCRF/TI
107713/4	3/11/2004	Tox	120F/72 hrs/14.7 psia	DM 421	MCRF/TI
107728/2	3/11/2004	13B GOX	Gox/72F/10000 psia	Novec™ HFE-72DE	Research
107738/1	3/11/2004	1	20.9% O2/14.7 psia	Minicel™ L170	ET
107739/2	3/11/2004	13A LOX	Lox/-297F/14.7 psia	Cycom™ 977-2	NGLT
107495-Q/4	3/18/2004	Tox	120F/72 hrs/14.7 psia	SS 4004P RTV Primer	MCRF/TI
107495-R/4	3/18/2004	Tox	120F/72 hrs/14.7 psia	SS 4004P RTV Primer	MCRF/TI
107665/4	3/18/2004	TVS	125C/24 hrs/5.0e-06	DE 422	MCRF/TI
107740/2	3/18/2004	Tox	120F/72 hrs/14.7 psia	Urine Processor Assembly	UPA/ISS
107741-2	3/18/2004	1	20.9% O2/14.7 psia	Ethofoam™ 221	SRB
107714/4	3/25/2004	Tox	120F/72 hrs/14.7 psia	TM 04695	MCRF/TI
107715/4	3/25/2004	Tox	120F/72 hrs/14.7 psia	DM 420	MCRF/TI
107716/4	3/25/2004	Tox	120F/72 hrs/14.7 psia	MO 07591	MCRF/TI

Final RFP NNM08125357R

107667/4	4/1/2004	TVS	125C/24hrs/5.0e-06 torr	DE 302	MCRF/TI
107674/4	4/1/2004	TVS	125C/24hrs/5.0e-06 torr	DE 344	MCRF/TI
107724/4	4/1/2004	Tox	120F/72hrs/14.7 psia	TM 05625	MCRF/TI
107726/4	4/1/2004	Tox	120F/72hrs/14.7 psia	DM 122	MCRF/TI
107749/2	4/1/2004	1	30%O2/10.2 psia	Dyflon* # 1014	WP/OGA
107725/4	4/8/2004	Tox	120F/72hrs/14.7 psia	DM 127	MCRF/TI
107745/2	4/8/2004	Tox	120F/72hrs/14.7 psia	PASC	PASC/ISS
107747/0	4/8/2004	13B LOX	Lox/-297F/10000 psia	Dubl-Chek™ HM-604	SSME
107747/0	4/8/2004	13B LOX	Lox/-297F/8000 psia	Dubl-Chek™ HM-604	SSME
107747/0	4/8/2004	13B LOX	Lox/-297F/6000 psia	Dubl-Chek™ HM-604	SSME
107750/0	4/8/2004	13A LOX	Lox/-297F/14.7psia	851-204/852-224	ET
107422-A/4	4/15/2004	17	Gox/75F/500 psia	SS 316 Rod Annealed	MCRF/TI
107422-B/4	4/15/2004	17	Gox/75F/650 psia	SS 316 Rod Annealed	MCRF/TI
107422-C/4	4/15/2004	17	Gox/75F/650 psia	SS 316 Rod Annealed	MCRF/TI
107666/4	4/15/2004	TVS	125C/24hrs/5.0e-06 torr	DE 282	MCRF/TI
107668/4	4/15/2004	TVS	125C/24hrs/5.0e-06 torr	DE 040	MCRF/TI
107748/2	4/15/2004	Flam	20.9% O2/14.7 psia	Durez™ 32633	RSRM
107749/2	4/15/2004	Tox	120F/24hrs/14.7 psia	Dyflon™ 1014	WP/OGA

**Final RFP NNM08125357R**

107751/0	4/15/2004	13A LOX	Lox/-297F/14.7 psia	VitroLube™ NPI 1220	ET
107751/0	4/15/2004	13B GOX	Gox/575F/600 psia	VitroLube™ NPI 1220	ET
107752/2	4/15/2004	Tox	120F/24hrs/14.7 psia	LoTec Active Door Recharger Assembly	LADR/ISS
107729/4	4/22/2004	Tox	120F/72hrs/14.7 psia	DM 118	MCRF/TI
107730/4	4/22/2004	Tox	120F/72hrs/14.7 psia	DM 115	MCRF/TI
107739/2	4/22/2004	13A LOX	Lox/-297F/14.7 psia	Cycom™ 977-2	NGLT
107739/2	4/22/2004	13A LOX	Lox/-297F/14.7 psia	Cycom™ 977-2	NGLT
107754/2	4/22/2004	1	30%O2/10.2 psia	NP 504	WP/OGA
107754/2	4/22/2004	1	40%O2/10.2 psia	NP 504	WP/OGA
107761/4	4/22/2004	TVS	125C/24 hrs/5.0e-06 torr	DE 360	MCRF/TI
107769/4	4/22/2004	TVS	125C/24 hrs/5.0e-06 torr		MCRF/TI
107639/4	4/29/2004	1	25% O2/5.0 psia	Nylon 6/6	MCRF/TI
107742/4	4/29/2004	4A	30% O2/10.0	ETFE 20 AWG Wire	MCRF/TI
107760/2	4/29/2004	13B Lox	Lox/-297F/10000 psia	Met-L-Chek™ FBP-913	SSME
107760/2	4/29/2004	13B Lox	Lox/-297F/10000 psia	Met-L-Chek™ FBP-913	SSME
107754/2	4/29/2004	TVS	125C/24 hrs/5.6e-06 torr	NP 504	WP/OGA
107731/4	4/29/2004	Tox	120F/72hrs/14.7 psia	DM 104	MCRF/TI
107754/2	4/29/2004	Tox	120F/72hrs/14.7 psia	NP 504	WP/OGA

Final RFP NNM08125357R

107419/4	5/6/2004	17	Gox/1000F/800 psia	SS 304L	MCRF/TI
107419/4	5/6/2004	17	Gox/1000F/500 psia	SS 304L	MCRF/TI
107419/4	5/6/2004	17	Gox/1000F/250 psia	SS 304L	MCRF/TI
107675/4	5/6/2004	TVS	125C/24 hrs/5.7e-06 torr	DE 041	MCRF/TI
107732/4	5/6/2004	Tox	120F/72hrs/14.7 psia	DM 102	MCRF/TI
107739/4	5/6/2004	13A	Lox/-297F/14.7 psia	Cycom™ 977-2	MCRF/TI
107762/2	5/6/2004	13A	Lox/-297F/14.7 psia	Virgin PTFE (Lot 3399087)	ET
107763/2	5/6/2004	13A	Lox/-297F/14.7 psia	Virgin PTFE (Lot 201-3125811)	ET
107733/4	5/13/2004	Tox	120F/72hrs/14.7 psia	DM 100	MCRF/TI
107734/4	5/13/2004	Tox	120F/72hrs/14.7 psia	MO 08281	MCRF/TI
107761/2	5/13/2004	Tox	120F/72hrs/14.7 psia	Leica DM RXA Microscope	LMM/ISS
107735/4	5/20/2004	Tox	120F/72hrs/14.7 psia	DM 117	MCRF/TI
107737/4	5/20/2004	Tox	120F/72hrs/14.7 psia	DM 116	MCRF/TI
107776/0	5/20/2004	13A	Lox/-297F/14.7psia	Leak-Tec™ OX-315 Type 3	ET
107756/4	5/27/2004	Tox	120F/72hrs/14.7 psia	DM 108	MCRF/TI
107764/2	5/27/2004	TVS	125C/24 hrs/5.3e-06 torr	Virgin PTFE Rod	ISS
107765/2	5/27/2004	TVS	125C/24 hrs/5.3e-06 torr	Silicone Rubber O-ring	ISS
107774/2	5/27/2004	13A	Lox/-297F/14.7 psia	851-204/851-255	ET

Final RFP NNM08125357R

107757/4	6/3/2004	Tox	120F/72hrs/14.7 psia	DM 152	MCRF/TI
107766/2	6/3/2004	TVS	125C/24 hrs/5.3e-06 torr	TW-175 Tubing	ISS
107775/2	6/3/2004	13B GOX	Gox/400F/600psia	851-204/851-255/856-204	ET
107779/2	6/3/2004	13B GOX	Gox/180F/10000psia	Krytox™ GPL 103	SSME
107779/2	6/3/2004	13B LOX	Lox/-297F/10000psia	Krytox™ GPL 103	SSME
107755/4	6/17/2004	7	120F/72hrs/14.7 psia	DM 101	MCRF/TI
107777/3	6/17/2004	AIT	100% O2/1500 psia	Silicone Rubber	Research
107780/2	6/17/2004	1	20.9% O2/14.7 psia	Two part Epoxy	Shuttle/Orbiter
107780/2	6/17/2004	TVS	125C/24 hrs/5.2e-06 torr	Two part Epoxy	Shuttle/Orbiter
107767/4	6/24/2004	Tox	120F/72 hrs/14.7 psia	DM 106	MCRF/TI
107768/4	6/24/2004	Tox	120F/72 hrs/14.7 psia	DM 142	MCRF/TI
107784/2	6/24/2004	13B Gox	Gox/120F/8500 psia	5415-D Dielectric Encapsulant	SSME
107785/2	6/24/2004	1	20.9% O2/14.7 psia	Polyurethane Foam	ET
107785/2	6/24/2004	1	100% N2/14.7 psia	Polyurethane Foam	ET
107788/0	6/24/2004	TVS	125C/24 hrs/5.5e-06 torr	Silicone Rubber	ISS
107789/0	6/24/2004	TVS	125C/24 hrs/5.5e-06 torr	Silicone Rubber	ISS
107790/0	6/24/2004	TVS	125C/24 hrs/5.5e-06 torr	Silicone Rubber	ISS
107421/4	7/1/2004	HPC	Gox/1000F/250 psia	SS 15-5PH Annealed	MCRF/TI

Final RFP NNM08125357R

107421/4	7/1/2004	HPC	Gox/1000F/200 psia	SS 15-5PH Annealed	MCRF/TI
107421/4	7/1/2004	HPC	Gox/1000F/150psia	SS 15-5PH Annealed	MCRF/TI
107743/4	7/1/2004	13A	Lox/-297F/14.7 psia	Cantesco™ 300 Reg. Temp. Type 1	MCRF/TI
107769/4	7/1/2004	Tox	120F/72 hrs/14.7 psia	DM 149	MCRF/TI
107784/2	7/1/2004	13B	Lox/-297F/8500 psia	5415D Dielectric Encapsulant	SSME
107791/0	7/1/2004	TVS	125C/24 hrs/5.5e-06 torr	Silicone Rubber	ISS
107792/0	7/1/2004	TVS	125C/24 hrs/5.5e-06 torr	Silicone Rubber	ISS
107783/3	7/15/2004	13A	Lox/-297F/14.7 psia	Cycom™ 977-2	Research
107783/3	7/15/2004	13A	Lox/-297F/14.7 psia	Cycom™ 977-2	Research
107783/3	7/15/2004	13A	Lox/-297F/14.7 psia	Cycom™ 977-2	Research
107783/3	7/15/2004	13A	Lox/-297F/14.7 psia	Cycom™ 977-2	Research
107783/3	7/15/2004	13A	Lox/-297F/14.7 psia	Cycom™ 977-2	Research
107783/3	7/15/2004	13A	Lox/-297F/14.7 psia	Cycom™ 977-2	Research
107783/3	7/15/2004	13A	Lox/-297F/14.7 psia	Cycom™ 977-2	Research
107786-A/3	7/15/2004	13A	Lox/-297F/14.7 psia	Cycom™ 977-2	Research
107786-B/3	7/15/2004	13B Gox	Gox/75F/100 psia	Cycom™ 977-2	Research
107799/0	7/15/2004	1	20.9 % O2/14.7 psia	RTV 511 DBT Curing Agent	SSME
107799/0	7/15/2004	1	20.9 % O2/14.7 psia	RTV 577 DBT Curing Agent/ Kevlar-Urethane Composite	SSME
107801	7/15/2004	AIT	Various	Chemlok 607	ECLSS/ISS

Final RFP NNM08125357R

107798/2	7/22/2004	7	120F/72 hrs/14.7 psia	Urine Processor Assembly	UPA/ISS
107802/2	7/22/2004	7	120F/72 hrs/14.7 psia	WPA Ion Exchange	ECLSS/ISS
107803/2	7/22/2004	7	120F/72 hrs/14.7 psia	WPA Particulate Filter	ECLSS/ISS
107804/0	7/22/2004	1	20.9%O2/14.7 psia	Stepanfoam™ BX-265	ET
107805/0	7/22/2004	1	20.9%O2/14.7 psia	Stepanfoam™ BX-265	ET
107806/2	7/22/2004	7	120F/72 hrs/14.7 psia	Cheesecloth	ECLSS/ISS
107816/0	7/29/2004	13A	Lox/-297F/14.7 psia	Leak-Tec™ OX-315 Type 3	ET
107817/0	7/29/2004	13A	Lox/-297F/14.7 psia	Leak-Tec™ OX-315 Type 3	ET
107818/0	7/29/2004	13A	Lox/-297F/14.7 psia	Leak-Tec™ OX-315 Type 3	ET
107819/1	7/29/2004	13A	Lox/-297F/14.7 psia	Leak-Tec™ OX-315 Type 3	ET
107820/1	7/29/2004	13A	Lox/-297F/14.7 psia	Leak-Tec™ OX-315 Type 3	ET
107807-A/2	8/5/2004	Tox	120F/72hrs/14.7 psia	GE MKM 2000	Shuttle/ROCR
107808-B/2	8/5/2004	Tox	120F/72hrs/14.7 psia	ATK/COIC Noax 3124	Shuttle/ROCR
107809-B/2	8/5/2004	Tox	120F/72hrs/14.7 psia	Boeing Starfire	Shuttle/ROCR
107810-A/2	8/5/2004	Tox	120F/72hrs/14.7 psia	Graber 5AX	Shuttle/ROCR
107811-A/2	8/5/2004	Tox	120F/72hrs/14.7 psia	Graber 5A	Shuttle/ROCR
107814/2	8/5/2004	Tox	120F/72hrs/14.7 psia	SPM 21-24-C	Commercial
107813-A/2	8/12/2004	AIT	100% O2/14.7 psia	PDL 1034	ET

Final RFP NNM08125357R

107813-B/2	8/12/2004	AIT	100% O2/14.7 psia	PDL 1034	ET
107815/2	8/12/2004	7	120F/72hrs/14.7 psia	SPM 10-24-6	Commercial
107821/2	8/12/2004	7	120F/72hrs/14.7 psia	WPA Wastewater ORU	ISS/ECLSS
107822/2	8/12/2004	7	120F/72hrs/14.7 psia	WPA Sensor ORU	ISS/ECLSS
107827-A/0	8/12/2004	1	24.1%O2/13.9 psia	Vinyl Jacketed Ethernet Cable	ISS/Express Racks
107827-B/0	8/12/2004	1	30%O2/10.2 psia	Vinyl Jacketed Ethernet Cable	ISS/Express Racks
107823/2	8/19/2004	7	120F/72hrs/14.7 psia	WPA Pump Separator/Filter ORU's	ISS/ECLSS-WPA
107827-C/2	8/19/2004	7	120F/72hrs/14.7 psia	Vinyl Jacketed Ethernet Cable	ISS/Express Racks
107829/3	8/19/2004	13B Gox	Gox/75F/100 psia	Cycom™ 977-2	Research
107829/3	8/19/2004	13B Lox	Lox/-297F/100 psia	Cycom™ 977-2	Research
107828/2	8/26/2004	7	120F/72hrs/14.7 psia	Temperature Sensor	ISS/ECLSS
107830/2	8/26/2004	7	120F/72hrs/14.7 psia	Portable Astroculture Chamber	ISS/PASC
107833/2	8/26/2004	7	120F/72hrs/14.7 psia	Start up Filter	ISS/ECLSS
107770/4	9/2/2004	7	120F/72 hrs./14.7 psia	Dunmore AM 25662	ICRC/Qualis TI
107796/4	9/2/2004	HPC	Gox/1500F/1000 psia	Monel™ 400	Research
107797/4	9/2/2004	HPC	Gox/ 80F-1754F/928 psia	Haynes™ 214	Research
107826/2	9/2/2004	7	120F/72 hrs./14.7 psia	CPCG-HM	ISS/CPCG
107835/2	9/2/2004	1	20.9 % O2/14.7 psia	RTV/Kevlar/Polyurethane Composite	SSME

**Final RFP NNM08125357R**

107771/4	9/30/2004	7	120F/72 hrs/14.7 psia	MO 09122	MCRF/TI
107841/1	9/30/2004	13A LOX	Lox/-297F/14.7 psia	Aclar™ 22A	ET
107787/3	10/7/2004	13A	Lox/-297F/14.7 psia	Cycom™ 977-2	Research
107787/3	10/7/2004	13A	Lox/-297F/14.7 psia	Cycom™ 977-2	Research
107839/2	10/7/2004	1	30% O2/10.2 psia	Blue Mountain Cotton Cloth	Round Robin
107846-0	10/7/2004	AIT	100% O2/14.7 psia	NCFI 24-124 Foam	ET/TRF
107847-0	10/7/2004	AIT	100% O2/14.7 psia	PDL 1034 Foam	ET/TRF
107836/2	10/14/2004	7	120F/72 hrs/14.7 psia	Urine Processor Assembly	UPA/ISS
107840-A/2	10/14/2004	1	25.9% O2/14.3 psia	Kydex™ 100	Round Robin
107840-B/2	10/14/2004	1	30.0% O2/10.2 psia	Kydex™ 100	Round Robin
107842/2	10/14/2004	4A	20.9% O2/14.7 psia	Raychem™ 44/0411	Round Robin
107845/2	10/14/2004	1	20.9% O2/14.7 psia	Silicone Rubber	Round Robin
107825-A/4	10/21/2004	4A	30%O2/10psia/257F	M16878/4-BGE-N	Research
107825-B/4	10/21/2004	4A	30%O2/10psia/392F	M16878/4-BGE-N	Research
107832-A/4	10/21/2004	4A	30%O2/10psia/257F	Mil-Dtl-81381B	Research
107832-B/4	10/21/2004	4A	30% O2/14.7 psia/302F	Mil-Dtl-81381B	Research
107832-C/4	10/21/2004	4A	30% O2/14.7 psia/392F	Mil-Dtl-81381B	Research
107843/2	10/21/2004	4A	30% O2/10.2 psia	M22759/32-20	Round Robin 2004

**Final RFP NNM08125357R**

107848/0	10/21/2004	AIT	100% O2/15 psia	Cycom™ 506	ET/RTF
107831/4	10/28/2004	HPC	Various	Stainless Steel 304L	Research
107849/2	10/28/2004	13A LOX	Lox/-297F/14.7 psia	PTFE Heat Shrink Insulation Sleeving	ET
107834/4	11/4/2004	17	Various	Inconel™ 718	Research
107851-A/4	11/11/2004	7	120F/72 hrs./14.7 psia	Windex Blue Original Formula	NASA-STD-6001 Research
107851-B/4	11/11/2004	7	120F/72 hrs./14.7 psia	Windex Blue Original Formula	NASA-STD-6001 Research
107851-C/4	11/11/2004	7	120F/72 hrs./14.7 psia	Windex Blue Original Formula	NASA-STD-6001 Research
107851-D/4	11/11/2004	7	120F/72 hrs./14.7 psia	Windex Blue Original Formula	NASA-STD-6001 Research
107851-E/4	11/11/2004	7	120F/72 hrs./14.7 psia	Windex Blue Original Formula	NASA-STD-6001 Research
107852-A/2	11/11/2004	7	120F/72 hrs./14.7 psia	ATK/COIC Noax 3124	ROCR/ISS
107852-B/2	11/11/2004	7	120F/72 hrs./14.7 psia	ATK/COIC Noax 3124	ROCR/ISS
107850-A/3	11/18/2004	TVS	125C/24 hrs/5.5e-06 torr.	Hysol™ 0515	SRB-Camera
107850-B/3	11/18/2004	1	20.9 % O2/14.7 psia	Hysol™ 0515	SRB-Camera
107851-F/4	11/18/2004	7	120F/72 hrs./14.7 psia	Windex Blue Original Formula	MCRF/TI
107852-C/2	11/18/2004	TVS	125C/24 hrs/5.5e-06 torr.	ATK/COIC Noax 3124	ROCR/ISS
107852-D/2	11/18/2004	TVS	125C/24 hrs/5.8e-06 torr.	ATK/COIC Noax 3124	ROCR/ISS
107853/0	11/18/2004	1	30.0/14.7 psia	ATK/COIC Noax 3124	ROCR/ISS
107844-A	11/26/2004	7	120F/72 hrs./14.7 psia	Kodak Gold Ultra 400	Round Robin 2004

**Final RFP NNM08125357R**

107844-B	11/26/2004	7	120F/72 hrs./14.7 psia	Kodak Gold Ultra 400	Round Robin 2004
107844-C	11/26/2004	7	120F/72 hrs./14.7 psia	Kodak Gold Ultra 400	Round Robin 2004
107844-D	11/26/2004	7	120F/72 hrs./14.7 psia	Kodak Gold Ultra 400	Round Robin 2004
107844-E	11/26/2004	7	120F/72 hrs./14.7 psia	Kodak Gold Ultra 400	Round Robin 2004
107852/2	11/26/2004	7	120F/72 hrs./14.7 psia	ATK/COIC Noax 3124	ROCR/ISS
107786/4	12/9/2004	13B Lox	Lox/75F/200 psia	Cycom™ 977-2	Research
107824-A/4	12/9/2004	1	100% O2/14.7 psia	NCFI 24-124 Foam	Research
107824-B/4	12/9/2004	1	100%O2/14.7 psia	NCFI 24-124 Foam	Research
107850-C/2	12/9/2004	1	30% O2/14.7 psia	Hysol™ 0151 Kit	Research
107850-D/2	12/9/2004	1	50% O2/14.7 psia	Hysol™ 0151 Kit	Research
107854/2	12/9/2004	7	40F/168 hrs/14.7 psia	Starfire™ SMP 10 (resin)	ROCR/ISS
107855/2	12/9/2004	7	40F/168 hrs/14.7 psia	Starfire™ SMP 10 (resin)	ROCR/ISS
107856/1	12/9/2004	1	20.9% O2/14.7 psia	Viton™ Coated Fabric	SRB
107858/2	12/9/2004	7	40F/168 hrs/14.7 psia	Starfire™ SMP 10 (resin)	ROCR/ISS
107857/2	12/16/2004	1	20.9 % O2/14.7 psia	Stepanfoam™ BX-265-R	ET/RTF
107861/2	12/23/2004	7	120F/72 hrs/14.7 psia	ATK/COIC Noax 3124-D	ROCR/ISS
107863-A/0	12/23/2004	1	30% O2/10.2 psia	Polyester/Neoprene with Flame Retardant	PERS
107863-C/0	12/23/2004	1	20% O2/10.s2psia	Polyester/Neoprene with Flame Retardant	PERS

**Final RFP NNM08125357R**

107863-D/0	12/23/2004	1	24% O2/10.2 psia	Polyester/Neoprene with Flame Retardant	PERS
107859/2	12/30/2004	7	120F/72 hrs/14.7 psia	OGA Power Supply Module	ECLSS/ISS
107862/2	12/30/2004	7	120F/72 hrs/14.7 psia	Coil/Vial Assy/Shipping Box	InSPACE/ISS
107863D-/0	12/30/2004	1	24.1% O2/13.9 psia	Polyester/Neoprene with Flame Retardant	PERS
107863-E/0	12/30/2004	1	20.9% O2/14.7 psia	Polyester/Neoprene with Flame Retardant	PERS
107864-A/0	12/30/2004	1	30.0 %O2/10.2 psia	Woven Cotton/Neoprene with Flame Retardant	PERS
107864-B/0	12/30/2004	1	24.1%O2/13.9 psia	Woven Cotton/Neoprene with Flame Retardant	PERS
107864-C/0	12/30/2004	1	20.9%O2/14.7 psia	Woven Cotton/Neoprene with Flame Retardant	PERS
107865-A/0	12/30/2004	1	30.0%O2/10.2 psia	Braided Cotton/Neoprene with Flame Retardant	PERS
107865-B/0	12/30/2004	1	24.1%O2/13.9 psia	Braided Cotton/Neoprene with Flame Retardant	PERS
107865-C/0	12/30/2004	1	20.9%O2/14.7 psia	Braided Cotton/Neoprene with Flame Retardant	PERS
107868/0	12/30/2004	13A LOX	Lox/-297F/14. psia	Leak-Tec™ OX-315 Type 3	ET
107866-A/4	1/13/2005	1	20.9% O2/14.7 psia	Pyrell™ Foam Uncoated	Research
107866-B/4	1/13/2005	1	23% O2/14.7 psia	Pyrell™ Foam Uncoated	Research
107866-C/4	1/13/2005	1	25% O2/14.7 psia	Pyrell™ Foam Uncoated	Research
107866-D/4	1/13/2005	1	26% O2/14.7 psia	Pyrell™ Foam Uncoated	Research
107867/3	1/13/2005	TVS	125C/24 hrs/5.4e-06 torr	Conoco HD Calcium 2	SRB

**Final RFP NNM08125357R**

107869/4	1/13/2005	13B Gox	Gox/75F/10000 psia	Leak-Tec™ OX-315 Type 3	ICRC/Qualis TI
107869/4	1/13/2005	13B Lox	Lox/-297F/10000 psia	Leak-Tec™ OX-315 Type 3	ICRC/Qualis TI
107870/4	1/20/2005	TOX	120F/72 hrs/14.7 psia	MO 10449	MCRF/TI
107873/2	1/20/2005	TOX	120F/72 hrs/14.7 psia	UPA Fluids Control & Pump Assembly	UPA/ECLSS/ISS
107878/4	2/3/2005	7	120F/72 hrs/14.7 psia	MO 09459	MCRF/TI
107898- A/3	2/3/2005	1	20.9 % O2/14.7 psia	PDL 1034	ET/RTF (Nose Cone)
107898- B/3	2/3/2005	1	25.0 % O2/14.7 psia	PDL 1034	ET/RTF (Nose Cone)
107898- C/3	2/3/2005	1	30.0 % O2/14.7 psia	PDL 1034	ET/RTF (Nose Cone)
107898- D/3	2/3/2005	1	40.0 % O2/14.7 psia	PDL 1034	ET/RTF (Nose Cone)
107898- E/3	2/3/2005	1	50.0 % O2/14.7 psia	PDL 1034	ET/RTF (Nose Cone)
107902/1	2/3/2005	13B Lox	Lox/-297F/10000 psia	Krytox™ GPL 103	SSME
107744/4	2/10/2005	13A	Lox/-297F/14.7psia	Cantesco™ 365	ICRC/Qualis TI
107881/4	2/10/2005	7	120F/72 hrs/14.7 psia	MO 11113	ICRC/Qualis TI
107897/2	2/10/2005	7	120F/72 hrs/14.7 psia	WONDER	Spacehab
107899- A/3	2/10/2005	1	20.9% O2/14.7 psia	Stepanfoam™ BX 265	ET/RTF (Nose Cone)
107899- B/3	2/10/2005	1	25.% O2/14.7 psia	Stepanfoam™ BX 265	ET/RTF (Nose Cone)
107899- C/3	2/10/2005	1	30.0 % O2/14.7 psia	Stepanfoam™ BX 265	ET/RTF (Nose Cone)
107899- D/3	2/10/2005	1	40.0 % O2/14.7 psia	Stepanfoam™ BX 265	ET/RTF (Nose Cone)

Final RFP NNM08125357R

107899-E/3	2/10/2005	1	50.0 % O2/14.7 psia	Stepanfoam™ BX 265	ET/RTF (Nose Cone)
107900/2	2/10/2005	1	20.9% O2/14.7 psia	Poron™ 4701 (Black)	SRB
107902/1	2/10/2005	13B Gox	Gox/180F/10000 psia	Krytox™ GPL-103 (Batch 16137)	SSME
107903/1	2/10/2005	13B Lox	Lox/-297F/10000 psia	Krytox™ GPL-103 (batch 16068)	SSME
107903/1	2/10/2005	13B Gox	Gox/180F/10000 psia	Krytox™ GPL-103 (batch 16068)	SSME
107879/4	2/17/2005	TOX	120F/72 hrs/14.7 psia	MO 08524	Research
107880/4	2/17/2005	TOX	120F/72 hrs/14.7 psia	MO 08523	Research
107882/4	2/17/2005	TOX	120F/72 hrs/14.7 psia	DE 502	Research
107886/4	2/17/2005	TOX	120F/72 hrs/14.7 psia	MO 09052	Research
107866-E/4	2/24/2005	1	24.0 % O2/14.7 psia	Pyrell™ Uncoated	Research
107866-F/4	2/24/2005	1	24.0% O2/9.0 psia	Pyrell™ Uncoated	Research
107866-G/4	2/24/2005	1	25.0%O2/14.7 psia	Pyrell™ Uncoated	Research
107866-H/4	2/24/2005	1	26.0% O2/14.7 psia	Pyrell™ Uncoated	Research
107883/4	2/24/2005	7	120F/72 hrs/14.7 psia	Dunmore DE 901	Research
107891/4	2/24/2005	7	120F/72 hrs/14.7 psia	Dunmore MO 09133	Research
107901/4	2/24/2005	13B Gox	Gox/75F/50 psia	Nylon 6/6	Research
107905/1	3/10/2005	1	30.0% O2/10.2 psia	ATK/COIC Noax-D	ROCR
107905/2	3/10/2005	7	120F/72 hrs/14.7 psia	ATK/COIC Noax-D	ROCR

**Final RFP NNM08125357R**

107906/2	3/10/2005	1	20.9% O2/14.7 psia	3M™ 1312	SRB
107907/2	3/10/2005	1	20.9% O2/14.7 psia	TESA™ 53317	SRB
107908/2	3/10/2005	1	20.9% O2/14.7 psia	Permacel™ P-170	SRB
107909/4	3/10/2005	13B Gox	Gox/-75/600 psia	Microcosm Composite	Commercial
107909/4	3/10/2005	13B Gox	Gox/-75F/600 psia	Microcosm Composite	Commercial
107909/4	3/10/2005	13B Lox	Lox/-297F/600 psia	Microcosm Composite	Commercial
107910/0	3/10/2005	1	50% O2/14.7 psia	Stepanfoam™ BX-265-R	MCRF TI
107911/2	3/10/2005	13A	Lox/-297F/14.7 psia	PTFE #7 2:1 Tubing	ET
107887/4	3/24/2005	TOX	120F/72 hrs/14.7 psia	Dunmore MO 09051	MCRF/TI
107909-A/4	3/24/2005	13B GOX	Gox/75F/600 psia	Microcosm Composite	Commercial
107909-B/4	3/24/2005	13B GOX	Gox/-297F/600 psia	Microcosm Composite	Commercial
107909-C/4	3/24/2005	13A LOX	Lox/-297F/14.7 psia	Microcosm Composite	Commercial
107912/2	3/24/2005	13A LOX	Lox/-297F/14.7 psia	PTFE #18 TW 2:1 Tubing	ET
107913/2	3/24/2005	13A LOX	Lox/-297F/14.7 psia	PTFE #22 TW 2:1 Tubing	ET
107914/2	3/24/2005	13A LOX	Lox/-297F/14.7 psia	PTFE #24 TW 2:1 Tubing	ET
107915/2	3/24/2005	13A LOX	Lox/-297F/14.7 psia	851-204/856-204/851-255	ET
107916/2	3/24/2005	13A LOX	Lox/-297F/14.7 psia	850-314/851-255	ET
107917-A/2	3/24/2005	13B LOX	Lox/-297F/10000 psia	Krytox™ GPL-103	ET

Final RFP NNM08125357R

107917-B/2	3/24/2005	13B GOX	Gox/180F/10000 psia	Krytox™ GPL-103	ET
107918-A/2	3/31/2005	13B GOX	Gox/180F/10000 psia	Krytox™ GPL-103 (Batch 16231)	ET
107918-B/2	3/31/2005	13B LOX	Lox/-297F/10000 psia	Krytox™ GPL-103 (Batch 16231)	ET
107919-A/2	3/31/2005	13B GOX	Gox/180F/10000 psia	Krytox™ GPL-103 (Batch 16162)	ET
107919-B/2	3/31/2005	13B LOX	Lox/-297F/10000 psia	Krytox™ GPL-103 (Batch 16162)	ET
107920/2	3/31/2005	13A LOX	Lox/-297F/14.7 psia	Leak-Tec™ OX-315 Type 3	ET
107884/4	4/7/2005	7	120F/72 hrs/14.7 psia	Dunmore MO 09184	Research
107905/2	4/7/2005	TVS	125C/24 hrs/6.9e-06 torr	Noax D	ROCR/RTF
107921/2	4/7/2005	Flam	20.9% O2/14.7 psia	Lexan™ 124	LOCAD/ISS
107420-L/4	4/21/2005	17	Gox/75F/500 psia	SS 321	MCRF/TI
107420-M/4	4/21/2005	17	Gox/1500F/150 psia	SS 321	MCRF/TI
107921/2	4/21/2005	1	20.9% O2/14.7 psia	Lexan™ 124	ISS/LOCAD
107921/2	4/21/2005	7	120F/72 hrs/14.7 psia	Lexan™ 124	ISS/LOCAD
107922/2	4/21/2005	13A LOX	Lox/72 ft. lbs/14.7 psia	PTFE #10 TW 2:1 Tubing	External Tank
107924/2	4/21/2005	Flam/Assembly	20.9% O2/14.7 psia	Sacrificial Retainer for Bellow	External Tank/RTF
107890/4	4/28/2005	7	120F/72hrs/14.7 psia	MO 10149	MCRF-TI
107892/4	4/28/2005	7	120F/72hrs/14.7 psia	MO 11611/135	MCRF-TI
107892/4	5/5/2005	7	120F/72 hrs/14.7 psi	Dunmore MO 11611/135	MCRF/TI

**Final RFP NNM08125357R**

107926/2	5/5/2005	7	120F/72 hrs/14.7 psi	MSRR-Video Box	Material Science Research Rack
107927/0	5/5/2005	13A LOX	Lox/72 ft lbs/14.7 psi	Aclar™ 22A (Lot 141018-1)	Shuttle Integration
107927/0	5/5/2005	13A LOX	Lox/55 ft lbs/14.7 psi	Aclar™ 22A (Lot 141018-1)	Shuttle Integration
107928/0	5/5/2005	13A LOX	Lox/72 ft lbs/14.7 psi	Aclar™ 22A ( Lot 3487-H-C-J)	Shuttle Integration
107929/0	5/5/2005	13A LOX	Lox/72 ft lbs/14.7 psi	Aclar™ 22A (Lot 42089)	Shuttle Integration
107885/4	5/12/2005	TOX	125F/72 hrs/14.7 psi	Dunmore MO 09447	MCRF/TI
107896/4	5/19/2005	TOX	120F/72 hrs/14.7 psia	Dunmore MO 11606	MCRF/TI
107930-A/1	5/19/2005	13B LOX	Lox/-297F/550 psia	Hysol™ 9361	Commercial
107930-A/1	5/19/2005	13B LOX	Lox/-297F/550 psia	Hysol™ 9361	Commercial
107930-B/1	5/19/2005	13B GOX	Gox/75F/550 psia	Hysol™ 9361	Commercial
107930-B/1	5/19/2005	13B GOX	Gox/75F/550 psia	Hysol™ 9361	Commercial
107930-B/1	5/19/2005	13B GOX	Gox/75F/550 psia	Hysol™ 9361	Commercial
107931-A/1	5/19/2005	13B LOX	Lox/-297F/550 psia	Microcosm #2	Commercial
107931-A/1	5/19/2005	13B LOX	Lox/-297F/550 psia	Microcosm #2	Commercial
107931-B/1	5/19/2005	13B LOX	Lox/-297F/550 psia	Microcosm #2	Commercial
107931-B/1	5/19/2005	13B LOX	Lox/-297F/550 psia	Microcosm #2	Commercial
107923/2	5/26/2005	Flam	20.9% O2/14.7 psia	NFX0292/Shrink Wrap	External Tank
107927/0	5/26/2005	13A LOX	Lox/-297F/14.7 psia	Aclar™ 22A (4x4 Bags)	Shuttle Integration

Final RFP NNM08125357R

107927/0	5/26/2005	13A LOX	Lox/-297F/14.7 psia	Aclar™ 22A (4x4 Bags)	Shuttle Integration
107927/0	5/26/2005	13A LOX	Lox/-297F/14.7 psia	Aclar™ 22A (4x4 Bags)	Shuttle Integration
107927/0	5/26/2005	13A LOX	Lox/-297F/14.7 psia	Aclar™ 22A (4x4 Bags)	Shuttle Integration
107933/2	5/26/2005	Flam	20.9% O2/14.7 psia	Poron™ 4701 w/ Acrylic Adhesive	Solid Rocket Booster
107935/0	6/2/2005	13A LOX	Lox/-297F/14.7 psi	Leak-Tec™OX 315 Type 3	External Tank
107936/2	6/16/2005	13A LOX	Lox/-297F/14.7psi	Unknown Plating/Replacement for Cad. Plating	External Tank Project Table 1, Test 1
107937/2	6/16/2005	13A LOX	Lox/-297F/14.7psi	Unknown Plating/Replacement for Cad. Plating	External Tank Project Table 1, Test 2
107938/2	6/16/2005	13A LOX	Lox/-297F/14.7psi	Unknown Plating/Replacement for Cad. Plating	External Tank Project
107939/2	6/16/2005	13A LOX	Lox/-297F/14.7psi	Unknown Plating/Replacement for Cad. Plating	External Tank Project
107940/2	6/16/2005	13A LOX	Lox/-297F/14.7psi	Unknown Plating/Replacement for Cad. Plating	External Tank Project
107941/2	6/16/2005	13A LOX	Lox/-297F/14.7psi	Unknown Plating/Replacement for Cad. Plating	External Tank Project
107942/2	6/16/2005	13A LOX	Lox/-297F/14.7psi	Unknown Plating/Replacement for Cad. Plating	External Tank Project
107943/3	6/16/2005	13A LOX	Lox/-297F/14.7psi	Unknown Plating/Replacement for Cad. Plating	External Tank Project
107944/3	6/16/2005	13A LOX	Lox/-297F/14.7psi	Unknown Plating/Replacement for Cad. Plating	External Tank Project

Final RFP NNM08125357R

107945/3	6/23/2005	13A LOX	Lox/-297F/14.7psi	Unknown Plating/Replacement for Cad. Plating	External Tank Project Table 3, Test 3
107946/3	6/23/2005	13A LOX	Lox/-297F/14.7psi	Unknown Plating/Replacement for Cad. Plating	External Tank Project Table 3, Test 4
107947/3	6/23/2005	13A LOX	Lox/-297F/14.7psi	Unknown Plating/Replacement for Cad. Plating	External Tank Project Table 3, Test 5
107948/3	7/7/2005	13A LOX	Lox/-297F/14.7psi	Aclar™ 22A	External Tank Project
107949/2	7/7/2005	FLAM	20.9% O2/14.7 psi	Rust™-Oleum 9300 Series/Zinc Sele™ 9334 Primer	Solid Rocket Booster Project
107950/2	7/7/2005	FLAM	20.9% O2/14.7 psi	Rust™-Oleum 9392 Series/Zinc Sele™ 9334 Primer	Solid Rocket Booster Project
107951/2	7/7/2005	13B GOX	Gox/75F/10000 psi	Avalon™ 01	MSFC-Valve Shop
107894/4	7/14/2005	7	120F/72 hrs/14.7 psi	Dunmore/MO 11612	MCRF/TI Project
107957/0	7/14/2005	13A LOX	Lox/-297F/14.7psi	Leak-Tec™ OX 315 Type 3	External Tank Project
107951- B/2	7/21/2005	13B LOX	Lox/-297F/10000 psi	Avalon™ 01	MSFC Valve Shop
107951- B/2	7/21/2005	13B LOX	Lox/-297F/9500 psi	Avalon™ 01	MSFC Valve Shop
107951- B/2	7/21/2005	13B LOX	Lox/-297F/9000 psi	Avalon™ 01	MSFC Valve Shop
107952/0	7/21/2005	TOX	120F/72 hrs/14.7 psi	Noax D	ROCR/STS (Return to Flight)
107958/3	7/21/2005	13B LOX	Lox/-297F/14.7 psi	850-314/851-255	External Tank
107959/3	7/21/2005	13B LOX	Lox/-297F/14.7 psi	850-204/851-255/856- 204	External Tank
107959/3	7/21/2005	13B LOX	Lox/-297F/14.7 psi	850-204/851-255/856- 204	External Tank

Final RFP NNM08125357R

106960/2	8/4/2005	7	120F/72 hrs/14.7 psia	LOCAD Portable Test System & Swabbing Unit	Lab-on-a-Chip Application Development
107962/2	8/4/2005	13B LOX	Lox/-297F/500 psia	Krytox™ XP1A7	SSME/Ground support
107962/2	8/4/2005	13B GOX	Gox/180F/500 psia	Krytox™ XP1A7	SSME/Ground support
107954-A/4	8/11/2005	13B GOX	Gox/75F/10000 psi	Clarus™ P2000HS	MCRF/TI
107961-B/0	8/11/2005	TVS	125F/24hrs/5.9x10-6 torr	Styropor™ BF 422	Commercial
107961-C/0	8/11/2005	TVS	125F/24hrs/5.9x10-6 torr	Styropor™ BF 422	Commercial
107961-D/1	8/11/2005	TVS	125F/24hrs/8.2e-8 torr	Styropor™ BF 422	Commercial
107963/2	8/11/2005	7	120F/72 hrs/14.7 psia	Oxygen Generation System	OGS/ISS
107964-A/3	8/25/2005	1	100% O2/176F/34.7 psia	Epo-Tek™ H77	WP/OGA
107964-B/3	8/25/2005	1	100% O2/266F/34.7 psia	Epo-Tek™ H77	WP/OGA
107964-B/3	8/25/2005	1	100% O2/347F/34.7 psia	Epo-Tek™ H77	WP/OGA
107966-A	8/25/2005	13B LOX	Lox/-297F/10000 psia	Castrol Braycote™ 640 AC	SSME
107967/3	9/1/2005	13B GOX	Gox/75F/680 psi	P5N Composite	SSME
107973-A/4	10/13/2005	7	120F/72 hrs/14.7 psi	Scotch-Weld™ DP-190 Translucent	Sample Replicate Study
107973-B/4	10/13/2005	7	120F/72 hrs/14.7 psi	Scotch-Weld™ DP-190 Translucent	Sample Replicate Study
107973-C/4	10/13/2005	7	120F/72 hrs/14.7 psi	Scotch-Weld™ DP-190 Translucent	Sample Replicate Study
107972-D/4	10/20/2005	Tox/Wire	120F/72 hrs/14.7 psi	Raychem™ 81044/12-20-9	Sample Replicate Study
107972-E/4	10/20/2005	Tox/Wire	120F/72 hrs/14.7 psi	Raychem™ 81044/12-20-9	Sample Replicate Study

**Final RFP NNM08125357R**

107972-F/4	10/20/2005	Tox/Wire	120F/72 hrs/14.7 psi	Raychem™ 81044/12-20-9	Sample Replicate Study
107985-A/0	10/20/2005	Impact/Adhesive	Gox/75F/800 psi	Ceramabond™ 511	CDDF
107980-A/2	10/27/2005	13B LOX	Lox/-297F/10000 psi	Avalon™ 01	MSFC Valve Shop
107980-A/2	10/27/2005	13B LOX	Lox/-297F/9000 psi	Avalon™ 01	MSFC Valve Shop
107980-A/2	10/27/2005	13B LOX	Lox/-297F/8500 psi	Avalon™ 01	MSFC Valve Shop
107980-C/2	10/27/2005	13B GOX	Gox/120F/10000 psi	Avalon™ 01	MSFC Valve Shop
107980-C/2	10/27/2005	13B GOX	Gox/120F/9500 psi	Avalon™ 01	MSFC Valve Shop
107980-C/2	10/27/2005	13B GOX	Gox/120F/9000 psi	Avalon™ 01	MSFC Valve Shop
107981-A/1	10/27/2005	17	Gox/74F/2305 psi	Inconel™ 600	Commercial Test/Tested at various pressures.Pressure equals longest burn.
107981-B/1	10/27/2005	17	Gox/74F/2101 psi	Inconel™ 600	Commercial Test/Tested at various pressures.Pressure equals longest burn.
107981-C/1	10/27/2005	17	Gox/74F/1952 psi	Inconel™ 600	Commercial Test/Tested at various pressures.Pressure equals longest burn.
107982-A/1	10/27/2005	17	Gox/74F/1004 psi	Carpenter™ 20 Cb-3	Commercial Test/Tested at various pressures.Pressure equals longest burn.

Final RFP NNM08125357R

107982-B/1	10/27/2005	17	Gox/74F/451 psi	Carpenter™ 20 Cb-3	Commercial Test/Tested at various pressures. Pressure equals longest burn.
107983-A/1	10/27/2005	17	Gox/74F/5000 psi	Yellow Brass	Commercial Test/Tested at various pressures. Pressure equals longest burn.
107984-1/2	10/27/2005	13B LOX	Lox/-297F/7515 psia	Fluoroloy™ 01	SSME
107986/2	10/27/2005	Tox/Flight Hardware	120F/72 hrs/14.7 psi	LOCAD/Swabbing Kit-Media Slides-Cartridge	LOCAD
107975/2	11/3/2005	7	120F/72 hrs/14.7 psi	FIR Flight Rack	Commercial/FIR/ISS
107987/2	11/3/2005	13A	Lox/-297F/14.7 psi	Teflon™ (Virgin PTFE)	External Tank
107989-A/0	11/3/2005	13B LOX	Lox/-297F/8700 psi	Scotch™ 425	SSME
107989-A/0	11/3/2005	13B LOX	Lox/-297F/8700 psi	Scotch™ 425	SSME
107989-B/0	11/3/2005	13B LOX	Lox/-297F/450 psi	Scotch™ 425	SSME
107989-B/0	11/3/2005	13B LOX	Lox/-297F/450 psi	Scotch™ 425	SSME
107989-B/0	11/3/2005	13B LOX	Lox/-297F/450 psi	Scotch™ 425	SSME
107993/0	11/3/2005	13A	Lox/-297F/14.7 psi	Leak-Tec OX 315 Type III	External Tank
107890/0	11/10/2005	13B LOX	Lox/-297F/8000 psi	Avalon™ 01	Valve Shop
107890/0	11/10/2005	13B LOX	Lox/-297F/7500 psi	Avalon™ 01	Valve Shop
107890/0	11/10/2005	13B LOX	Lox/-297F/7000 psi	Avalon™ 01	Valve Shop

Final RFP NNM08125357R

107890/0	11/10/2005	13B LOX	Lox/-297F/6500 psi	Avalon™ 01	Valve Shop
107890/0	11/10/2005	13B LOX	Lox/-297F/6000 psi	Avalon™ 01	Valve Shop
107971/2	11/10/2005	7	203F/72hrs/14.7 psi	Styropor™ BF 422	Commercial/Special conditions @ 93C
107971-A/2	11/17/2005	TVS	125C/24hrs/6.4e-06 torr	Styropor™	Commercial
107994/2	11/17/2005	7	120F/72 hrs/14.7psi	FIR Flight Rack	Commercial
107995/2	11/17/2005	7	120F/72 hrs/14.7psi	IOP/FIR	Commercial
107925/2	11/30/2005	7	120F/72 hrs/14.7 psi	MSRR Master Controller	MSRR/ISS
107968/4	11/30/2005	13B LOX	Lox/-297F/300 psi	FP 027.2	LVST-Langley Vehicle Structures Task
107969/4	11/30/2005	13B LOX	Lox/-297F/300 psi	FP 022.1	LVST-Langley Vehicle Structures Task
107970/4	11/30/2005	13B LOX	Lox/-297F/300 psi	FP 024.1	LVST-Langley Vehicle Structures Task
107976/2	11/30/2005	13B LOX	Lox/-297F/300 psi	FP 060	LVST-Langley Vehicle Structures Task
107977/2	11/30/2005	13B LOX	Lox/-297F/300 psi	FP 044	LVST-Langley Vehicle Structures Task
107979/2	11/30/2005	13B LOX	Lox/-297F/300 psi	FP 045	LVST-Langley Vehicle Structures Task
107988/2	11/30/2005	7	120F/72 hrs/14.7 psi	CIR Foam Sound Deadener	Commercial Test/FIR/ISS
107990/3	11/30/2005	13B LOX	Lox/-297F/300 psi	FP 53.1	LVST-Langley Vehicle Structures Task

Final RFP NNM08125357R

107994/2	11/30/2005	7	120F/72 hrs/14.7 psi	FIR Flight Rack	Commercial Test/FIR/ISS
108002/3	11/30/2005	13B LOX	Lox/-297F/300 psi	FP 059	LVST-Langley Vehicle Structures Task
108006/3	11/30/2005	13B LOX	Lox/-297F/300 psi	FP 066	LVST-Langley Vehicle Structures Task
108007/3	11/30/2005	13B LOX	Lox/-297F/300 psi	FP 062	LVST-Langley Vehicle Structures Task
107981-D/2	12/8/2005	17	Gox/74F/1900 psi	Inconel™ 600	Commercial
107981-E/2	12/8/2005	17	Gox/74F/1500 psi	Inconel™ 600	Commercial
107981-F/2	12/8/2005	17	Gox/74F/1300 psi	Inconel™ 600	Commercial
107983-B/2	12/8/2005	17	Gox/74F/10000 psi	Yellow Brass	Commercial
107983-C/2	12/8/2005	17	Gox/74F/10000 psi	Yellow Brass	Commercial
107983-D/2	12/8/2005	17	Gox/74F/10000 psi	Yellow Brass	Commercial
107990/3	12/8/2005	13B LOX	Lox/-297F/300 psi	FP 053	JPL Composite Structures Design Task
108001/3	12/8/2005	13B LOX	Lox/-297F/300 psi	FP 064	JPL Composite Structures Design Task
108003/3	12/8/2005	13B LOX	Lox/-297F/300 psi	FP 067	JPL Composite Structures Design Task
108004/3	12/8/2005	13B LOX	Lox/-297F/300 psi	FP065	JPL Composite Structures Design Task
108005/3	12/8/2005	13B LOX	Lox/-297F/300 psi	FP058	JPL Composite Structures Design

**Final RFP NNM08125357R**

					Task
108006/3	12/8/2005	13B LOX	Lox/-297F/300 psi	FP 066	JPL Composite Structures Design Task
108007/3	12/8/2005	13B LOX	Lox/-297F/300 psi	FP061	JPL Composite Structures Design Task
108010-A/0	12/15/2005	13B LOX	Lox/-297F/10000 psi	Krytox™GPL-103 (Lot 2735/16437)	SSME
108010-B/0	12/15/2005	13B GOX	Gox/180F/10000 psi	Krytox™GPL-103 (Lot 2735/16437)	SSME
108011-A/0	12/15/2005	13B LOX	Lox/-297F/10000 psi	Krytox™GPL-103 (Lot 2095/16374)	SSME
108011-B/0	12/15/2005	13B GOX	Gox/180F/10000 psi	Krytox™GPL-103 (Lot 2095/16374)	SSME
108009/2	12/22/2005	13B LOX	Lox/-297F/10000 psi	Braycote™ 640 ACMS	SSME
108013/4	12/22/2005	13B LOX	Lox/-297F/300 psi	3M™ 425	Research
108014-A/1	12/22/2005	13A LOX	Lox/-297F/14.7 psi	Vitro-Lube™ NPI 1220	External Tank
108014-B/1	12/22/2005	13B GOX	Gox/575F/600 psi	Vitro-Lube™ NPI 1220	External Tank
108015/1	12/22/2005	13A LOX	Lox/-297F/14.7 psi	851-204/851-255/ 856-204	External Tank
107999-B/4	1/6/2006	7	120F/72 hrs/14.7 psi	Moldite B	MCRF/TI
108012-B/4	1/6/2006	13B GOX	Gox/75F/600 psi	PMMA	LVST
108012-B/4	1/6/2006	13B GOX	Gox/75F/300 psi	PMMA	LVST
108012-B/4	1/6/2006	13B GOX	Gox/75F/300 psi	PMMA	LVST
108012-B/4	1/6/2006	13B GOX	Gox/75F/300 psi	PMMA	LVST

Final RFP NNM08125357R

108012-B/4	1/6/2006	13B GOX	Gox/75F/300 psi	PMMA	LVST
108012-B/4	1/6/2006	13B GOX	Gox/75F/200 psi	PMMA	LVST
108012-B/4	1/6/2006	13B GOX	Gox/75F/200 psi	PMMA	LVST
108012-B/4	1/6/2006	13B GOX	Gox/75F/100 psi	PMMA	LVST
108012-B/4	1/6/2006	13B GOX	Gox/75F/50 psi	PMMA	LVST
108012-D/4	1/6/2006	Oxygen Index	75F/14.7 psi	PMMA	LVST
108012-E/4	1/6/2006	Oxygen Index	150F/14.7 psi	PMMA	LVST
108013-A/4	1/6/2006	13B LOX	Lox/-297F/300 psi	3M™ 425	MCRF/TI
108013-A/4	1/6/2006	13B LOX	Lox/-297F/300 psi	3M™ 425	MCRF/TI
108013-A/4	1/6/2006	13B LOX	Lox/-297F/100 psi	3M™ 425	MCRF/TI
107999-A/4	1/12/2006	TOX	120F/72 hrs/14.7 psi	Moldite B	Research
108012-C/4	1/12/2006	AIT	100% O2/10 MPa	PMMA	MCRF/TI
108017/4	1/12/2006	13B LOX	Lox/-297F/300 psi	Epon™ 862/ Epikure™ W	LVST
108024-A/4	1/12/2006	AIT	100% O2/10 MPa	FP 058 (CTD422/T1000)	LVST
107999-C/4	1/19/2006	7	120F/72 hrs/14.7 psi	Moldite B	Research
108012-A/4	1/19/2006	13B LOX	Lox/-297F/600 psi	PMMA	MCRF/TI
108012-A/4	1/19/2006	13B LOX	Lox/-297F/300 psi	PMMA	MCRF/TI
108012-A/4	1/19/2006	13B LOX	Lox/-297F/300 psi	PMMA	MCRF/TI

**Final RFP NNM08125357R**

108012-A/4	1/19/2006	13B LOX	Lox/-297F/100 psi	PMMA	MCRF/TI
108012-A/4	1/19/2006	13B LOX	Lox/-297F/100 psi	PMMA	MCRF/TI
108012-A/4	1/19/2006	13B LOX	Lox/-297F/50 psi	PMMA	MCRF/TI
108027-A/2	1/19/2006	13B LOX	Lox/-297/515 psia	850-300/852-202	SSME
108028-A/2	1/19/2006	13B LOX	Lox/-297/450 psia	3M™ Scotch™ 425	SSME
108008/2	1/26/2006	13B LOX	Lox/-297F/450 psi	Titanium Sheet	SSME
108018/4	1/26/2006	13B LOX	Lox/-297F/300 psi	CTD 422 (Resin)	LVST
108024/4	1/26/2006	Oxygen Index/Laminate-Composite	21%/25%/30%/31%/35%/50%/60% Oxy	CTD 422/T1000 Composite	LVST
108029-A/2	1/26/2006	13A LOX	Lox/-297F/14.7 psia	Polytetrafluoro-ethylene	External Tank
108030-A/2	1/26/2006	13B LOX	Lox/-297F/7515 psia	Titanium Sheet	SSME
107974-B/4	2/2/2006	TOX	120F/72 hrs/14.7 psia	RTV 627	Research
108031/2	2/2/2006	13B LOX	Lox/-297F/7515 psia	Fluoroloy™ 01	SSME
108033-A/2	2/9/2006	13A LOX	Lox/-297F/14.7 psia	FEP Insulated Wire	External Tank
107895-A/4	2/16/2006	7	120F/72 hrs/14.7 psia	Dunmore MO 13581	Research
107992-A/4	2/16/2006	7	120F/72 hrs/14.7 psia	Super Seal Foam	Research
107992-B/4	2/16/2006	7	120F/72 hrs/14.7 psia	Super Seal Foam	Research
107992-C/4	2/16/2006	7	120F/72 hrs/14.7 psia	Super Seal Foam	Research
108035-A/2	2/16/2006	13B GOX	Gox/75F/10000 psig	Christo-Lube™ MCG-111	MSFC Valve Shop

Final RFP NNM08125357R

108036-A/0	2/16/2006	13A LOX	Lox/-297F/14.7 psia	Leak-Tec™ OX-315 Type 3	External Tank
108039-A/0	2/16/2006	13B LOX	Lox/-297F/7515 psia	Titanium Sheet	Shuttle Integration
1080372	2/23/2006	13A LOX	Lox/-297F/14.7 psia	PTFE Heat Shrink Tubing (Batch#0378086-1)	External Tank
107974-A/4	2/23/2006	7	120F/72 hrs/14.7 psia	RTV 627	Research
107974-C/4	2/23/2006	7	120F/72 hrs/14.7 psia	RTV 627	Research
108034/4	2/23/2006	13B LOX	Lox/-297F/300 psia	AL 2195	JPL Task
108038/2	2/23/2006	13A LOX	Lox/-297F/14.7 psia	PTFE Heat Shrink Tubing (Batch#0378082-1)	External Tank
108040/1	2/23/2006	13B LOX	Lox/-297F/1010 psia	VespeI™ SP-211	Commercial (Liquid Rocket Ground Test/CECE)
107991-A/4	3/2/2006	7	120F/72 hrs/14.7 psia	AIRC 1025	Research
107991-B/4	3/2/2006	7	120F/72 hrs/14.7 psia	AIRC 1025	Research
107991-C4	3/2/2006	7	120F/72 hrs/14.7 psia	AIRC 1025	Research
108041/1	3/2/2006	13B LOX	Lox/-297F/1010 psia	PTFE Disks	Commercial (Liquid Rocket Ground Test/CECE)
108042/1	3/2/2006	1	20.9 % O2/14.7 psia	Kalrez™ 1050LF	SRB TVC System
108043/2	3/2/2006	13A LOX	Lox/-297F/14.7 psia	851-204/851-224 Teflon Primer/Topcoat	External Tank
108025/4	3/9/2006	AIT	100% O2 /10.3MPa	EX-1522/T1000	LaRC Task
108044/0	3/9/2006	13B LOX	Lox/-297F/325 psia	Titanium Sheet/with anodized Al anvil	SSME

Final RFP NNM08125357R

108044/0	3/9/2006	13B LOX	Lox/-297F/325 psia	Titanium Sheet/with anodized Al anvil	SSME
108048/0	3/9/2006	13A LOX	Lox/-297F/14.7 psia	Leak-Tec™ OX 315 Type 3	External Tank
108016-B/4	3/16/2006	13A LOX	Lox/-297F/14.7 psia	CTD 7.1	LaRC Task
108035-B/1	3/16/2006	13B LOX	Lox/-297F/10000 psia	Christo-Lube™ MCG-111	Valve Shop
108045-A/0	3/16/2006	13B LOX	Lox/-297F/325 psia	Titanium Sheet Annealed	SSME/ Tested with SS 304L anvil
108049-A/4	3/16/2006	13A LOX	Lox/-297F/14.7 psia	CTD 7.1+VGCF	LaRC Task
109019-A/4	3/16/2006	13A LOX	Lox/-297F/14.7 psia	CTD 422	LaRC Task/Reopening for further testing with catcher
108022-A/4	3/23/2006	AIT	100% O2/10.3MPa	CTD DX7/T1000	LaRC Task
108026-A/4	3/23/2006	AIT	100% O2/10.3MPa	CTD 5.1/T1000	LaRC Task
108046-A/0	3/23/2006	13B LOX	Lox/-297F/325 psia	Titanium Sheet Annealed	SSME/ Tested with Kel-F 81 Anvil
108046-A/0	3/23/2006	13B LOX	Lox/-297F/325 psia	Titanium Sheet Annealed	SSME/ Tested with Kel-F 81 Anvil
108046-A/0	3/23/2006	13B LOX	Lox/-297F/325 psia	Titanium Sheet Annealed	SSME/ Tested with Kel-F 81 Anvil
108046-B/0	3/23/2006	13B LOX	Lox/-297F/325 psia	Titanium Sheet Annealed	SSME/ 10.063 lb plummet used on this test. Used Kel-F 81 Anvil
108046-B/0	3/23/2006	13B LOX	Lox/-297F/325 psia	Titanium Sheet Annealed	SSME/ 10.063 lb plummet used on this test. Used Kel-F 81 Anvil
108046-B/0	3/23/2006	13B LOX	Lox/-297F/325 psia	Titanium Sheet Annealed	SSME/ 10.063 lb plummet used on this test.

Final RFP NNM08125357R

					Used Kel-F 81 Anvil
108046-B/0	3/23/2006	13B LOX	Lox/-297F/325 psia	Titanium Sheet Annealed	SSME/ 10.063 lb plummet used on this test. Used Kel-F 81 Anvil
108046-B/0	3/23/2006	13B LOX	Lox/-297F/325 psia	Titanium Sheet Annealed	SSME/ 10.063 lb plummet used on this test. Used Kel-F 81 Anvil
108047-A/2	3/23/2006	TVS	125C/24 hrs/6.8E-06	BN Loaded Siloxane	Commercial
108051-B/2	3/23/2006	13B GOX	Gox/75F/10000 psia	Avalon™ 01	GSE/MSFC Valve Shop
108052-A/4	3/23/2006	13B LOX	Lox/-297F/300 psia	Hexcel™ 977-6/IM9	LaRC Task/ Bruceton Method Test
108054-A/4	3/23/2006	13A LOX	Lox/-297F/14.7 psia	CTD DP 5.1	LaRC Task/ Bruceton Method Test
108051-A/2	3/30/2006	13B LOX	Lox/-297F/10000 psia	Avalon™ 01	MSFC Valve Shop
108051-A/2	3/30/2006	13B LOX	Lox/-297F/8000 psia	Avalon™ 01	MSFC Valve Shop
108051-A/2	3/30/2006	13B LOX	Lox/-297F/7000 psia	Avalon™ 01	MSFC Valve Shop
108053-A/4	3/30/2006	13B LOX	Lox/-297F/300 psia	8552/IM7 Composite	Research
108055-A/4	3/30/2006	13A	Lox/-297F/14.7 psia	CTD 7.1 GRC 2.5% Neat Resin	Research
108059-A/3	3/30/2006	13A	Lox/-297F/14.7 psia	Castrol Braycote™ 600 EF (Developmental)	Commercial
108059-B/3	3/30/2006	13B LOX	Lox/-297F/10000 psia	Castrol Braycote™ 600 EF (Developmental)	Commercial
108060-A/2	3/30/2006	1	20.9% O2/14.7 psia Cure # 1 @ 168 hrs/Amb Temp.	3M™ 2216 Gray	SRB

Final RFP NNM08125357R

108060-B/2	3/30/2006	1	20.9% O2/14.7 psia Cure # 2 @ 2 hrs/150F Temp.	3M™ 2216 Gray	SRB
108019-C/4	4/6/2006	13A LOX	Lox/-297F/14.7 psia	CTD-422	LVST 50% energy level=64.4 ft lb.
108060-C/2	4/6/2006	TVS	125C/24 hrs/ 1.0E-06 torr	3M™ 2216 Gray	Solid Rocket Booster
108060-D/2	4/6/2006	TVS	125C/24 hrs/ 1.0E-06 torr	3M™ 2216 Gray	Solid Rocket Booster
108062-A/0	4/6/2006	13A LOX	Lox/-297F/14.7 psia	Leak-Tec™ OX 315 Type III	External Tank
107997-A/4	4/20/2006	7	120F/72hrs/14.7 psia	Offray™ # 70-6465	Research
107997-B/4	4/20/2006	7	120F/72hrs/14.7 psia	Offray™ # 70-6465	Research
107997-C/4	4/20/2006	7	120F/72hrs/14.7 psia	Offray™ # 70-6465	Research
108016-C/4	4/20/2006	AIT	100% O2/1500 psia	CTD 7.1 v4 Neat Resin	LVST
108049-B/3	4/20/2006	AIT	100% O2/1500 psia	CTD 7.1+VGCF Neat Resin	LVST
108054-B/4	4/20/2006	AIT	100% O2/1500 psia	CTD DP 5.1 Neat Resin	LVST
108057-A/4	4/20/2006	13A LOX	Lox/-297F/14.7 psia	CTD FRLX Neat Resin	LVST
108058-B/4	4/20/2006	13B LOX	Lox/-297F/300 psia	Poly DCPD	Research
108063-A/4	4/20/2006	13A LOX	Lox/-297F/14.7 psia	CTD BG 1.3	LVST
108064-A/2	4/20/2006	1	20.9% O2/14.7 psia	TIGA 3216 (Ambient Cure)	Solid Rocket Booster
108064-B/2	4/20/2006	1	20.9% O2/14.7 psia	TIGA™ 3216 (High Temp. Cure)	Solid Rocket Booster
108065-A/4	4/20/2006	13B LOX	Lox/-297F/300 psia	Epon™ 862/IM7	Research
108067-A/4	4/20/2006	13B LOX	Lox/-297F/300 psia	Epon™ 862/HR40	Research

Final RFP NNM08125357R

108068-A/4	4/20/2006	13B LOX	Lox/-297F/300 psia	Epon™ 862/T1000	Research
108056-/4	5/4/2006	AIT	100% O2/1500 psia	CTD FRLX Neat Resin	LVST
108056-B/4	5/4/2006	AIT	100% O2/1500 psia	Epon™ 862 /Epikure™ W	LVST
108061-A/2	5/4/2006	1	20.9% O2/14.7 psia	3M™ 2216 Translucent	Solid Rocket Booster
108061-B/2	5/4/2006	1	20.9% O2/14.7 psia	3M™ 2216 Translucent	Solid Rocket Booster
108061-C/2	5/4/2006	TVS	125C/24 Hr./7.0e-06 torr	3M™ 2216 Translucent	Solid Rocket Booster
108061-D/2	5/4/2006	TVS	125C/24 Hr./6.0e-06 torr	3M™ 2216 Translucent	Solid Rocket Booster
108069-A/2	5/4/2006	13B GOX	Gox/75F/680 psia	P5N Graphite	Solid Rocket Booster
108070-A/4	5/4/2006	7	125F/72hrs/14.7psia	977-2/T1000	Research
108071-A/4	5/4/2006	7	125F/72hrs/14.7psia	CTD 7.1 VGCF/T1000	Research
108056	5/11/2006	Impact/Resin	Lox/-297F/14.7 psia	Epon™ 862 /Epikure™ W	Research
107968-B/3	5/18/2006	AIT	100% O2/1500 psig	CTD 7.1/T1000	LVST
107990-B/3	5/18/2006	AIT	100% O2/1500 psig	CTD 7.1+VGCF/T1000	LVST
107998-A/4	5/18/2006	7	120F/72 hrs/14.7 psia	SK Foam	Research
107998-B/4	5/18/2006	7	120F/72 hrs/14.7 psia	SK Foam	Research
107998-C/4	5/18/2006	7	120F/72 hrs/14.7 psia	SK Foam	Research
108055-B/3	5/18/2006	AIT	100% O2/1500 psig	CTD 7.1 GRC 2.5% (Neat Resin)	LVST
108072-A/4	5/18/2006	13B LOX	Lox/-297F/300 psia	Epon™ 862 Epikure™W/M55J	Research

Final RFP NNM08125357R

107800-A/4	5/25/2006	7	120F/72 hrs/14.7 psia	RTV 577/Kevlar/RR-1578/Microspheres	Research
107800-B/4	5/25/2006	7	120F/72 hrs/14.7 psia	RTV 577/Kevlar/RR-1578/Microspheres	Research
107800-C/4	5/25/2006	7	120F/72 hrs/14.7 psia	RTV 577/Kevlar/RR-1578/Microspheres	Research
108063-B/3	5/25/2006	AIT	100% O2/1500 psig	CTD BG 1.3	LVST Valid for Research only due to Pressure Leak
107979-B/3	6/1/2006	AIT	100% O2/1500 psig	CTD 7.1,2.5%,30B/T1000	LVST
108002-B/3	6/1/2006	AIT	100% O2/1500 psig	CTD BG 1.3/T1000	LVST
108018-B/3	6/1/2006	AIT	100% O2/1500 psig	CTD 422	LVST
108050-C/4	6/1/2006	7	120F/72 hrs/14.7 psia	EX-1522/IM7	Research
108050-D/4	6/1/2006	7	120F/72 hrs/14.7 psia	EX-1522/IM7	Research
108050-E/4	6/1/2006	7	120F/72 hrs/14.7 psia	EX-1522/IM7	Research
108074-A/2	6/1/2006	1	30% O2/10.2 psia	Tecamax™ SRP	Research
108075-A/2	6/1/2006	13B LOX	Lox/-297F/325 psia	Titanium/AL 6061-T651 anvil	SSME
108020-B/4	6/15/2006	AIT	100% O2/ 1485.3 psig	CTD DX7	LVST
108050-B/3	6/15/2006	AIT	100% O2/ 1485.3 psig	EX-1522/IM7	LVST
108053-B/3	6/15/2006	AIT	100% O2/ 1485.3 psig	8552/IM7	LVST
108053-C/4	6/15/2006	7	120F/72 hrs/14.7 psia	8552/IM7	Research
108053-D/4	6/15/2006	7	120F/72 hrs/14.7 psia	8552/IM7	Research

Final RFP NNM08125357R

108053-E/4	6/15/2006	7	120F/72 hrs/14.7 psia	8552/IM7	Research
108068-C/4	6/15/2006	AIT	100% O2/ 1485.3 psig	Epon 862/Epikure W/T1000	LVST
108074-B/2	6/15/2006	7	120F/72 hrs/14.7 psia	Tecamax SRP	ISS
108077-A/3	6/15/2006	TVS	125C/24 hrs/7.0e-06 torr	Ablebond 7950	Commercial
108078-A/3	6/15/2006	TVS	125C/24 hrs/7.0e-06 torr	Mereco 4583/Hardener#18	Commercial
108074-C/2	6/22/2006	Oxygen Index	75F/14.7 psia	Tecamax SRP	Research
108079-A/2	6/22/2006	13A LOX	Lox/72 ft-lbs/14.7 psia	PTFE Heat Shrink Tubing	External Tank
108093-A/0	6/22/2006	13B GOX	Gox/72 ft-lbs/680 psig	P5N Graphite	SSME
108075-A/ 1	7/6/2006	13B LOX	Lox/25 ft-lbs/ 325psia	Titanium with AL 6061-T651 anvil	SSME
108075-B/ 1	7/6/2006	13 B LOX	Lox/72 ft-lbs/ 450psia	Titanium with AL 6061-T651 anvil	SSME
108076-A/ 1	7/6/2006	13B LOX	Lox/25 ft-lbs/ 7515psia	Titanium with Inconel* 718 anvil	SSME
108080-A/ 2	7/6/2006	13B LOX	Lox /72 ft-lbs/7515 psia	Fluoroloy - 01	SSME
108081-A/ 3	7/6/2006	13B LOX	Lox /72 ft-lbs/7515 psia	Fluoroloy - 01	SSME
108082-A/1	7/6/2006	1	20.9% Oxygen/14.7 psia	Foam /NCFI 24-124/ Conoco HD2 Calcium Grease	ET
108083-A/1	7/6/2006	1	20.9% Oxygen/14.7 psia	Foam /NCFI 24-124	ET
108084-A/1	7/6/2006	1	20.9% Oxygen/14.7 psia	Foam/PDL-1034/ Conoco HD2 Calcium Grease	ET
108085-A/1	7/6/2006	1	20.9% Oxygen/14.7 psia	Foam/PDL-1034	ET

Final RFP NNM08125357R

108086-A/1	7/6/2006	1	20.9% Oxygen/14.7 psia	Foam/SLA1509/Conoco HD2 Calcium Grease	ET
108087-A/1	7/6/2006	1	20.9% Oxygen/14.7 psia	Foam/ SLA 1509	ET
108088-A/1	7/6/2006	1	20.9% Oxygen/14.7 psia	Foam / BX-265 / Conoco HD2 Calcium Grease	ET
108089-A/1	7/6/2006	1	20.9% Oxygen/14.7 psia	Foam / BX-265	ET
108090-A/2	7/6/2006	13A LOX	Lox./ 14.7 psia/ 72 ft-lbs	PTFE Disks	ET
108091-A	7/6/2006	7	120F/72hrs/14.7 psia	CTD14 HX	MCRF/ TI
108093-B/0	7/6/2006	13B GOX	Gox/ 680 psia / 65 ft- lbs	P5N Graphite	SSME
108097-A/ 0	7/6/2006	13B LOX	Lox./ 3500 psia/ 72 ft-lbs	Silicon Nitrate Ball Bearings	SSME
108091-B	7/13/2006	7	120F/ 72hrs/ 14.7 psi	Epoxy Resin Laminate	MCRF/TI
108091-C	7/13/2006	7	120F/ 72hrs/ 14.7 psi	Epoxy Resin Laminate	MCRF/TI
108094-A/2	7/13/2006	13B LOX	Lox/ 5015 psia/ 72ft-lbs	Dry Film Lubricant	SSME
108073-A/2	7/20/2006	13B LOX	Lox/ 400 psia/25 ft-lbs thresholding up to get Ti Ignition	Titanium	SSME
108091-D/4	7/20/2006	7	120F/72hrs/14.7 psia	CTD 15HX	MCRF/TI
108091-F/4	7/20/2006	7	120F/72hrs/14.7 psia	CTD 15HX	MCRF/TI
108101-A/0	7/20/2006	13A LOX	Lox /14.7 psia/ 72 ft-lbs	Leak Tec* OX315 Type III N727E	ET
108105-A/0	7/20/2006	13A LOX	Lox /14.5 psia/ Bruceton	M65 Neat Resin	LVST
108091-E/4	7/27/2006	Tox		CTD-15HX / Epoxy Resin Laminate	Research
108091-G/4	7/27/2006	Tox		CTD-15HX / Epoxy Resin Laminate	Research

Final RFP NNM08125357R

108098-A/	7/27/2006	13B Lox	Lox / 10000 pisa / 72ft-lbs	Marco S-1141 Black Ink	SSME
108099-A/	7/27/2006	13B Gox	Gox / 7000psia / 72ft-lbs	PTFE	Other
108099-B/	7/27/2006	13B Lox	Lox / 10000 pisa / 72ft-lbs	PTFE	Other
108102-A/	7/27/2006	TVS	TVS / 125F / 24hr	Nanoadh-BN-1	Commercial
108104-A/	7/27/2006	13A	Lox / 14.7 psia / Bruceton	8552 Neat Resin	LVST
108108-A/	7/27/2006	13A	Lox / 14.7 psia / Bruceton	5250-4 BMI Neat Resin	LVST
108091-H/4	8/3/2006	7		CTD-15HX / Epoxy Resin Laminate	Research
108091-I/4	8/3/2006	7		CTD-15HX / Epoxy Resin Laminate	Research
108100-A/2	8/3/2006	1	20.9% Oxygen/14.7 psia	NCFI Foam 26-007 (akaPDL-1034)	ET
108103-A/2	8/3/2006	13A LOX	Lox /72 ft-lbs/14.7 psia	Teflon 45L1-3C	ET
108104-B/4	8/10/2006	AIT	100% O2/ 1500 psig	8552 Neat Resin	LVST
108105-B/4	8/10/2006	AIT	100% O2/ 1500 psig	M65 Neat Resin	LVST
108106-A/2	8/10/2006	13A	Lox /14.7 psia/ 72 ft-lbs	Teflon	ET
108107-A/4	8/10/2006	7		CTD 9HX/T1000	MCRF/TI
108107-B/4	8/10/2006	7		CTD 9HX/T1000	MCRF/TI
108108-B/4	8/10/2006	AIT	100% O2/ 1500 psig	5250-4 Neat Resin	LVST
108058 / 4	8/17/2006	AIT	100% O2/ (See Results Below)	Poly-DCPD Resin	LVST
108100 / 2	8/17/2006	TVS		NCFI 26-007 (aka PDL-1034)	ET

**Final RFP NNM08125357R**

108112 / 0	8/17/2006	13A	Lox/ 72 ft-lbs/14.7 psia	Test disks	ET
108112 / 0	8/31/2006	13 A	Lox/ 72 ft-lbs/14.7 psia	Test Disks	ET
108114 / 2	8/31/2006	Flam	20.9% Oxygen/14.7 psia	Hypalon H2100 Coating	SRB
108115 / 2	8/31/2006	Tox		CIR* Diagnostic Test Flight Hardware	CIR*/ISS
108111 / 4	9/7/2006	Tox		PDCPD/T300	MCRF / TI
108113 / 3	9/7/2006	Flam	20.9% Oxygen/14.7 psia	Hypalon H2700 Coating	SRB
108111-D / 4	9/14/2006	Tox		PDCPD/T300	MCRF / TI
108121-A/ 4	9/14/2006	Flam	20.9 % O2/ 14.7psia	Blended Demron Radiation Sheilding	MISSE-6
108118 / 2	9/21/2006	AIT	100% O2 / 1500 psia	Braycote 640 ACMS	SSME
108065-B/4	9/28/2006	AIT	100% O2/ 1500 psig	Epon* 862 / Epikure W/IM7	Research
108109-A/3	9/28/2006	17	100% O2 / Variable Pressure / Test Temp Ambient	Titanium 6242 Rods	Commercial
108110 - A/3	9/28/2006	17	100% O2 / Variable Pressure / Test Temp Ambient	Stainless Steel M152 Rods	Commercial
108111-C/2	9/28/2006	13A	100% O2 / -297F / 72ft.lbs.	PDCPD/T300	Research
108116 - A/4	9/28/2006	13B Bruceton	100%O2 / -297F / 100 psia	M55J- AR250-215/32	JPL Task
108119-A/4	9/28/2006	TVS		MLS-85-SB-C organic electically conductive flat black spacecraft coating	MISSE*/ ISS
108120-A/4	9/28/2006	TVS		MLS-85-SB organic flat black spacecraft coating	MISSE*/ ISS
108121-C/4	9/28/2006	TVS		Blended Demron	MISSE*/ ISS
108122-A/4	9/28/2006	Flam	20.9% O2 / 14.7 psia	Tactical Demron	MISSE*/ ISS

Final RFP NNM08125357R

108122-C/4	9/28/2006	TVS		Tactical Demron	MISSE*/ ISS
108123-A/4	9/28/2006	Flam	20.9% O2 / 14.7 psia	Medical Grade Demron	MISSE*/ ISS
108123-C/4	9/28/2006	TVS		Medical Grade Demron	MISSE*/ ISS
108124-A/2	9/28/2006	TOX		Flight Hardware	CIR / ISS
108125-A/2	9/28/2006	13B Lox	100% O2 / -297F / 5000 psia	Moly Z Powder	SSME
108126-A/2	9/28/2006	13B Lox	100% O2 / -297F / 10000 psia / Cure # 1 @ 15 min / Amb Temp.	Marco S1141 Black Ink	SSME
108111-E/2	10/5/2006	Tox		PDCPD/T300	Other
108121-B/4	10/5/2006	Tox		Blended Demron	MISSE*/ ISS
108122-B/4	10/5/2006	Tox		Tactical Demron	MISSE*/ ISS
108123-B/4	10/5/2006	Tox		Medical Grade Demron	MISSE*/ ISS
108127-A/3	10/12/2006	17	100% O2 / Variable Pressure / Test Temp Ambient	TiAl Alloy	Commercial
108130-A/2	10/12/2006	7		Light Microscope Module	LMM/ISS
108136-A/0	10/12/2006	7		Water Delivery Controller	WDC/ISS
108137-A/0	10/12/2006	13A	100% O2 / -297F / 72ft.lbs.	Leak Test Compound	ET
108128-A / 2	10/19/2006	7		CVB Module (dry cell), ETM and Clean-up ETM	LMM/ISS
108129-A / 2	10/19/2006	7		AFC, Cables and Hoses	LMM/ISS
108131-A / 2	10/19/2006	7		LMM Control Boxes	LMM/ISS
108132 / 3	10/26/2006	Flam	20.9% Oxygen/14.7 psia	NCFI 24-124	ET

Final RFP NNM08125357R

108133 / 3	10/26/2006	Flam	20.9% Oxygen/14.7 psia	PDL-1034	ET
108134 / 3	10/26/2006	Flam	20.9% Oxygen/14.7 psia	SLA Type 1	ET
108135 / 3	10/26/2006	Flam	20.9% Oxygen/14.7 psia	BX-265	ET
108138 / 2	10/26/2006	13B Lox	100% Oxygen / 500 psia (threshold up) / -297F	Slade / Pro-Tex	Other
108138 / 2	10/26/2006	13B Gox	100 % Oxygen / 500 psia / Ambient	Slade / Pro-Tex	Other
108143 / 0	10/26/2006	Flam	20.9% Oxygen/14.7 psia	NCFI 26-007 Foam	ET
108144 / 0	10/26/2006	Flam	20.9% Oxygen/14.7 psia	PDL 1034 - 2.5 LNO Resin	ET
108145 / 0	10/26/2006	Flam	20.9% Oxygen/14.7 psia	NCFI 26-007 Foam (aka PDL 1034)	ET
108146 / 2	10/26/2006	Tox		SAME (Smoke Aerosol Measurement Experiment) Flight Hardware	Other
108139 / 2	11/2/2006	13B Lox	100% Oxygen / 10000 psia / -297F	Braycote	V&CS
108139 / 2	11/2/2006	13B Gox	100 % Oxygen / 10000 psia / Ambient	Braycote	V&CS
108150 / 1	11/2/2006	13B Lox	100% Oxygen / 10000 psia (threshold down) / -297F	Teflon (Virgin TFE)	V&CS
108150 / 1	11/2/2006	13B Gox	100 % Oxygen / 10000 psia / Ambient	Teflon (Virgin TFE)	V&CS
108140 / 3	11/9/2006	Flam	20.9% Oxygen / 14.7 psia	Silicone Class 2 Grade 70	Round Robin 2006
108141 / 3	11/9/2006	Flam	30% Oxygen / 10.2 psia	Kydex* 100	Round Robin 2006
108142 / 3	11/16/2006	4A	20.9% Oxygen / 14.7 psia	M81044/12-20	Round Robin 2006
108147 / 3	11/16/2006	4A	30% Oxygen / 10.2 psia	M22759/32-20	Round Robin 2006

Final RFP NNM08125357R

108150 / 1	11/16/2006	13B Lox	-297F / 5000 psia	Teflon ( Virgin TFE)	V&CS / Other
108151 / 2	11/23/2006	Flam	30% Oxygen / 10.2 psia	Tecamax 1200	Other
108152 / 2	11/23/2006	13B Lox	-297F / 10000 psia	Teflon ( Virgin TFE)	V&CS
108153 / 2	11/23/2006	Flam	30% Oxygen / 10.2 psia	Tecamax 1500	Other
108152 / 2	11/30/2006	13B Gox	75F / 10000 psia	Teflon ( Virgin TFE)	V&CS
108159 / 0	11/30/2006	13A LOX	-297 F / 14.7 psia	Leak Test Compound Formula # N727E	ET
108160 / 2	12/14/2006	13B Lox	-297 F / 10000 psia	Marco S-1141 Black Ink	SSME
108161 / 2	12/14/2006	Flam	20.9% O2 / 14.7 psia	NCFI 26-007	ET
108162 / 3	1/4/2007	1	20.9% O2 / 14.7 psia	NCFI 24-124	ET
108163 / 3	1/4/2007	1	20.9% O2 / 14.7 psia	NCFI 24-124	ET
108164 / 3	1/4/2007	1	20.9% O2 / 14.7 psia	NCFI 24-124	ET
108165 / 3	1/4/2007	1	20.9% O2 / 14.7 psia	NCFI 24-124	ET
108149-C / 3	1/11/2007	Tox		3M 425 Al Tape	Round Robin 2006
108169 / 4	1/11/2007	13A	14.7 psia / -297F / 100% O2	Epon 862 /w 10% MX 136 18-24	Research
108170 / 4	1/11/2007	13A	14.7 psia / -297F / 100% O2	GY281	Research
108171 / 4	1/11/2007	13A	14.7 psia / -297F / 100% O2	Epon 862 /w 10% MX 960	Research
108172 / 2	1/11/2007	13B Gox	10000 psia / 75 F / 100% O2	Teflon (Virgin TFE)	V&CS
108148-B / 3	1/18/2007	Tox		K-Flex ECO Closed Cell Elastometric Foam	Round Robin

**Final RFP NNM08125357R**

108166 / 4	1/18/2007	13A	14.7 psia / -297F / 100% O2	Epon 862 /w 10% MX 125	Other
108167 / 4	1/18/2007	13A	14.7 psia / -297F / 100% O2	Epon /w 10% MX 156 18-24	Other
108168 / 4	1/18/2007	13A	14.7 psia / -297F / 100% O2	Epon 862 /w 10% MX 136	Other
108172 / 2	1/18/2007	13B LOX	10000 psia / -297F / 100% o2	Teflon (Virgin TFE)	Other
108148-A / 3	1/25/2007	Tox		K-Flex ECO Closed Cell Elastometric Foam	Round Robin
108148-C / 3	1/25/2007	Tox		K-Flex ECO Closed Cell Elastometric Foam	Round Robin
108173 / 2	1/25/2007	13B Gox	100 % O2 / 680 psia / 75F	P5N Graphite	SSME
108174 - B / 2	2/8/2007	13B Lox	100% O2 / 10000 psia & 5000 psia / -297F		Other
108174 - A / 2	2/8/2007	13B Gox	100% O2 / 10000 psia & 5000 psia / 75F		Other
108176 / 0	2/8/2007	13A LOX	100% O2 / 14.7 psia / -297F	Leak Test Compound Formula # N727E	ET
108154 - A/3	2/15/2007	13A LOX	100% O2 / 14.7psia / -297F	Aspen Pyrogel 6350	Commercial
108155 - A /3	2/15/2007	13A LOX	100% O2 / 14.7psia / -297F	Aspen Pyrogel 6381	Commercial
108156- A/3	2/15/2007	13A LOX	100% O2 / 14.7psia / 297F	Lydall SI Wrap	Commercial
108157- A/3	2/15/2007	13A LOX	100% O2 / 14.7psia / 297F	Russell Engineering Wrap	Commercial
108158- A/3	2/15/2007	13A LOX	100% O2 / 14.7psia / 297F	Fiberglass Insulation FB -135	Commercial
108175- A/2	2/15/2007	13B Lox	100% O2 / 5015 psia / -297F	321 Dry Film Lubricant	SSME
108177 / 0	3/1/2007	HPC	100% O2 / 485F / 400psig	Cres 316 SS	Shuttle
108178-A / 0	3/1/2007	HPC	100% O2 / 485F / 400psig	AMS 4640	Shuttle

Final RFP NNM08125357R

108178-B / 0	3/1/2007	HPC	100% O2 / 75F / 400psig	AMS 4640	Shuttle
108178-C / 0	3/1/2007	HPC	100% O2 / 75F / 300psig	AMS 4640	Shuttle
108178-D / 0	3/1/2007	HPC	100% O2 / 75F / 100psig	AMS 4640	Shuttle
108178-E / 0	3/1/2007	HPC	100% O2 / 75F / 200psig	AMS 4640	Shuttle
108178-F / 0	3/1/2007	HPC	100% O2 / 75F / 250psig	AMS 4640	Shuttle
108180 / 2	3/8/2007	13A LOX	100% O2 / -297 F / 14.7 psia	Zonyl PFBI	Commercial
108181 / 2	3/15/2007	13B Lox	100% O2 / -297 F / 10000 psia	Sharpie TEC Marker # 13401	SSME
108182 / 2	3/22/2007	13B Lox	100% O2 / -297 F / 10000 psia	Sharpie TEC Marker # 13401	SSME
108183 / 2	3/22/2007	13B Lox	100% O2 / -297 F / 10000 psia	Sharpie TEC Marker # 13402	SSME
108184 / 2	3/22/2007	13B Lox	100% O2 / -297 F / 10000 psia	Sharpie TEC Marker # 13403	SSME
108185 / 2	3/22/2007	13B Lox	100% O2 / -297 F / 10000 psia	Marco S-1141 Black Ink	SSME
108200-A / 4	3/22/2007	17	100% O2 / 75F/ 200 psia	AMS 4640	SSME
108200-B / 4	3/22/2007	17	100% O2 / 75F/ 150 psia	AMS 4641	SSME
108200-C / 4	3/22/2007	17	100% O2 / 75F/ 100 psia	AMS 4642	SSME
108200-D / 4	3/22/2007	17	100% O2 / 75F/ 50 psia	AMS 4643	SSME
108178-H / 4	3/29/2007	17	100% O2 / 75F / 150 psig	AMS 4640	SSME
108178-I / 4	3/29/2007	17	100% O2 / 75F / 100 psig	AMS 4640	SSME
108186-A / 2	3/29/2007	AIT	100% O2 / 1500 psig	Viton A	Round Robin

Final RFP NNM08125357R

108187-A / 2	3/29/2007	AIT	100% O2 / 1500 psig	Zytel *42	Round Robin
108198-A / 2	3/29/2007	Tox	20.9% O2/ 120F/ 72 Hours / 14.5 psig	SHERE Assembly	ISS/MSG
108199-A/2	3/29/2007	Tox	20.9% O2/ 120F/ 72 Hours / 14.5 psig	SHERE Fluid Module	ISS/MSG
108188-A / 2	4/5/2007	AIT	1500 psig / 100% O2	Polyethylene	Round Robin
108201-A / 2	4/5/2007	13B LOX	100% O2 / -297F / 5000 psig	Molykote Z	SSME
108202 - B / 2	4/5/2007	13B LOX	100% O2 / -297F / 10000 psig	Krytox 240AB Lot 120B	Other
108192-A / 3	4/12/2007	Flam	20.9% O2 / 14.7 psia / 75F	Firesist HUV	Other
108193-A / 3	4/12/2007	Flam	20.9% O2 / 14.7 psia / 75F	Glen Guard Fabric	Other
108202-A / 2	4/12/2007	13B GOX	100% O2 / 300F / 10000 psig	Krytox 240AB Lot 120B	Other
108213-A / 0	4/12/2007	13A LOX	100% O2 / -297F / 14.7psia	Leak Test Compound Formula # N727E	SSME
108204-A / 3	4/19/2007	Tox	120F / 72 hours	Enthone 50-700R with Catalyst 9	ISS / Micro / Payloads
108207-A / 2	4/19/2007	Flam	20.9% O2 / 14.7 psia / 75F	NCFI 24-57 (21864A-3-13)	ET
108208-A / 2	4/19/2007	Flam	20.9% O2 / 14.7 psia / 75F	NCFI 24-57 (21864A-4-13)	ET
108209-A / 2	4/19/2007	Flam	20.9% O2 / 14.7 psia / 75F	NCFI 24-57 (21864A-6R1-13)	ET
108210-A / 2	4/19/2007	Flam	20.9% O2 / 14.7 psia / 75F	NCFI 24-57 (21864A-7-13)	ET
108211-A / 2	4/19/2007	Flam	20.9% O2 / 14.7 psia / 75F	NCFI 24-57 (21865A-1-13)	ET
108212-A / 2	4/19/2007	Flam	20.9% O2 / 14.7 psia / 75F	NCFI 24-57 (21865A-2-13)	ET
108189 - A / 4	4/26/2007	AIT		PTFE (Teflon)	Round Robin

Final RFP NNM08125357R

108203-B / 3	4/26/2007	TVS		Enthone M-9-N with Catalyst 20/A	ISS / Micro / Payloads
108204-B / 3	4/26/2007	TVS		Enthone 50-700R with Catalyst 9	ISS / Micro / Payloads
108205-B / 3	4/26/2007	TVS		Enthone M-O-N with Catalyst 77	ISS / Micro / Payloads
108214-A / 2	4/26/2007	13B LOX	100% O2 / -297F / 5000psig	Halocarbon 25-5S	SSME
108190-A / 4	5/3/2007	AIT		EPDM	Round Robin
108191-A / 4	5/3/2007	AIT		Buna S Rubber	Round Robin
108194 - A / 3	5/3/2007	Flam	20.9% O2 / 14.7 psia / 75F	Heat Resistant Material Style 5340	Research
108203-A / 3	5/3/2007	Tox		Enthone M-9-N with Catalyst 20/A	ISS / Micro / Payloads
108206 - B / 3	5/3/2007	TVS		Enthone M-O-N with Catalyst 20/A	ISS / Micro / Payloads
108215-A / 2	5/3/2007	13B LOX	100% O2 / -297F / 10000psig	Sharpie TEC Marker # 13401	SSME
108195 - A / 3	5/17/2007	Flam	20.9% O2 / 14.7 psia / 75F	Heat Resistant Material Style 4584	Research
108196 - A / 3	5/17/2007	Flam	20.9% O2 / 14.7 psia / 75F	Heat Resistant Material Style 4585	Research
108197 - A / 3	5/17/2007	Flam	20.9% O2 / 14.7 psia / 75F	Heat Resistant Material Style 4539	Research

- II. **WBS Element 2.2 ETF/EFDTF Test Support** - The following historical test data is for informational purposes only. The data provides a TPS Number (the document that turns the technician workforce on to perform chamber operations), the Project (Test Title), test chamber the test was performed in, and a start and completion date. Note: TPS numbers containing a FAC are for facility work.

<b>ETF HISTORICAL TEST DATA (2006)</b>				
<b>TPS Number</b>	<b>Project</b>	<b>Chamber</b>	<b>Test Start Date</b>	<b>Test End Date</b>
ET30-2006-2	Pre-F001 Panel Verification Run	V11	1/6/2006	1/6/2006
ET30-2006-3	F001-06 Panel Test	V11	1/6/2006	1/6/2006
ET30-2006-4	Chamber Background	V2	1/6/2006	1/9/2006
ET30-2006-5	RCC Crack Repair GRC Samples	V3	1/6/2006	1/6/2006
ET30-2006-6	ITT Raychem Cable Bake out	V2	1/9/2006	1/12/2006
ET30-2006-7	PAL-008-1B-AL-2 Cold Cycle 3 & RPD	V11	1/10/2006	1/11/2006
ET30-2006-8	PAL008-1B-AL-3 Cold Cycle 3 & RPD	V11	1/11/2006	1/12/2006
ET30-2006-9	RCC Crack Repair, Degassed NOAX	V3	1/12/2006	1/12/2006
ET30-2006-10	AC002 Sample Panel Cryo Cycle	V11	1/13/2006	1/17/2006
ET30-2006-11	RCC Crack Repair	V3	1/17/2006	1/17/2006
ET30-2006-12	Panel AC002-3 Cryo Cycle 1	V11	1/17/2006	1/19/2006
ET30-2006-13	Panel AC002-3 Cryo Cycle 2	V11	1/17/2006	1/20/2006
ET30-2006-14	RCC Crack Repair Practice Fabrication	V3	1/24/2006	1/26/2006
ET30-2006-15	ITT Raychem Wire	V7	1/25/2006	1/30/2006
ET30-2006-16	RCC Crack Repair Practice Fabrication	V3	1/27/2006	3/10/2006
ET30-2006-17	ITT CABLE BAKEOUT	V7	2/1/2006	2/8/2006
ET20-2006-18	Panel PAL008-1B-TI-1 Cryo Cycle 1	V11	2/2/2006	2/3/2006
ET20-2006-19	Panel PAL008-1B-IN-1 Cryo Cycle 1	V11	2/3/2006	2/4/2006
ET20-2006-20	Panel PAL008-1B-TI-2 Cryo Cycle 1	V11	2/4/2006	2/6/2006
ET20-2006-21	Panel PAL008-1B-IN-2 Cryo Cycle 1	V11	2/6/2006	2/7/2006
ET20-2006-22	Panel PAL008-1B-TI-2 Cryo Cycle 2 & RPD	V11	2/7/2006	2/8/2006
ET20-2006-23	Panel PAL008-1B-TI-1 Cryo Cycle 2 & RPD	V11	2/8/2006	2/9/2006
ET20-2006-24	PAL Elimination Panel Test Proof of Read	RAC1	2/8/2006	2/9/2006
ET20-2006-25	Panel PAL-008-1B-IN-1 Cryo Cycle 2 & RPD	V11	2/9/2006	2/10/2006
ET20-2006-26	Panel PAL-008-1B-IN-2 Cryo Cycle 2 & RPD	V11	2/10/2006	2/11/2006
ET20-2006-27	Panel 809-8520-IN-1 Cryo Cycle 1	RAC1	2/10/2006	2/11/2006
ET20-2006-28	Panel 809-8520-AL-1 Cryo Cycle 1	V11	2/11/2006	2/13/2006
ET20-2006-29	Panel 809-8520-TI-1 Cryo Cycle 1	RAC1	2/11/2006	2/13/2006
ET20-2006-30	Panel 809-8520-IN-1 Cryo Cycle 2	RAC1	2/16/2006	2/17/2006
ET20-2006-31	Panel 809-8520-AL-2 Cryo Cycle 1	V11	2/13/2006	2/14/2006
ET20-2006-32	Panel 809-8520-AL-1 Cryo Cycle 2	V11	2/14/2006	2/15/2006
ET20-2006-33	Panel 809-8520-AL-4 Cryo Cycle 1	RAC1	2/14/2006	2/15/2006
ET20-2006-34	Panel 809-8520-AL-2 Cryo Cycle 2	V11	2/15/2006	2/16/2006
ET20-2006-35	Panel 809-8520-AL-3 Cryo Cycle 1	RAC1	2/15/2006	2/16/2006
ET20-2006-36	Panel 809-8520-TI-1 Cryo Cycle 2	V11	2/17/2006	2/21/2006
ET20-2006-37	Panel 809-8520-AL-1 Cryo Cycle 3 & RPD	V11	2/16/2006	2/17/2006
ET20-2006-38	Panel 809-8520-AL-3 Cryo Cycle 2	RAC1	2/17/2006	2/21/2006

**Final RFP NNM08125357R**

ET20-2006-39	Panel 809-8520-IN-1 Cryo cycle 3 & RPD	V11	2/21/2006	2/22/2006
ET20-2006-40	RCC Crack Repair Microwave Cure	V3	2/21/2006	3/10/2006
ET20-2006-41	Pre-Bake Eccosorb prior to V3 usage	V5	2/21/2006	2/24/2006
ET20-2006-42	Panel 809-8520-TI-1 Cryo Cycle 3 &RPD	V11	2/22/2006	2/23/2006
ET20-2006-43	Electronics Circuit Board	V12	2/23/2006	2/23/2006
ET20-2006-44	RCC Crack Repair Temperature Profiles	V3	3/3/2006	3/10/2006
ET20-2006-45	AC006 Sample Panel Cryo Cycle & RPD	V11	3/3/2006	3/9/2006
ET20-2006-46	MSRR1 Flight Unit & Spare Video Box	TH1	3/6/2006	3/13/2006
ET20-2006-47	RCC Crack Repair Tooling Hardware Testin	V3	3/9/2006	3/19/2006
ET20-2006-48	AC006 Checkout Panel Cryo Cycle & RPD	V11	3/10/2006	3/14/2006
ET20-2006-49	RCC Crack Repair Tooling Hardware Testin	V3	3/10/2006	3/13/2006
ET20-2006-50	F001 Check Out Panel	V11	3/14/2006	3/14/2006
ET20-2006-51	F001-02 Panel	V11	3/14/2006	3/14/2006
ET20-2006-52	F001-03 Panel	V11	3/14/2006	3/15/2006
ET20-2006-53	F001-04 Panel	V11	3/14/2006	3/16/2006
ET20-2006-54	F001-05 Panel	V11	3/14/2006	3/16/2006
ET20-2006-55	F001 Checkout Panel	V11	3/15/2006	3/15/2006
ET20-2006-56	AC006 Checkout Panel Cryo Cycle & RPD	V11	3/20/2006	3/21/2006
ET20-2006-57	eva marker test	V3	3/19/2006	3/20/2006
ET20-2006-58	RCC SUBSTRATE DUAL THERMOCOUPLE TEST	V3	3/20/2006	3/21/2006
ET20-2006-59	RCC PALETTE TEST	V3	3/21/2006	3/24/2006
ET20-2006-60	AC006 Panel 01 Cryo Cycle & RPD	V11	3/22/2006	2/23/2006
ET20-2006-62	MSRR1 Video Box Qual Test	TH5	3/27/2006	3/31/2006
ET20-2006-63	bipode heater plate	V5	3/31/2006	4/6/2006
ET20-2006-64	Cooling Cart/Coldplates Check out	SUNSPOT	4/5/2006	4/14/2006
ET20-2006-65	RCC Crack Repair Working Life Engineerin	V3	4/7/2006	4/7/2006
ET20-2006-66	RCC Crack repair Microwave Cure System P	V3	4/10/2006	4/14/2006
ET20-2006-67	Window Fairing Test	TA1	4/13/2006	Not Recorded
ET20-2006-68	RCC Crack Repair Type A	V3	4/17/2006	4/18/2006
ET20-2006-69	Video Box Test	TH5	4/17/2006	4/21/2006
ET20-2006-70	RCC Crack Repair Type A	V3	4/21/2006	4/21/2006
ET20-2006-71	RCC Crack Repair Type A/No Type A (RCC-T	V3	4/24/2006	4/27/2006
ET20-2006-72	809-8533 Panel front face heat profile d	V11	4/26/2006	4/28/2006
ET20-2006-73	GBM Cable Bakeout Per MSFC-SPEC-684	V7	5/2/2006	5/5/2006
ET20-2006-74	RCC Crack Repair Working Life Engineerin	V3	5/2/2006	5/2/2006
ET20-2006-75	Pre-Bake Chamber	V9	5/2/2006	5/4/2006
ET20-2006-76	809-8533 Panel BX265-CYL-1-4223-DEV	V11	5/3/2006	5/4/2006
ET20-2006-77	GBM INSTRUMENTS THERMAL VACUUM CYCLE TEST	SUNSPOT	5/4/2006	5/30/2006
ET20-2006-78	RCC Crack Repair Working Life Engineerin	V3	5/4/2006	5/4/2006
ET20-2006-79	Protoflight Test of Inspection Boom Asse	V9	5/5/2006	5/22/2006
ET20-2006-80	GBM Cable Bakeout	V4	5/5/2006	5/8/2006
ET20-2006-81	GBM Box and Welding Rods	V8	5/5/2006	5/9/2006
ET20-2006-82	809-8533 Panel BX265-SLOT-1A-423-DEV	V11	5/9/2006	5/11/2006
ET20-2006-83	809-8533 Panel checkout front face heati	V11	5/16/2006	5/23/2006
ET20-2006-84	Excitation Power Boxes SN 002, SN 003	TH5	5/18/2006	6/8/2006
ET20-2006-85	809-8533 Panel BX265-CYL-1-423	V11	6/26/2006	6/27/2006
ET20-2006-86	GBM CYCLE TEST	TH5	5/31/2006	6/1/2006
ET20-2006-87	ATA FSE Heater Mat Assembly Checkout	V9	6/12/2006	Not Recorded

**Final RFP NNM08125357R**

ET20-2006-88	809-8576 Panel front face heat profile d	V11	6/7/2006	6/9/2006
ET20-2006-89	809-8576 Checkout Panel IFR-1	V11	6/10/2006	6/12/2006
ET20-2006-90	809-8576 Panel IFR-2	V11	6/10/2006	6/12/2006
ET20-2006-91	809-8576 Panel IFR-3	V11	6/10/2006	6/12/2006
ET20-2006-92	AF&M MLI BLANKETS BAKEOUT	V7	6/12/2006	6/17/2006
ET20-2006-93	809-8576 Panel Cryo Test Development	V11	6/13/2006	6/14/2006
ET20-2006-94	809-8576 Panel IFR-13	V11	6/14/2006	6/15/2006
ET20-2006-95	809-8576 Panel IFR-15	V11	6/15/2006	6/16/2006
ET20-2006-96	809-8576 Panel IFR-14	V11	6/16/2006	6/19/2006
ET20-2006-97	V2 Chamber Background	V2	6/16/2006	Not Recorded
ET20-2006-98	809-8576 Panel IFR-5	V11	6/19/2006	6/19/2006
ET20-2006-99	SUNSPOT CHAMBER OGS RACK BACKGROUND	SUNSPOT	6/20/2006	6/26/2006
ET20-2006-100	809-8576 Panel IFR-4	V11	6/20/2006	6/21/2006
ET20-2006-101	809-8533 Panel BX265-CYL-1-D-423	V11	6/27/2006	6/28/2006
ET20-2006-102	RCC Crack Repair Paletting NOAX Degas Te	V3	6/26/2006	6/26/2006
ET20-2006-103	809-8533 Panel BX265-SLOT-1A-423	V11	6/28/2006	6/29/2006
ET20-2006-104	809-8533 Panel BX265-SLOT-1B-423	V11	6/29/2006	6/30/2006
ET20-2006-105	Boeing 787 Window 15K Pressure Cycles	RAC1	6/26/2006	Not Recorded
ET20-2006-106	HERO Star Camera Thermal Vacuum Test	SUNSPOT	7/5/2006	7/7/2006
ET20-2006-107	809-8533 Panel Checkout for LN2 Filled C	V11	7/6/2006	7/6/2006
ET20-2006-108	RCC Crack Repair Paletting NOAX Degas Te	V3	7/6/2006	Not Recorded
ET20-2006-109	809-8533 Panel BX265-CYL-1-320	V11	7/7/2006	7/10/2006
ET20-2006-110	JWST, BSTA Background	SUNSPOT	7/10/2006	7/13/2006
ET20-2006-111	809-8533 Panel BX265-SLOT-1B-320	V11	7/11/2006	7/12/2006
ET20-2006-112	809-8533 Panel BX265-SLOT-1A-320	V11	7/12/2006	7/13/2006
ET20-2006-113	THERMAL VACUUM BAKEOUT OF ATK JWST/BSTA	SUNSPOT	7/13/2006	7/21/2006
ET20-2006-114	UAH/CMR RADIATIVE HEAT FIN THERMAL VACUU	SUNSPOT	7/24/2006	7/28/2006
ET20-2006-115	Sample Panel for Change in BackFace Prof	V11	7/26/2006	7/27/2006
ET20-2006-116	809-8533 Panel Engineering Dev Test	V11	7/27/2006	Not Recorded
ET20-2006-117	AFM 23 MLI BLANKET B/O	V7	8/2/2006	8/12/2006
ET20-2006-118	Paragon SDC Integral Radiator Panel Ther	SUNSPOT	8/2/2006	8/11/2006
ET20-2006-119	Coupon Bakeout	V8	8/3/2006	8/6/2006
ET20-2006-120	zin rack chamber b/o	SUNSPOT	8/28/2006	9/3/2006
ET20-2006-121	LDU FSE Heater Mat Assembly 683-96838	V6	8/30/2006	9/1/2006
ET20-2006-122	LDU FSE Heater Mat Assembly 683-96845	V6	9/5/2006	9/7/2006
ET20-2006-123	Pre Bake and Toxicity Test of ZIN CIR Ra	SUNSPOT	9/6/2006	9/19/2006
ET20-2006-124	Water Delivery Controller Thermal Test	TH5	9/28/2006	10/2/2006
ET20-2006-125	UPA Controller Assembly	TH5	10/17/2006	Not Recorded
ET20-2006-126	RCC Crack Repair Small Hole Repair	V3	10/18/2006	Not Recorded
ET20-2006-127	RCC Crack Repair Small Hole Runs	V3	10/27/2006	Not Recorded
ET20-2006-128	UPA Troubleshooting	TH1	11/3/2006	Not Recorded
ET20-2006-129	FFTD Removal Tool	V3	11/9/2006	Not Recorded
ET20-2006-130	ION CABLE Chamber prep	V7	Not Recorded	Not Recorded
ET20-2006-131	ION CABLE BAKEOUT	V7	11/9/2006	11/13/2006
ET20-2006-132	SA10.1 ION CABLE BAKEOUT	V7	11/16/2006	Not Recorded
ET20-2006-133	Chamber Checkout	V3	11/22/2006	Not Recorded
ET20-2006-134	RCC Crack Repair: Small Hole Repair	V3	11/27/2006	Not Recorded
ET20-2006-135	Instrumentation Checkout	RAC1	12/20/2006	Not Recorded

**Final RFP NNM08125357R**

ET20-2006-136	Boeing 787 Window 15K pressure Cycles	RAC1	12/21/2006	Not Recorded
ET24-FAC-0157	Removal of Rack for Modal Test Fixture	Rome	1/4/2006	1/5/2006
ET24-FAC-0158	Top Flange Manipulator Structure	V-11	1/6/2006	1/10/2006
ET24-FAC-0159	TH OP Cert	V-9	1/11/2006	1/17/2006
ET24-FAC-0160	SS Operator Certificate	V-3	1/11/2006	1/11/2006
ET24-FAC-0161	GBM Manifolds	SUNSPOT	1/11/2006	Not Recorded
ET24-FAC0162	GBM Lamp Arrays Holders	SUNSPOT	1/11/2006	Not Recorded
ET30-FAC-0163	Safety Concern Closeout Proof	RAC	1/20/2006	1/26/2006
ET30-FAC-0164	TQCM Reference Blocks	NA	1/19/2006	2/1/2006
ET30-FAC-0165	DK Operator Certificate	V-9	1/25/2006	1/25/2006
ET30-FAC-0166	CATCH TRAY/SHELF	V-7	1/25/2006	2/1/2006
ET30-FAC-0167	Lhe Copper Manifold	RAC	1/26/2006	Not Recorded
ET30-FAC-0168	Install Turbo Pump Foreline Valve	SUNSPOT	1/30/2006	2/15/2006
ET30-FAC-0169	Install GBM Cold Plates	SUNSPOT	1/23/2006	3/28/2006
ET30-FAC-0170	#2 Cryopump Helium Charge	V-7	1/30/2006	1/30/2006
ET30-FAC-0171	DS OPCERT	V-9	1/30/2006	2/1/2006
ET30-FAC-0172	panel alignment pin fabrication	V-11	1/31/2006	2/2/2006
ET20-FAC-0173	Boeing 787 Window test evaluation	RAC1	2/1/2006	2/3/2006
ET20-FAC-0174	Cold Plate Relocation	V3	2/13/2006	2/14/2006
ET20-FAC-0175	CA OpCert	TH-5	2/10/2006	2/13/2006
ET20-FAC-0176	Fabricate GBM Coldplate	SUNSPOT	2/13/2006	3/10/2006
ET20-FAC-0177	CA Operator Certification	TH-4	2/17/2006	2/17/2006
ET20-FAC-0178	AC006 Foam Panel Test Development	V-11	2/24/2006	3/15/2006
ET20-FAC-0179	Concrete Pad for Phaser Mounting	RAC2	2/24/2006	3/2/2006
ET20-FAC-0180	Cryogenic feedthrough flange fabrication	RAC2	2/27/2006	3/14/2006
ET20-FAC-0181	Chamber floor grating modification	RAC2	2/27/2006	2/28/2006
ET20-FAC-0182	Cooling Cart Installation	V-3	3/2/2006	3/5/2006
ET20-FAC-0183	Phaser Power Wiring Installation	RAC2	3/2/2006	3/20/2006
ET20-FAC0184	Fluid feedthrough fabrication	RAC2	3/2/2006	3/22/2006
ET20-FAC0185	Viewing Window Installation	RAC2	3/2/2006	3/2/2006
ET20-FAC-0186	Fabricate connectors for power feedthrou	RAC2	3/2/2006	3/28/2006
ET20-FAC-0187	Controller Installation	V-3	3/3/2006	3/5/2006

**Final RFP NNM08125357R**

ET20-FAC-0188	Replace Dimension Controller on V4	V-4	3/6/2006	3/14/2006
ET20-FAC-0189	Electrical Pull Box	RAC2	3/6/2006	3/14/2006
ET20-FAC-0190	Adapter Plate Modification	TA-1	3/9/2006	3/16/2006
ET20-FAC-0191	Butter-Fly Valve Maintenance	V-11	3/13/2006	3/21/2006
ET20-FAC-0192	Fabricate Power Feedthrough Connectors	RAC2	3/13/2006	3/28/2006
ET20-FAC-0193	Test Setup Maintenance	V-11	3/21/2006	3/21/2006
ET20-FAC-0194	Regulator Valve Replacement	V-3	3/27/2006	Not Recorded
ET20-FAC-0195	Cold Plate Box Removal	V-3	3/27/2006	Not Recorded
ET20-FAC-0196	CABLE FAB FOR BOEING 787 WINDOW FAIRING	TA-1	3/29/2006	3/31/2006
ET20-FAC-0197	Cold Box	V-9	3/29/2006	4/26/2006
ET20-FAC0198	Cryo-liquid & general plumbing installat	RAC2	4/3/2006	Not Recorded
ET20-FAC-0199	Instrumentation Installation	RAC2	4/3/2006	Not Recorded
ET20-FAC-0200	Attachment of Deutsch Vacuum End Connect	SUNSPOT	4/10/2006	4/11/2006
ET20-FAC-0201	Move Carport 6" north	RAC2	4/10/2006	Not Recorded
ET20-FAC-0202	Assemble and Install Instrumentation por	RAC2	4/10/2006	Not Recorded
ET20-FAC-0203	Bracket Fabrication & Installation	RAC2	4/10/2006	Not Recorded
ET20-FAC-0204	Bracket Manufacture	TA-1	4/10/2006	Not Recorded
ET20-FAC-0205	Remove temporary wiring	ROME	4/11/2006	4/20/2006
ET20-FAC-0206	V4 Chamber Check-out	V-4	4/11/2006	4/11/2006
ET20-FAC-0207	Rm 167 UPS Removal	V-15	4/13/2006	Not Recorded
ET20-FAC-0208	Window Port Fabrication	RAC2	4/17/2006	Not Recorded
ET20-FAC-0209	Chmaber Support Frame Fabrication	V-14	4/17/2006	Not Recorded
ET20-FAC-0210	Cryogenic Feedthrough Installation	RAC2	4/17/2006	Not Recorded
ET20-FAC-0211	Remove Chain Link Fence in Rm 166	V-15	4/18/2006	4/20/2006
ET20-FAC-0212	V15 flange inspection and cleaning	V-15	4/18/2006	Not Recorded
ET20-FAC-0213	Install 37 Pin Connectors on GBM Cables	SUNSPOT	4/21/2006	4/24/2006
ET20-FAC-0214	SunSpot Power Outage Simulation	SUNSPOT	4/25/2006	5/1/2006
ET20-FAC-0215	heat exchanger	V-9	4/25/2006	5/4/2006
ET20-FAC-0216	Fabricate 2" pipe to 2" AN adapter	RAC2	4/25/2006	4/27/2006
ET20-FAC-0217	Move gray cabinets from 166 to 167	V-15	4/25/2006	4/26/2006
ET20-FAC-	Replace orange receptacles with standard	V-15	4/25/2006	4/26/2006

Final RFP NNM08125357R

0218				
ET20-FAC-0219	Rail/Door system	V-9	4/26/2006	4/28/2006
ET20-FAC-0220	Door Lifting Mechanism	V-9	4/28/2006	5/2/2006
ET20-FAC-0221	Remove Door Railing	V-9	5/1/2006	Not Recorded
ET20-FAC-0222	Load Test	V-9	5/1/2006	5/1/2006
ET20-FAC-0223	ATTACH DEUTSCH CONNECTOR TO GBM CABLE	SUNSPOT	5/1/2006	5/2/2006
ET20-FAC-0224	Disassemble Clean Room	Clean Room	5/2/2006	Not Recorded
ET20-FAC-0225	Drill Out GBM Cold Plate Hole Pattern	SUNSPOT	5/2/2006	5/4/2006
ET20-FAC-0226	Fabricate Helium Vent Line for V11	V-11	5/9/2006	5/9/2006
ET20-FAC-0227	Chamber Venting Operation for GBM Cycle	SUNSPOT	5/5/2006	5/30/2006
ET20-FAC-228	Setup Portable Heater at V11	V-11	5/9/2006	5/10/2006
ET20-FAC-229	Install Power Cord and Check Out Ultraso	NA	5/23/2006	5/24/2006
ET20-FAC-230	Boeing 787 Window Pressure Cycle Test Pr	RAC1	6/6/2006	6/12/2006
ET20-FAC-231	Add a Second Turbo Pump	V-6	6/6/2006	7/5/2006
ET20-FAC-232	Replace pressure gauges	V-11	6/7/2006	6/7/2006
ET20-FAC-233	Flange replacement	RAC1	6/13/2006	Not Recorded
ET20-FAC-234	COOLING CART INSTALLATION	V-9	6/14/2006	6/15/2006
ET20-FAC-235	LN2 Bypass Controller	V-2	6/21/2006	6/21/2006
ET20-FAC-236	Hang plastic curtains on outside entries	RAC1	6/26/2006	6/28/2006
ET20-FAC-237	Cover ceiling rails in screen room to st	RAC1	6/26/2006	6/28/2006
ET20-FAC-238	Replace Roughing Valve and Regulator	RAC1	6/29/2006	6/29/2006
ET20-FAC-239	Change Cryo Plumbing	V-11	6/30/2006	6/30/2006
ET20-FAC-240	Swap Helium Lines in V11 Cryo-Box	V-9	7/14/2006	Not Recorded
ET20-FAC-241	V-2 Demolition	V-2	7/26/2006	8/1/2006
ET20-FAC-243	Return SunSpot Turbo Pumping System to O	SUNSPOT	8/3/2006	Not Recorded
ET20-FAC-244	Replace Helium Compressor #2	V-7	8/4/2006	8/18/2006
ET20-FAC-245	Trouble Shoot the Chamber's Turbo Pumpin	SUNSPOT	8/14/2006	Not Recorded
ET20-FAC-246	V6 Chamber Checkout	V-6	8/16/2006	8/17/2006
ET20-FAC-247	Restore V9 to Operational Readiness	V-9	8/16/2006	Not Recorded
ET20-FAC-248	Replace Pump#2 System	V-7	8/18/2006	Not Recorded
ET20-FAC-249	Chamber Utilities Isolation Pumping Syst	ROME	8/21/2006	Not Recorded
ET20-FAC-250	Zin Cir Rack Load Test	Zin Cir Rack	8/24/2006	Not Recorded
ET20-FAC-251	Sunspot Grating Load Test	TH-5	8/24/2006	Not Recorded
ET20-FAC-252	Welder Requalification	SUNSPOT	9/12/2006	9/14/2006
ET20-FAC-253	Fabricate Turbo Pump Adapter	SUNSPOT	9/26/2006	12/4/2006
ET20-FAC-254	Shroud Leak Check	V-20	10/16/2006	Not Recorded
ET20-FAC-255	Pump Replacement	V-3	11/1/2006	Not Recorded
ET20-FAC-256	V3 Chamber Preparation	V-3	11/3/2006	Not Recorded
ET20-FAC-257	INSTALL TQCM	V-7	11/9/2006	11/9/2006
ET20-FAC-258	Roughing Trap LN2 Controller & Ln2 Vent connections	V-11	11/21/2006	Not Recorded
ET20-FAC-259	Roughing Trap Purge Solenoid connection	V-11	11/21/2006	Not Recorded
ET20-FAC-260	Kill Switch on Thermal Control Panel rewired	V-5	11/21/2006	Not Recorded
ET20-FAC-261	Chamber Cleanliness Inspection	V-20	11/21/2006	11/29/2006

**Final RFP NNM08125357R**

ET20-FAC-262	Polish all inside chamber surfaces.	V-15	11/21/2006	3/26/2007
ET20-FAC-263	Install air lines needed for chamber operation for V1,V2,V14	V-1	12/11/2006	12/31/2006
ET20-FAC-264	IRAD heater mount	V-5	12/14/2006	12/31/2006

<b>ETF HISTORICAL TEST DATA (2005)</b>				
<b>TPS Number</b>	<b>Project</b>	<b>Chamber</b>	<b>Start Date</b>	<b>End Date</b>
ET24-2005-01	Return To Flight OFI Relay Assembly	TH-5	1/5/2005	1/10/2005
ET24-2005-02	STP Secondary	TH	1/5/2005	Cancelled
ET24-2005-03	ECLSS Proof Test of the DA Assy	V-5	1/10/2005	1/10/2005
ET24-2005-04	AZ Tech Prime D Structive T/V B/O	SS	1/11/2005	1/18/2005
ET24-2005-05	ECLSS Leak Test of the DA Assembly	V-5	1/13/2005	1/14/2005
ET24-2005-06	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V-11	1/18/2005	1/19/2005
ET24-2005-07	ECLSS Leak Test of the DA Assembly	V-5	1/18/2005	1/19/2005
ET24-2005-08	UPA FCA Power Modul Depress DepressTest	V-5	1/18/2005	1/20/2005
ET24-2005-09	UPA FCA Power Modul Under Reduced Test Paes	TA-1	1/19/2005	1/20/2005
ET24-2005-10	RCC Crack Repair Shelf Life Testing	V-3	1/18/2005	1/24/2005
ET24-2005-11	UPA, DA Thermal Cycle Test	TH-5	1/19/2005	1/21/2005
ET24-2005-12	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V-11	1/20/2005	1/20/2005
ET24-2005-13	Huntsville Time Capsule	TH-4	1/21/2005	1/24/2005
ET24-2005-14	Huntsville Time Capsule Thermal Drying	TH-1	1/21/2005	1/24/2005
ET24-2005-15	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	1/22/2005	1/23/2005
ET24-2005-16	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	1/23/2005	1/23/2005
ET24-2005-17	ECLSS ORU Post Thermal DA Leak Test	V-5	1/24/2005	1/25/2005
ET24-2005-18	RCC Crack Repair - ROCR3 AB	V-3	1/24/2005	2/2/2005
ET24-2005-19	OBSS Pypro/Nitiator Control Bio Gard	V-9	1/24/2004	1/31/2005
ET24-2005-20	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	1/24/2004	1/26/2005
ET24-2005-21	FRAM - SAPA Acceptance Test	SunSpot	1/25/2005	2/3/2005
ET24-2005-22	FCA Engineering Unit Thermal Cycle Test	TH-5	1/25/2005	1/26/2005
ET24-2005-23	MSRR VAS Shelf Assy Leak Test	V-5	1/25/2005	1/26/2005
ET24-2005-24	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	1/26/2005	1/26/2005
ET24-2005-25	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	1/27/2005	1/28/2005
ET24-2005-26	ET-RTF- Excitation Power Box 9 Volt Battery Test	V-14	1/27/2005	1/31/2005
ET24-2005-27	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	1/28/2005	1/28/2005
ET24-2005-28	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	1/29/2005	1/31/2005
ET24-2005-29	WRS-2 Flace Plate Depress/Repress Test	V-7	1/30/2005	2/1/2005
ET24-2005-30	RCC Crack Repair Vacuum Only	V-3	2/2/2005	2/2/2005
ET24-2005-31	RCC Crack Repair Thermal Cycle Test	V-3	2/2/2005	2/2/2005
ET24-2005-31	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/4/2005	2/5/2005
ET24-2005-32	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/4/2005	2/6/2005
ET24-2005-33	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/4/2005	2/7/2005
ET24-2005-34	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/4/2005	2/7/2005
ET24-2005-35	Blank Toxicity Test	ROME	2/4/2005	2/10/2005
ET24-2005-36	Chamber Cert for AFM MLI Blankets	V-7	2/7/2005	2/11/2005
ET24-2005-37	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/8/2005	2/8/2005
ET24-2005-38	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/8/2005	Not Recorded

**Final RFP NNM08125357R**

ET24-2005-39	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/8/2005	2/9/2005
ET24-2005-40	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/9/2005	2/9/2005
ET24-2005-41	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/9/2005	Not Recorded
ET24-2005-42	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/9/2005	Not Recorded
ET24-2005-43	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/9/2005	2/12/2005
ET24-2005-44	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/9/2005	Not Recorded
ET24-2005-45	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/9/2005	2/10/2005
ET24-2005-46	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/9/2005	2/11/2005
ET24-2005-47	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/9/2005	2/15/2005
ET24-2005-48	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/10/2005	2/10/2005
ET24-2005-49	Rome Chamber Toxicity Test for OGA	ROME	2/10/2005	2/22/2005
ET24-2005-50	RCC Crack Repair Shelf Life Testing	V-3	2/10/2005	2/10/2005
ET24-2005-51	AF&M MLI Blanket T/V B/O	V-7	2/11/2005	2/16/2005
ET24-2005-52	RCC Crack Repair ROCR 9A & B	V-3	2/11/2005	2/13/2005
ET24-2005-53	Wave Camera Cold Box	TH-4	2/14/2005	2/14/2005
ET24-2005-54	RCC Crack Repair ROCR 8A & B	V-3	2/14/2005	2/16/2005
ET24-2005-55	Chamber V-2 TQCM/RGA Back Ground	V-2	2/14/2005	2/23/2005
ET24-2005-56	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/16/2005	2/16/2005
ET24-2005-57	Chamber Bake Out/Receipt for MLI	V-7	2/16/2005	2/16/2005
ET24-2005-58	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/17/2005	2/18/2005
ET24-2005-59	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/18/2005	2/18/2005
ET24-2005-60	RCC Crack Repair Rock 11 A&B	V-3	2/18/2005	2/25/2005
ET24-2005-61	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/19/2005	2/21/2005
ET24-2005-62	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/21/2005	2/22/2005
ET24-2005-63	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/22/2005	2/23/2005
ET24-2005-64	Rome Chamber Toxicity Test	ROME	2/22/2005	3/4/2005
ET24-2005-65	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/26/2005	3/1/2005
ET24-2005-66	AZ Tech Composit Coupon Test	V-2	2/23/2005	3/4/2005
ET24-2005-67	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/23/2005	Not Recorded
ET24-2005-68	Wave Camera Thermal Altitude Cycle Test	TA-1	2/22/2005	3/1/2005
ET24-2005-69	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/25/2005	2/26/2005
ET24-2005-70	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	2/26/2005	3/1/2005
ET24-2005-71	RCC Crack Repair ROCR 10 A & 13	V-3	2/28/2005	3/7/2005
ET24-2005-72	MSF Connector/Back Shell B/O Per 548B	V-4	2/28/2005	3/7/2005
ET24-2005-73	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	3/1/2005	3/4/2005
ET24-2005-74	ECLSS UPA FCA Thermal Cycle Test	TH-5	3/3/2005	3/6/2005
ET24-2005-75	Rome Chamber Toxicity Test #3	ROME	3/4/2005	3/11/2005
ET24-2005-76	Chamber Background (AZTece prep)	V-2	3/4/2005	3/8/2005
ET24-2005-77	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	3/7/2005	3/8/2005
ET24-2005-78	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	3/8/2005	3/8/2005
ET24-2005-79	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	3/8/2005	3/9/2005
ET24-2005-80	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	3/9/2005	3/9/2005
ET24-2005-81	RCC Crack Repair ATK Plug 1st Sample	V-3	3/9/2005	3/12/2005
ET24-2005-82	AZ Tech Composit Coupon Testing in TQCM & RGA	V-2	3/9/2005	3/12/2005
ET24-2005-83	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	3/9/2005	3/10/2005
ET24-2005-84	ET TPS CAT 2 Test of CAT 3 2x2 Panel	V11	3/10/2005	3/10/2005
ET24-2005-85	ET TPS CAT 2 Test of CAT 3 2x2 Panel	V11	3/10/2005	3/10/2005
ET24-2005-86	ET TPS CAT 2 Test of CAT 3 2x2 Panel	V11	3/10/2005	3/11/2005

**Final RFP NNM08125357R**

ET24-2005-87	ET TPS CAT 2 Test of CAT 3 2x2 Panel	V11	3/11/2005	3/11/2005
ET24-2005-88	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	3/11/2005	3/14/2005
ET24-2005-89	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	3/14/2005	3/15/2005
ET24-2005-90	FRAM - SAPA Acceptance Test	Sun Spot	3/14/2005	3/17/2005
ET24-2005-91	ET TPS CAT 2 Test of CAT	V11	3/15/2005	3/15/2005
ET24-2005-92	RCC Crack Repair Shelf Life Evaluation SLT-1	V-3	3/15/2005	3/17/2005
ET24-2005-93	Rome Toxicity Test Per Run & Steve Whitfield	ROME	3/15/2005	4/14/2005
ET24-2005-94	AF&M MLI Blanket	V-7	3/17/2005	3/21/2005
ET24-2005-95	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	3/19/2005	3/21/2005
ET24-2005-96	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	3/21/2005	3/23/2005
ET24-2005-97	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	3/21/2005	3/24/2005
ET24-2005-98	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	3/21/2005	3/22/2005
ET24-2005-99	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	3/21/2005	3/21/2005
ET24-2005-100	RCC Crack Repair	V-3	3/21/2005	3/23/2005
ET24-2005-101	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	3/22/2005	3/22/2005
ET24-2005-102	Welder Recertification (Charlie Anders)	V-20	3/22/2005	3/25/2005
ET24-2005-103	Sun Spot B/O - Cert for AZ Tech Panel	Sun Spot	3/22/2005	3/25/2005
ET24-2005-104	AF & M MLI Blanket B/O #1	V-7	3/23/2005	3/29/2005
ET24-2005-105	RCC Crack Repair Samples	V-3	3/24/2005	3/26/2005
ET24-2005-106	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	3/24/2005	3/28/2005
ET24-2005-107	Chamber Cert W TQCM & RGA	Sun Spot	3/28/2005	4/5/2005
ET24-2005-108	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	3/28/2005	3/29/2005
ET24-2005-109	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	3/29/2005	3/30/2005
ET24-2005-110	AF & M MLI Blanket B/O #2	V-7	3/29/2005	4/7/2005
ET24-2005-111	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	3/30/2005	3/31/2005
ET24-2005-112	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	3/31/2005	4/1/2005
ET24-2005-113	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	4/1/2005	4/4/2005
ET24-2005-114	AZ Tech Composite Coupons	V-2	4/1/2005	4/5/2005
ET24-2005-115	RCC Crack Repair Samples	V-3	4/1/2005	4/1/2005
ET24-2005-116	AZ Tech Prime D Structive B/O	SunSpot	4/5/2005	4/9/2005
ET24-2005-117	MSRR1 Ground Unit Video Box Thermal Cycle Test	TH-5	4/6/2005	4/18/2005
ET24-2005-118	Solar-B Telescope MLI Blanket B/O	V-9	4/6/2005	4/12/2005
ET24-2005-119	Solar-B Chamber Cert	V-2	4/6/2005	4/8/2005
ET24-2005-120	ET-DFI Signal Conditioning Unit Acceptance #4	TH-1	4/11/2005	4/11/2005
ET24-2005-121	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	4/11/2005	4/11/2005

**Final RFP NNM08125357R**

ET24-2005-122	Solar-B Telescope MLI Bakeout	V-2	4/12/2005	4/14/2005
ET24-2005-123	Prime D Structure Panel	Sun Spot	4/12/2005	4/18/2005
ET24-2005-124	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	4/13/2005	4/14/2005
ET24-2005-125	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	4/14/2005	4/15/2005
ET24-2005-126	RCC Crack Repair for STS-114 Crew	V-3	4/14/2005	4/18/2005
ET24-2005-127	AFM MLI Blanket B/O Batch #3	V-7	4/15/2005	4/19/2005
ET24-2005-128	RCC Crack Repair; NOAX 60 Shelf Test Life	V-3	4/20/2005	4/22/2005
ET24-2005-129	Solar-B Cobles B/O	V-9	4/20/2005	4/25/2005
ET24-2005-130	Chamber Cert for AF & M	V-7	4/20/2005	4/25/2005
ET24-2005-131	Solar-B Cables & MLI Bakeout	V-2	4/25/2005	4/27/2005
ET24-2005-132	RCC Crack Repair	V-3	4/25/2005	4/29/2005
ET24-2005-133	AFM MLI Blanket B/O	V-7	4/26/2005	5/2/2005
ET24-2005-134	RCC Crack Repair	V-3	5/2/2005	5/3/2005
ET24-2005-135	RCC Crack Repair	V-3	5/3/2005	5/5/2005
ET24-2005-136	AF & M MIL Blanket B/O	V-7	5/3/2005	5/9/2001
ET24-2005-137	MSRR Video Box Wire Harness 684 B/O	V-4	5/5/2005	5/10/2005
ET24-2005-138	Chamber V-2 Cert Per 1238 Spec	V-2	5/9/2005	5/15/2005
ET24-2005-139	IVA Pressure Wall Acoustic Chat	V20	5/9/2005	5/13/2005
ET24-2005-140	Solar-B Cables/Feed Thrus & Tape B/O	V-9	5/10/2005	5/16/2005
ET24-2005-141	JWST MIL Blanket(s) B/O	V-7	5/11/2005	5/18/2005
ET24-2005-142	RCC Crack Repair NOAZ Exposure	V-3	5/12/2005	5/12/2005
ET24-2005-143	KU Band Deployed Assembly	SunSpot	5/13/2005	5/19/2005
ET24-2005-144	Boeing Duxseal/Utility Feed Thru Repair Development Test	V-20/PW	5/16/2005	5/19/2005
ET24-2005-145	JWST MIL Blanket B/O Batch #2	V-7	5/17/2005	5/23/2005
ET24-2005-146	RCC Crack Repair HTV	V-3	5/18/2005	5/21/2005
ET24-2005-147	RCC Crack Repair Ziplock Day Run	V-3	5/18/2005	5/18/2005
ET24-2005-148	Solar-B Cables/Feed Thru & Tape Cert	V-2	5/19/2005	5/23/2005
ET24-2005-149	Sun Spot Back Ground for AZ Tech Panels	SunSpot	5/20/2005	5/27/2005
ET24-2005-150	ECLSS Power Supply Module Depress Test	V-5	5/23/2005	5/24/2005
ET24-2005-151	ECLSS PSM Ascent Rate Chamber Check Out	V-5	5/23/2005	5/23/2005

**Final RFP NNM08125357R**

ET24-2005-152	RCC Crack Repair HTV-058, 061 & 068	V-3	5/23/2005	5/25/2005
ET24-2005-153	ECLSS PSM Thermal Humidity Test	TH-5	5/24/2005	5/26/2005
ET24-2005-154	JWST MLI Blankets B/O #3	V-7	5/24/2005	5/27/2005
ET24-2005-155	Boeing Pressure Wall Chamber Pump Down	V-20/PWC	5/26/2005	Not Recorded
ET24-2005-156	AZ Tech Prime D Structive T/V B/O	SunSpot	5/27/2005	6/7/2005
ET24-2005-157	ET TPS CAT 2 Test of CAT 3 2x2 Panel	V11	5/27/2005	5/27/2005
ET24-2005-158	ET TPS CAT 2 Test of CAT 3 2x2 Panel	V11	5/31/2005	5/31/2005
ET24-2005-159	JSWT MLI Blankets B/O #4	V-7	5/31/2005	6/6/2005
ET24-2005-160	RCC Crack Repair Thermal Vacuum Repair	V-3	6/1/2005	6/6/2005
ET24-2005-161	RCC Crack Repair - Repair ROCR 6A & 6B	V-3	6/6/2005	6/8/2005
ET24-2005-162	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	6/3/2005	6/6/2005
ET24-2005-163	GI TPS CAT 2 Test of CAT 1 2x2 Panel	V11	6/6/2005	6/8/2005
ET24-2005-164	JSWT MLI Blankets B/O #5	V-7	6/6/2005	6/9/2005
ET24-2005-165	AZ Tech Prime D Structive T/V B/O	Sun Spot	6/7/2005	6/13/2005
ET24-2005-166	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	6/8/2005	6/10/2005
ET24-2005-167	RCC Crack Re-pair; Atomic Oxygen Test	V-3	6/9/2005	6/9/2005
ET24-2005-168	ECLSS PSM Functional Test	TH-5	6/10/2005	6/10/2005
ET24-2005-169	Solar-B MLI Blankets B/O	V-9	6/10/2005	6/14/2005
ET24-2005-170	JSWT MLI Blankets B/O #6	V-7	6/13/2005	6/20/2005
ET24-2005-171	RCC Crack Repair; NOAX Vapor Deposition	V-3	6/14/2005	6/15/2005
ET24-2005-172	Solar-B Telescope MLI Blankets B/O WITOCM	V-2	6/14/2005	6/16/2005
ET24-2005-173	ECLSS PSM Thermal Humidity Test	TH-5	6/14/2005	6/16/2005
ET24-2005-174	RCC Crack Re-pair;	V-3	6/17/2005	6/17/2005
ET24-2005-175	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	6/20/2005	6/21/2005
ET24-2005-176	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	6/21/2005	6/22/2005
ET24-2005-177	AZ Tech Prime D Structive T/N Test	SunSpot	6/21/2005	6/25/2005
ET24-2005-178	JWST MLI Blanket B/O #7	V-7	6/21/2005	6/24/2005
ET24-2005-179	RCC Crack Repair	V-3	6/21/2005	6/21/2005
ET24-2005-180	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	6/22/2005	6/23/2005
ET24-2005-181	RCC Crack Repair; Plug Test	V-3	6/22/2005	6/23/2005

**Final RFP NNM08125357R**

ET24-2005-182	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	6/23/2005	6/24/2005
ET24-2005-183	RCC Crack Repair: Shelf Life Testing	V-3	6/23/2005	6/24/2005
ET24-2005-184	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	6/24/2005	Not Recorded
ET24-2005-185	RCC Crack Repair: Shelf Life Testing	V-3	6/24/2005	Not Recorded
ET24-2005-186	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	6/27/2005	6/28/2005
ET24-2005-187	JWST MLI Blankets B/O #8	V-7	6/27/2005	7/1/2005
ET24-2005-188	RCC Crack Repair	V-3	6/28/2005	6/28/2005
ET24-2005-189	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	6/28/2005	6/29/2005
ET24-2005-190	Orbital Express Advanced Video Guidance Sensor T/V Cycle	V-9	7/15/2005	7/21/2005
ET24-2005-191	RCC Crack Repair Ambient/Vacuum Test	V-3	6/29/2005	7/6/2005
ET24-2005-192	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	6/29/2005	6/30/2005
ET24-2005-193	ET TPS CAT 2 Test of CAT 3 2x2 Panel	V11	6/30/2005	6/30/2005
ET24-2005-194	MSRR Video Box Wire Harness B/O per 684	V-8	7/5/2005	7/8/2005
ET24-2005-195	AZ Tech Prime D Structure B/O	SunSpot	7/8/2005	7/15/2005
ET24-2005-196	ECLSS PSM T/H Test	TH-5	7/11/2005	7/19/2005
ET24-2005-197	RCC Crack Repair: Semco Tube Repress Test	V-3	7/11/2005	7/12/2005
ET24-2005-198	MSG Connectors B/O Per 548B	V-4	7/12/2005	7/15/2005
ET24-2005-199	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	7/14/2005	7/18/2005
ET24-2005-200	ROME Chamber Toxicity Test	ROME	7/14/2005	7/20/2005
ET24-2005-201	AZ Tech Prime D Structure T/V B/O	SunSpot	7/15/2005	7/29/2005
ET24-2005-202	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	7/18/2005	Not Recorded
ET24-2005-203	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	7/19/2005	7/20/2005
ET24-2005-204	Rome Chamber Load Test	ROME	7/19/2005	7/19/2005
ET24-2005-205	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	7/20/2005	7/21/2005
ET24-2005-206	ROME Chamber Toxicity Test	ROME	7/20/2005	7/25/2005
ET24-2005-207	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	7/25/2005	7/26/2005
ET24-2005-208	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	7/26/2005	7/27/2005
ET24-2005-209	Install Tqcm (RCC)	V-3	7/26/2005	10/5/2005
ET24-2005-210	OG Flight HW Toxicity Test	ROME	7/28/2005	8/9/2005
ET24-2005-211	RCC Crack Repair: Flight Tube Simulation	V-3	7/29/2005	7/30/2005

**Final RFP NNM08125357R**

ET24-2005-212	Summer Research Project	Cryo	8/1/2005	Not Recorded
ET24-2005-213	Orbital Express Advanced Video Guidance Sensor T/V Cycle	V-9	8/3/2005	8/8/2005
ET24-2005-214	RCC Crack Repair Training Video Clips	V-3	8/8/2005	8/9/2005
ET24-2005-215	RTF Vacuum Pipe Welding	ROME Jr	8/9/2005	10/5/2005
ET24-2005-216	OGS Flight HW Toxicity Test	ROME	8/9/2005	8/10/2005
ET24-2005-217	GLAST Burst Monitor Cable B/O Per 684	V-9	8/12/2005	8/16/2005
ET24-2005-218	GLAST Burst Monitor Cable B/O	V-4	8/12/2005	8/16/2005
ET24-2005-219	AZ Tech Prime D Structure T/V Test	SunSpot	8/16/2005	8/23/2005
ET24-2005-210	RCC Crack Repair: Dispense CRM	V-3	8/17/2005	8/17/2005
ET24-2005-221	AZ Tech Prime D Structure T/V Test	SunSpot	8/8/2005	8/16/2005
ET24-2005-221b	GLAST Burst Monitor EQM Test	V-6	8/16/2005	8/26/2005
ET24-2005-222	RCC Crack Repair: Repair 2 Dot Som	V-3	8/19/2005	8/22/2005
ET24-2005-223	Chamber Cycle Test	TA-1	8/23/2005	Not Recorded
ET24-2005-224	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	8/25/2005	8/26/2005
ET24-2005-225	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	8/26/2005	8/29/2005
ET24-2005-226	ET RTF Bi Pod Heater Plate Cycle Test	V-5	8/26/2005	8/30/2005
ET24-2005-227	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	8/29/2005	8/30/2005
ET24-2005-228	ET TPS CAT 2 Test of CAT 1 2x2 Panel	V11	8/30/2005	Not Recorded
ET24-2005-229	RCC Crack Repair: Training Video	V-3	8/31/2005	9/1/2005
ET24-2005-230	RCC Crack Repair: Wet Out Test	V-3	9/6/2005	9/7/2005
ET24-2005-231	Ku-Band Rate Sensor Assy. T/V Cycle Test	V-6	9/6/2005	9/8/2005
ET24-2005-232	RCC Crack Repair: Wet Out Test 24/7 10 Days	V-3	9/8/2005	9/18/2005
ET24-2005-233	Ku-Band DA 102 T/V Cycle Test	SunSpot	9/9/2005	9/13/2005
ET24-2005-234	Ku-Band Rate Sensor Assy. T/V Cycle Test	V-6	9/13/2005	9/15/2005
ET24-2005-235	Sun Spot Back Ground for AZ Tech Panel	SunSpot	9/14/2005	9/20/2005
ET24-2005-236	Rome Chamber Cert for ZIN Tech	ROME	9/15/2005	9/26/2005
ET24-2005-237	Fluid Fitting Devices, EVA Tool Thermal Vacuum Development Test	V-14	9/20/2005	9/30/2005
ET24-2005-238	AZ Tech Prime D Structure	SunSpot	9/23/2005	9/30/2005
ET24-2005-239	RCC Crack Repair: Working Life Studies	V-3	9/26/2005	10/15/2005
ET24-2005-240	Toxicity Test of ZIN FIR Flight Rack	ROME	9/26/2005	11/2/2005

**Final RFP NNM08125357R**

ET24-2005-241	EPB Qual Unit T/V Cycle Test	V-5	9/28/2005	Canceled
ET24-2005-242	RCC Crack Repair: SRI Sample Generation	V-3	10/7/2005	10/7/2005
ET24-2005-243	FFD T/V Development Test	V-14	10/7/2005	10/14/2005
ET24-2005-244	CiPA Tile Repair Material Background Test	V-9	10/12/2005	10/27/2005
ET24-2005-245	JR Lamp Ceramic Insulator B/O	V-4	10/17/2005	10/20/2005
ET24-2005-246	BiPod Heater Plate: Test & Eval. Analysis Cycle Test	V-5	10/19/2005	10/26/2005
ET24-2005-247	FFTD T/V DVE. Test (Ronz)	V-14	10/24/2005	10/27/2005
ET24-2005-248	ET RFT Foam Testing Buildup in V-11	V-11	10/24/2005	10/24/2005
ET24-2005-249	Toxicity Retest of ZIN FIR Flight Rack	ROME	10/26/2005	11/5/2005
ET24-2005-250	CIPA Tile Repair Material	V-9	10/31/2005	11/5/2005
ET24-2005-251	EPB Qual Unit T/V Cycle Test	V-5	11/2/2005	11/8/2005
ET24-2005-252	Chamber Background #2 for CIPA	V-9	11/7/2005	11/9/2005
ET24-2005-253	EPB Qual Unit T/H Cycle Test	TH-2	11/8/2005	11/11/2005
ET24-2005-254	MSRR Master Controller T/H Cycle Test	TH-1	11/14/2005	11/18/2005
ET24-2005-255	CIPA Tile Repair Material	V-9	11/14/2005	11/16/2005
ET24-2005-256	ET Bipod Heater - Phase 3	V-5	11/15/2005	11/16/2005
ET24-2005-257	ET Bipod Heater - Phase 3	V-5	11/16/2005	11/16/2005
ET24-2005-258	EPB Flight Unit SN001	TH-2	11/16/2005	11/17/2005
ET24-2005-259	ET Foam Testing Series F001 Buildup	V11	11/17/2005	11/28/2005
ET24-2005-260	RCC Crack Repairs: OBSS Sample Generation	V-3	11/29/2005	Not Recorded
ET24-2005-261	AC Test Series Dev for ET Foam Panels	V11	12/2/2005	12/3/2005
ET24-2005-262	ET Bipod Heater - Phase 3	V-5	12/8/2005	12/14/2005
ET24-2005-263	CIPA Test	V-9	12/12/2005	Not Recorded
ET24-2005-264	PAL-008-1B-AL-1 Test to PAL-00601	V11	12/13/2005	12/14/2005
ET24-2005-265	PAL-008-1B-AL-2 Test to PAL-00601	V11	12/14/2005	12/15/2005
ET24-2005-266	CIPA Test	V-9	12/15/2005	Not Recorded
ET24-2005-267	BiPod Heater Phase 3	V-5	12/15/2005	Not Recorded
ET24-2005-268	PAL-008-1B-AL-3 Test to PAL-00601	V11	12/16/2005	12/17/2005
ET24-2005-269	PAL-008-1B-AL-1 Test to PAL-00601	V11	12/17/2005	12/18/2005
ET24-2005-270	PAL-008-1B-AL-2 Test to PAL-00601	V11	12/19/2005	12/20/2005

**Final RFP NNM08125357R**

ET24-2005-271	BiPod Heater Phase 3	V-5	12/19/2005	Not Recorded
ET24-2005-272	RCC Crack Repair	V-3	12/20/2005	Not Recorded
ET24-2005-273	F001 Panel - Sample Test	V-11	12/21/2005	12/21/2005
ET24-2005-274	F001 - 01 Panel	V-11	12/21/2005	12/21/2005
ET24-2005-275	PAL-008-1B-AL-3 Test to PAL-00601	V11	12/22/2005	12/23/2005
ET24-FAC-0001	Pressure Wall Chamber Set Up	V-20	4/12/2005	4/28/2005
ET24-FAC-0002	Purge Line Modifications to V3	V-3	4/22/2005	4/26/2005
ET24-FAC-0003	Pressure Wall V-20 Valve & Plumbing c/o	V-20	4/28/2005	5/4/2005
ET24-FAC-0004	Scavenger Panel Replacement	V-3	5/5/2005	5/11/2005
ET24-FAC-0005	Blowers Removal	V-20	5/6/2005	10/5/2005
ET24-FAC-0006	Install Valve/Turbo Pump	Sunspot	5/8/2005	Not Recorded
ET24-FAC-0007	Fabricate AL VCR Fittings	Sunspot	5/12/2005	Not Recorded
ET24-FAC-0008	Fabricate Thermal Box GBM	V-6	5/12/2005	9/13/2005
ET24-FAC-0009	Fabricate Cold Plates GBM	Sunspot	5/16/2005	Not Recorded
ET24-FAC-0010	Fabricate Cold Plates ET	RAC	5/25/2005	6/6/2005
ET24-FAC-0011	Remove RGA from V20 Install on V2	V-2	6/14/2005	6/27/2005
ET24-FAC-0012	DP Water Coil Leak Repair or Replace	V-3	6/15/2005	6/21/2005
ET24-FAC-0013	Watlow Heater Control System	V-6	7/22/2005	9/13/2005
ET24-FAC-0014	RGA R&R	V-7	6/27/2005	7/25/2005
ET24-FAC-0015	Fab Washers and Cold Plates GBM	V-6	7/27/2005	Not Recorded
ET24-FAC-0016	Pump VJ Line on SS Cryofeed	Sunspot	7/27/2005	8/8/2005
ET24-FAC-0017	Fabricate Cold Plates	V-14	7/28/2005	Not Recorded
ET24-FAC-0018	Port Flange and TC's	V-6	8/8/2005	10/5/2005
ET24-FAC-0019	Fabricate Port Plates for Rome Jr	Rome Jr	8/8/2005	10/13/2005
ET24-FAC-0020	Connectorize GBM Cables	V-6	8/8/2005	8/16/2005
ET24-FAC-0021	Replace IR Lamps	Rome	8/15/2005	8/16/2005
ET24-FAC-0022	Bakeout Two Thermal Boxes	V-6	8/15/2005	8/16/2005
ET24-FAC-0023	TQCM Cable Buildup for V9	V-9	8/19/2005	9/23/2005
ET24-FAC-0024	Add Additional Pump to TA-1	TA-1	8/30/2005	Not Recorded
ET24-FAC-0025	Install V-7 Roughing Valve	V-7	9/12/2005	9/20/2005

**Final RFP NNM08125357R**

ET24-FAC-0026	Replace/Repair IR Limiter "Cold Side"	V-6	9/12/2005	9/20/2005
ET24-FAC-0027	Replace/Repair Microvac Water Flow	Sunspot	9/12/2005	9/20/2005
ET24-FAC-0028	TQCM Testing in V-9	V-9	9/12/2005	9/16/2005
ET24-FAC-0029	V2D 'Pump Maintenance	V-20	9/20/2005	9/21/2005
ET24-FAC-0030	Welder ReCert (Charlie A)	Facility	9/20/2005	9/22/2005
ET24-FAC-0031	Proof Test & ISS Rack B/O Support and Frame	Facility	10/26/2005	10/26/2005
ET24-FAC-0032	R&R 1 IR Bulb on Vertical Lamp Stack	Sunspot	10/28/2005	Not Recorded
ET24-FAC-0033	Chamber Activation	TH-6	11/7/2005	12/1/2005
ET24-FAC-0034	Chamber Activation	TH-7	11/7/2005	Not Recorded
ET24-FAC-0035	Construct Additional Shed		11/8/2005	Not Recorded
ET24-FAC-0036	Rewire Rome Elec Panel	Rome	11/8/2005	11/9/2005
ET24-FAC-0037	Troubleshoot and Repair V-9 TP Foreline Valve	V-9	11/9/2005	11/10/2005
ET24-FAC-0038	R&R Flange	V-11	11/9/2005	11/9/2005
ET24-FAC-0039	Training	V-4	11/14/2005	11/28/2005
ET24-FAC-0040	Training	V-8	11/14/2005	11/28/2005
ET24-FAC-0041	Electrical J-Box Maintenance	V-11	11/17/2005	11/17/2005
ET24-FAC-0042	Floor Grating Cover for Door Hoist	V-11	11/17/2005	11/18/2005
ET24-FAC-0043	Repair Chamber V-8	V-8	11/17/2005	Not Recorded
ET24-FAC-0044	Repair Sunspot LP 1-7 Receptacle	Sunspot	11/21/2005	Not Recorded
ET24-FAC-0045	Troubleshoot Repair Cooling Cart		11/28/2005	12/9/2005
ET24-FAC-0046	Operator Chamber Certificate JA	V-6	11/22/2005	12/2/2005
ET24-FAC-0047	Tighten Sunspot Vac Belts	Sunspot	11/23/2005	11/28/2005
ET24-FAC-0048	Turbo Pump/Pumping System Check	Sunspot	11/30/2005	12/6/2005
ET24-FAC-0049	Diffusion Pump Heater Element Replacement	V-3	11/30/2005	Not Recorded
ET24-FAC-0050	Boeing Built Cooling Carts Examination	Sunspot	11/30/2005	Not Recorded
ET24-FAC-0051	RC Operator Certificate	V-5	12/1/2005	12/2/2005
ET24-FAC-0052	DK Operator Certificate	V-4	12/1/2005	12/2/2005
ET24-FAC-0053	CB Operator Certificate	V-8	12/1/2005	12/2/2005
ET24-FAC-0054	DS Operator Certificate	V-2	12/1/2005	12/2/2005
ET24-FAC-0055	Replace Multi 20 AM Receptacle	Sunspot	Not Recorded	Not Recorded

**Final RFP NNM08125357R**

ET24-FAC-0056	SS Operator Certificate	TH-6	12/2/2005	12/5/2005
ET24-FAC-0057	TH Operator Certificate	TH-5	12/2/2005	12/2/2005
ET24-FAC-0058	CA Operator Certificate	V-7	12/2/2005	12/5/2005
ET24-FAC-0059	MS Operator Certificate	Sunspot	12/2/2005	12/7/2005
ET24-FAC-0060	CB Operator Certificate	V-4	12/2/2005	12/6/2005
ET24-FAC-0061	DK Operator Certificate	V-8	12/2/2005	12/6/2005
ET24-FAC-0062	RC Operator Certificate	V-6	12/2/2005	12/5/2005
ET24-FAC-0063	TH Operator Certificate	V-5	12/2/2005	12/6/2005
ET24-FAC-0064	JA Operator Certificate	TH-5	12/2/2005	12/7/2005
ET24-FAC-0065	DS Operator Certificate	TH-1	12/2/2005	12/5/2005
ET24-FAC-0066	JL Operator Certificate	TA-1	12/5/2005	12/5/2005
ET24-FAC-0067	JL Operator Certificate	TH-1	12/5/2005	12/5/2005
ET24-FAC-0068	JL Operator Certificate	TH-2	12/5/2005	12/5/2005
ET24-FAC-0069	JL Operator Certificate	TH-3	12/5/2005	12/5/2005
ET24-FAC-0070	JL Operator Certificate	TH-4	12/5/2005	12/5/2005
ET24-FAC-0071	JL Operator Certificate	TH-5	12/5/2005	12/5/2005
ET24-FAC-0072	JL Operator Certificate	TH-6	12/5/2005	12/5/2005
ET24-FAC-0073	JL Operator Certificate	TH-7	12/5/2005	12/5/2005
ET24-FAC-0074	JL Operator Certificate	TH-8	12/5/2005	12/5/2005
ET24-FAC-0075	JL Operator Certificate	TH-9	12/5/2005	12/5/2005
ET24-FAC-0076	DS Operator Certificate	V-7	12/5/2005	12/7/2005
ET24-FAC-0077	TH Operator Certificate	V-6	12/5/2005	12/6/2005
ET24-FAC-0078	CB Operator Certificate	V-2	12/5/2005	12/6/2005
ET24-FAC-0079	DK Operator Certificate	TH-1	12/5/2005	12/6/2005
ET24-FAC-0080	RC Operator Certificate	TH-5	12/5/2005	12/12/2005
ET24-FAC-0081	RC Operator Certificate	V-4	12/5/2005	12/7/2005
ET24-FAC-0082	JB Operator Certificate	V-8	12/5/2005	12/6/2005
ET24-FAC-0083	CA Operator Certificate	V-5	12/6/2005	12/6/2005
ET24-FAC-0084	SS Operator Certificate	V-7	12/6/2005	12/7/2005
ET24-FAC-0085	MS Operator Certificate	V-2	12/6/2005	12/7/2005

**Final RFP NNM08125357R**

ET24-FAC-0086	MS Operator Certificate	V-3	12/6/2005	12/7/2005
ET24-FAC-0087	MS Operator Certificate	V-4	12/6/2005	12/7/2005
ET24-FAC-0088	MS Operator Certificate	V-5	12/6/2005	12/7/2005
ET24-FAC-0089	MS Operator Certificate	V-6	12/6/2005	12/7/2005
ET24-FAC-0090	MS Operator Certificate	V-8	12/6/2005	12/7/2005
ET24-FAC-0091	MS Operator Certificate	V-9	12/6/2005	12/7/2005
ET24-FAC-0092	MS Operator Certificate	V-12	12/6/2005	12/6/2005
ET24-FAC-0093	MS Operator Certificate	TH-2	12/6/2005	12/20/2005
ET24-FAC-0094	MS Operator Certificate	V-14	12/6/2005	12/7/2005
ET24-FAC-0095	MS Operator Certificate	Rome	12/6/2005	12/7/2005
ET24-FAC-0096	MS Operator Certificate	V-20	12/6/2005	12/7/2005
ET24-FAC-0097	MS Operator Certificate	V-11	12/6/2005	12/7/2005
ET24-FAC-0098	MS Operator Certificate	V-7	12/8/2005	12/8/2005
ET24-FAC-0099	JB Operator Certificate	V-4	12/6/2005	12/7/2005
ET24-FAC-0100	RC Operator Certificate	V-8	12/6/2005	12/7/2005
ET24-FAC-0101	TH Operator Certificate	V-2	12/6/2005	12/7/2005
ET24-FAC-0102	CA Operator Certificate	TH-1	12/6/2005	12/16/2005
ET24-FAC-0103	CB Operator Certificate	TH-1	12/6/2005	12/8/2005
ET24-FAC-0104	DK Operator Certificate	V-5	12/6/2005	12/7/2005
ET24-FAC-0105	CA Operator Certificate	V-6	12/6/2005	12/7/2005
ET24-FAC-0106	Repair Solenoid	V-2	12/7/2005	Not Recorded
ET24-FAC-0107	JA Operator Certificate	TH-1	12/7/2005	12/12/2005
ET24-FAC-0108	JB Operator Certificate	Sunspot	12/7/2005	12/13/2005
ET24-FAC-0109	WL Operator Training	V-12	12/7/2005	Not Recorded
ET24-FAC-0110	WL Operator Training	BJ-1	12/7/2005	12/21/2005
ET24-FAC-0111	TH Operator Certificate	V-4	12/8/2005	12/8/2005
ET24-FAC-0112	TH Operator Certificate	V-8	12/9/2005	12/9/2005
ET24-FAC-0113	CA Operator Certificate	V-4	12/9/2005	Not Recorded
ET24-FAC-0114	CA Operator Certificate	V-8	12/8/2005	12/8/2005
ET24-FAC-0115	SS Operator Certificate	TH-2	12/7/2005	12/7/2005

**Final RFP NNM08125357R**

ET24-FAC-0116	DK Operator Certificate	V-2	12/8/2005	12/9/2005
ET24-FAC-0117	DS Operator Certificate	V-6	12/8/2005	12/8/2005
ET24-FAC-0118	SS Operator Certificate	V-5	12/8/2005	12/9/2005
ET24-FAC-0119	DK Operator Certificate	V-6	12/9/2005	12/9/2005
ET24-FAC-0120	CB Operator Certificate	V-5	12/8/2005	12/9/2005
ET24-FAC-0121	CB Operator Certificate	V-6	12/8/2005	12/20/2005
ET24-FAC-0122	DS Operator Certificate	V-5	12/8/2005	12/22/2005
ET24-FAC-0123	T/S & Repair Cryo R/L	Sunspot	12/8/2005	12/13/2005
ET24-FAC-0124	JB Operator Certificate	TH-3	12/9/2005	12/20/2005
ET24-FAC-0125	TH Operator Certificate	TH-1	12/10/2005	12/12/2005
ET24-FAC-0126	RC Operator Certificate	V-2	12/12/2005	12/21/2005
ET24-FAC-0127	SS Operator Certificate	V-6	12/12/2005	12/21/2005
ET24-FAC-0128	DK Operator Certificate	TH-5	12/12/2005	12/12/2005
ET24-FAC-0129	JA Operator Certificate	V-4	12/12/2005	Not Recorded
ET24-FAC-0130	JA Operator Certificate	V-8	12/12/2005	12/12/2005
ET24-FAC-0131	DK Operator Certificate	V-7	12/13/2005	12/22/2005
ET24-FAC-0132	WL Operator Training	V-8	12/13/2005	12/22/2005
ET24-FAC-0133	GBM T/Cs Fabrications	Sunspot	12/15/2005	12/23/2005
ET24-FAC-0134	GBM Coldplate Fabrication	Sunspot	12/15/2005	12/23/2005
ET24-FAC-0135	GBM Port Plate	Sunspot	12/20/2005	12/21/2005
ET24-FAC-0136	CA Operator Certificate	TH-3	12/20/2005	12/21/2005
ET24-FAC-0137	JB Operator Certificate	TH-1	12/19/2005	12/20/2005
ET24-FAC-0138	JB Operator Certificate	TH-5	12/20/2005	12/22/2005
ET24-FAC-0139	JA Operator Certificate	V-2	12/20/2005	12/20/2005
ET24-FAC-0140	CB Operator Certificate	V-9	12/20/2005	12/20/2005
ET24-FAC-0141	DS Operator Certificate	Sunspot	12/21/2005	12/21/2005
ET24-FAC-0142	JA Operator Certificate	V-9	12/21/2005	12/27/2005
ET24-FAC-0143	CA Operator Certificate	V-2	12/22/2005	12/22/2005
ET24-FAC-0144	SS Operator Certificate	V-8	12/21/2005	12/22/2005
ET24-FAC-0145	JA Operator Certificate	V-7	12/22/2005	Not Recorded

**Final RFP NNM08125357R**

ET24-FAC-0146	SS Operator Certificate	V-2	12/22/2005	2/1/2006
ET24-FAC-0147	CA Operator Certificate	V-9	12/23/2005	1/3/2006
ET24-FAC-0148	TH Operator Certificate	V-3	1/30/2006	2/1/2006
ET24-FAC-0149	JB Operator Certificate	V-6	12/23/2005	1/3/2006
ET24-FAC-0150	Clean Chamber/Install Lamp Array	V-9	12/23/2005	1/3/2006
ET24-FAC-0151	RC Operator Certificate	V-9	12/22/2005	12/27/2005
ET24-FAC-0152	SS Operator Certificate	V-9	12/22/2005	12/23/2005
ET24-FAC-0153	V-7 Cryopump Readouts	V-7	12/22/2005	12/23/2005
ET24-FAC-0154	LN2 Shroud Modification	Sunspot	12/23/2005	Not Recorded
ET24-FAC-0155	Fabricate Vent Port Flange	Sunspot	12/28/2005	1/9/2006
ET24-FAC-0156	Repair/Replace SD on Cryo #1	V-7	12/28/2005	Not Recorded

<b>ETF HISTORICAL TEST DATA (2004)</b>				
<b>TPS Number</b>	<b>Project</b>	<b>Chamber</b>	<b>Start Date</b>	<b>End Date</b>
ED26-2004-01	MSRR VAS Shelf Assy Leak Test	V5	1/7/2004	1/8/2004
ED26-2004-02	Disassemble/Move/Upgrade Chamber	V3	1/12/2004	1/14/2004
ED26-2004-03	ISS Cargo Int. TVS RA FSE Heater Mat Assem & Electrical C/O Test	V5	1/12/2004	1/25/2004
ED26-2004-04	Deep Space Test Bed / Solar Panel T/V Test	V6	1/14/2004	1/15/2004
ED26-2004-05	MSRR-1 Cabled B/O per 684	V9	1/23/2004	1/28/2004
ED26-2004-06	RFTA Assembly Leak Test	V6	1/29/2004	1/30/2004
ED26-2004-07	X-37 IRA & HAD Qual Test	TA-1	1/30/2004	2/19/2004
ED26-2004-08	Bolt Shock Conditioning Test	V9	2/2/2004	2/17/2004
ED26-2004-10	ECLSS-UPA-DA Backshell B/O per 548B	V8	2/23/2004	2/27/2004
ED26-2004-12	FHRC FSE (CR 8248) ReTest S/N001	Rome	3/2/2004	3/9/2004
ED26-2004-13	New Cable Bakeout	V9	3/4/2004	3/9/2004
ED26-2004-15	UPA / FCA Data Module Ascent Rate Test	V5	3/17/2004	3/18/2004
ED26-2004-16	Deep Space Test Bed / Solar Panel T/V Test	V6	3/10/2004	3/12/2004
ED26-2004-18	Node 2 Lanyard Restraint Vacuum B/O	V4	3/11/2004	3/17/2004
ED26-2004-19	Node 2 Lanyard Restraint Vacuum B/O	V8	3/11/2004	3/19/2004
ED26-2004-20	Chamber Background Certification	V9	3/12/2004	3/22/2004
ED26-2004-21	Chamber Bakeout	V11	3/12/2004	3/22/2004
ED26-2004-22	Deep Space Test Bed / Solar Panel T/V Test	V6	3/18/2004	3/19/2004
ED26-2004-23	UPA / FCA Data Module Ascent Rate Test	TA-1	3/18/2004	3/18/2004
ED26-2004-24	ECLSS RFTA Assembly Leak Test	V5	3/18/2004	3/18/2004
ED26-2004-25	Load Cell (ET TSE)	V12	3/18/2004	3/18/2004
ED26-2004-26	Node 2 Lanyard Restraint Vacuum B/O	V9	3/22/2004	4/2/2004
ED26-2004-27	ISS NPV	V6	3/22/2004	3/30/2004

**Final RFP NNM08125357R**

ED26-2004-28	MPLM T/V Acceptance Test	V5	4/3/2004	4/14/2004
ED26-2004-29	Deep Space Test Bed / Solar Panel T/V Test	V6	4/14/2004	4/16/2004
ED26-2004-30	AZT Prime D Structure B/O	SunSpot	4/15/2004	4/19/2004
ED26-2004-31	ECLSS RFTA Assembly Leak Test	V5	4/14/2004	4/14/2004
ED26-2004-32	AFM MLI Chamber Certification	V7	4/23/2004	4/26/2004
ED26-2004-33	ECLSS FCPA Assembly Proof Test	V5	4/25/2004	4/26/2004
ED26-2004-34	Deep Space Test Bed / Solar Panels - Sun Cat Panel	V6	4/29/2004	4/29/2004
ED26-2004-35	AFM-MLI Blankets T/V Bakeout	V7	4/30/2004	4/30/2004
ED26-2004-36	WSTA (ECLSS) Leak Check	V5	4/30/2004	4/30/2004
ED26-2004-37	Deep Space Test Bed / Solar Panels - Sun Wise Test	V6	5/3/2004	5/5/2004
ED26-2004-38	ECLSS WSTA Air Side Leak Test	V5	5/4/2004	5/4/2004
ED26-2004-39	Deep Space Test Bed - Sun Cat #1 T/V Test	V6	5/11/2004	5/12/2004
ED26-2004-40	UPA-WSTA Thermal Cycle Test	TH-3	5/18/2004	6/2/2004
ED26-2004-41	AZT Prime D Structure T/V B/O	SunSpot	6/7/2004	6/14/2004
ED26-2004-42	ECLSS Test & Leak Test OF Distillation Assy	V5	6/7/2004	6/8/2004
ED26-2004-43	Deep Space Test Bed - Sunwise T/V Test	V6	6/10/2004	6/10/2004
ED26-2004-44	UPA, Post WSTA Thermal Leak Test	TH-3	5/18/2004	6/2/2004
ED26-2004-46	SSME Nozzle Aft Manifold Test	V6	6/14/2004	6/18/2004
ED26-2004-47	ET Camera Battery Thermal Cycle Test	TH-5	6/17/2004	6/21/2004
ED26-2004-48	MPLM Thermal Vacuum Acceptance Test	V5	6/17/2004	6/24/2004
ED26-2004-50	Post Vib ECLSS Leak Test SPA Assy	V5	6/28/2004	6/28/2004
ED26-2004-51	Leak Test WSTA Air Bellows Post Therm	V5	6/29/2004	6/29/2004
ED26-2004-52	GEDS - Tantalum Rod	V8	6/29/2004	7/1/2004
ED26-2004-53	ET Camera Battery Thermal Cycle Test	TH-5	6/30/2004	7/13/2004
ED26-2004-54	ECLSS UPA PCPA Proof Test	V6	7/9/2004	7/9/2004
ED26-2004-55	MPLM Acceptance Test	V5	7/9/2004	7/15/2004
ED26-2004-56	Tantalum Rod T/V Bakeout	V8	7/9/2004	7/15/2004
ED26-2004-57	Orbiter RCC Repair Process Trial / Crack Repair	V3	7/9/2004	7/30/2004
ED26-2004-58	ECLSS ORU Leak Test PCPA Assy	V6	7/12/2004	7/13/2004
ED26-2004-59	Chamber V7 Cert for AFM MLI	V7	7/16/2004	7/20/2004
ED26-2004-60	AF&M MLI Blanket T/V Bakeout	V7	7/20/2004	7/27/2004
ED26-2004-61	OBSS Pyro Initiator Controller Card T/V B/O	V9	7/21/2004	7/24/2004
ED26-2004-62	Aluminum SACA head for GEDS T/V B/O	V4	7/22/2004	7/27/2004
ED26-2004-63	FRAM MAPA Acceptance Test	SunSpot	7/22/2004	7/30/2004
ED26-2004-64	Chamber V9 Bakeout	V9	7/26/2004	7/28/2004
ED26-2004-65	AF&M MLI Blanket T/V Bakeout	V7	8/3/2004	8/20/2004
ED26-2004-66	Orbiter Repair Deliquification Test	V3	8/3/2004	1/14/2005
ED26-2004-67	Bolt Shock Conditioning Test	TH-9	8/4/2004	8/10/2004
ED26-2004-68	GEDS Graphite Components Bakeout	V4	8/11/2004	8/13/2004
ED26-2004-69	MSRR-S Cable Bakeout	V8	8/11/2004	8/13/2004
ED26-2004-70	GEDS 3 Copper Probe Pieces Bakeout	V4	8/13/2004	8/16/2004
ED26-2004-71	ECLSS Post Vibe Leak Test for PCPA Assembly	V5	8/16/2004	8/23/2004
ED26-2004-72	Urine Processor Assembly Pressure Control & Pump Assembly	TH-5	8/18/2004	8/20/2004
ED26-2004-73	FRAM / LAPA Acceptance Test	SunSpot	8/10/2004	9/10/2004
ED26-2004-75	AF&M MLI Blanket T/V Bakeout	V7	8/23/2004	8/26/2004
ED26-2004-76	ECLSS Post Vibe Leak Test of DA Distillation Assembly	V5	8/24/2004	8/25/2004
ED26-2004-77	UPA DA Thermal Cycle Test	TH-5	8/25/2005	9/1/2004
ED26-2004-78	ECLSS Post Thermal PCPA Leak Test	V5	8/26/2004	8/30/2004

**Final RFP NNM08125357R**

ED26-2004-79	ECLSS ORU Level Leak Test of FCPA	V5	8/31/2004	8/31/2004
ED26-2004-80	ET Return To Flight 9 Volt Battery Test	V9	9/1/2004	9/8/2004
ED26-2004-81	AF&M MLI Blanket Bakeout	V7	9/1/2004	9/4/2004
ED26-2004-82	Post Thermal Leak Test of DA	V5	9/2/2004	9/2/2004
ED26-2004-83	Thermal Vacuum Bakeout of GEDS Bracket	V4	9/2/2004	9/7/2004
ED26-2004-84	GEDS Thermal Shield Strip Probe B/O	V4	9/7/2004	9/10/2004
ED26-2004-86	SSME Nozzle Aft Manifold Test	V6	9/7/2004	9/10/2004
ED26-2004-87	SRB Cold Induced Environment Qual Test	TH-9	11/4/2004	11/17/2004
ED26-2004-88	FHRC FSE Heater Mat Assy	Rome	9/20/2004	9/22/2004
ED26-2004-89	FHRC FSE Heater Mat Assy	SunSpot	9/22/2004	10/2/2004
ED26-2004-90	Tantalum Foil Circular Shield B/O	V8	9/28/2004	10/1/2004
ED26-2004-91	GEDS SACA Head Hi Plated	V4	9/28/2004	10/1/2004
ED26-2004-92	SSME Nozzle Aft Manifold Abiative Test	V9	10/2/2004	10/5/2004
ED26-2004-93	ECLSS WRS-1 Faceplate T/V Proof Test	V6	10/7/2004	10/8/2004
ET24-2004-94	SSME Nozzle Aft Manifold T/V Cycle Test	V9	10/14/2004	10/29/2004
ET24-2004-95	ETDF1 Relay Assembly Qual & Acceptance Test	TH-5	10/14/2004	10/16/2004
ET24-2004-96	CMG Thermal Vacuum Test	V6	10/18/2004	10/21/2004
ET24-2004-97	Rome Chamber Bakeout	Rome	10/28/2004	11/8/2004
ET24-2004-99	ET RTF DFI Signal Conditioner	TH-5	11/3/2004	11/4/2004
ET24-2004-100	KU-Band Deployed Assembly Acceptance Test	SunSpot	11/2/2004	11/10/2004
ET24-2004-101	FHEC FSE Heater Mat Assembly	Rome	11/9/2004	11/17/2004
ET24-2004-103	WRS-1 Faceplate Rack 1 Depress Test	V7	11/10/2004	11/12/2004
ET24-2004-104	AZT Prime D Structure T/V B/O	SunSpot	11/16/2004	11/22/2004
ET24-2004-105	LMSS / MSFC Development and Checkout	V11	9/1/2004	12/13/2004
ET24-2004-106	Loctite Bolt Leakage Test Samples	Leak Detector	11/23/2004	11/23/2004
ET24-2004-107	ET RTF DFI Relay Assembly & Signal Conditioner Acceptance Test	TH-5	12/1/2004	12/2/2004
ET24-2004-108	Deep Space Test Bed / Solar Panels T/V	V6	12/2/2004	12/3/2004
ET24-2004-109	Rapid Pumpdown Revision A	Rapid P-Down	12/3/2004	12/13/2004
ET24-2004-110	Verification of Chamber V11 FAP	V11	12/3/2004	12/7/2004
ET24-2004-111	Loctite Bolt Leakage Test	Leak Detector	12/6/2004	12/7/2004
ET24-2004-112	ECLSS, OGS Faceplate Rack 3 Depress / Repress	V7	12/8/2004	12/9/2004
ET24-2004-113	ECLSS Baseline Leak Test for FCPA	V5	12/10/2004	12/10/2002
ET24-2004-114	ECLSS Proof test of the DA Assembly	V5	12/11/2004	12/11/2004
ET24-2004-115	External Tank TPS CAT 2 Test Using CAT 1 2x2 Panels	V11	12/14/2004	12/20/2004
ET24-2004-116	External Tank TPS CAT 2 Test Using CAT 1 2x2 Panels	V11	1/7/2005	1/7/2005
ET24-2004-117	External Tank TPS CAT 2 Test Using CAT 1 2x2 Panels	V11	12/10/2004	12/20/2004
ET24-2004-118	External Tank TPS CAT 2 Test Using CAT 1 2x2 Panels	V11	1/12/2005	1/13/2005
ET24-2004-	External Tank TPS CAT 2 Test Using CAT 1 2x2 Panels	V11	12/16/2004	12/20/2004

**Final RFP NNM08125357R**

119				
ET24-2004-120	External Tank TPS CAT 2 Test Using CAT 1 2x2 Panels	V11	1/13/2005	1/13/2005
ET24-2004-121	External Tank TPS CAT 2 Test Using CAT 1 2x2 Panels	V11	1/11/2005	1/12/2005
ET24-2004-122	External Tank TPS CAT 2 Test Using CAT 1 2x2 Panels	V11	12/15/2004	12/20/2004
ET24-2004-123	WRS-UPA Fluid control & Pump Assy T/C Test	TH-5	12/15/2004	12/17/2004
ET24-2004-124	ECLSS ORU Level Leak Test Post Vibe of FCPA	V5	12/14/2004	12/14/2004
ET24-2004-125	Deep Space Test Bed / Solar Panels T/V	V6	12/16/2004	12/16/2004
ET24-2004-126	ECLSS DA Assy Leak Test	V5	12/15/2004	12/17/2004
ET24-2004-127	ECLSS FCPA Post Thermal Leak Test	V5	12/20/2004	12/20/2004
ET24-2004-128	MSRR Leak Test Flight MSSR VAS Shelf Assy	V5	12/20/2004	12/21/2004

**Historical Data of EFDTF Test Support - The following historical test data is for informational purposes only. The data provides the facility in which test was performed, the test series title, and the time frame for providing the test.**

Aerodynamic Research Facility

LM OSP	January 2003 – February 2003
STS flow visualization	March 2003 – April 2003
ET pressure distribution	May 2003 – August 2003
LM-OSP	July 2003 – September 2003
ET cable tray	August 2003 – October 2003
LM-OSP	November 2003 – December 2003
Boeing OSP	January 2004 – March 2004
Gravity Probe B	April 2004 – May 2004
P2462	March 2005 – April 2005
P2458	August 2005 – September 2005
P2480	September 2005 – October 2005
OSP	February 2006 – April 2006
CLV	May 2006 – April 2007

Nozzle Test Facility

Altitude Compensating Nozzle Testing	February 2002 - May 2002
Wall bounded Jet test	May 2003 – July 2003
Nozzle Side Load CDDF Testing	January 2004 - May 2004
Air Flow liner Test	June 2004 - September 2004
Shuttle Nozzle Induced Flow Testing	January 2005 - April 2005
HPFTP Knife Edge Seal Test	May 2006 - September 2006
Nozzle Side Load CDDF Testing	October 2006 – April 2007

Air Flow Turbine Test Facility

Taft Turbine	January 2003 –December 2003
--------------	-----------------------------

Final RFP NNM08125357R

Turbine Airflow Test (TAFT)	May 2003 - September 2003
Turbine Performance Optimization (TPO) Testing	February 2003 - April 2003
Turbine Performance Optimization (TPO) Testing	June 2004
Turbine Performance Optimization (TPO) Testing	October 2004 - November 2004
Optimize retest	May 2005 – September 2005
DRS rotor test	January 2006 – February 2006

Water Flow Inducer Test Facility

LOX pump	January 2003 – September 2003
Cobra inducer	October 2003 – November 2003
RS-84 Performance	January 2004 – April 2004
LPFTP Flow liner	February 2004 – August 2004
Flow liner Angulations	November 2004- January 2005
LP Fuel inlet	February 2005 – May 2005

Water Flow Pump Test Facility

Reciprocating Feed system	June 2005 – September 2005
Upper stage engine	May 2006 – July 2006

**III. WBS Element 2.3 Structural Test Support - The following historical test data is for informational purposes only. The data provides the test facility and the approximate number of tests performed at the facility during the past three years.**

Load Test Annex (LTA) Crosshead, Bldg 4619

Under Refurbishment

Load Test Annex Extension (LTAE) East High Bay, Bldg 4619

4 Tests from January 2004 – December 2006

20 ft Universal Test Frame

4 Tests from January 2004 – December 2006

10 ft Generic Test Cube

15 Tests from January 2004 – December 2006

Multi Purpose Test Fixture

35 Tests from January 2004 – December 2006

120 klb SATEC Tensile Test Machine, Bldg 4619:

20 Tests from January 2004 – December 2006

260 klb Instron Tensile Test Machine, Bldg 4619:

Newly Installed

2M lbf Tensile Test Machine, Bldg 4619:

Newly Installed

Gilmore Tensile Test Machine, Bldg 4619:

200 Tests from January 2004 – December 2006

Cryogenic Structural Test Facility, Building 4699:

Under Refurbishment

Vibration Test Facility, Bldg. 4619 East Side:

16 Tests from January 2004 – December 2006

Vibration Test Facility, Bldg. 4619 West Side:

130 Tests from January 2004 – December 2006

Pyroshock Test Facility, Bldg. 4619:

23 Tests from January 2004 – December 2006

Anechoic Acoustic Test Facility, Bldg. 4619:

8 Tests from January 2004 – December 2006

Reverberation Acoustic Test Facility, Bldg. 4619:

13 Tests from January 2004 – December 2006

Modal Test Facility, Bldg. 4619

36 Tests from January 2004 – December 2006

Structural Dynamic Test Facility, Building 4550:

Under Refurbishment

**IV. WBS Element 2.4 Fabrication and Assembly of R&D Space Flight and Associated Hardware**

No Test data

**V. WBS Element 2.5 Electrical Fabrication, Test, and Assembly**

No Test data

VI. WBS Element 2.6 Reserved

[END OF ATTACHMENT L-8]

ATTACHMENT L-9

**HISTORICAL SKILL MIX**

While the historical data is provided for understanding the past operations, the Government is highly encouraging innovative solutions for accomplishing future work.

Note: The following historical staffing levels are provided as information only and must not be assumed as indicating that a level-of-effort will result from this solicitation. Offerors should note that the Government is looking for new and innovative uses of proven industry best practices to fulfill these requirements, and are allowed to propose any labor categories they deem necessary to accomplish contract requirements. If new or additional labor categories are proposed, the contractor shall provide a cross reference to the Government-identified labor category position descriptions.

<b>Labor</b>	<b>Fabrication Services NAS8-02115</b>	<b>MTAE NAS8-01050</b>
Engineering Technician I		
Engineering Technician II		5
Engineering Technician III		20
Engineering Technician IV		9
Eng Tech IV – Tech Lead		1
Engineering Technician V		1
Contract Operations		1
Precision Clean Technician	2	
Test Coordinator		1
Safety/Training Officer	1	1
Sr. Systems Engineer		1
Design Drafter IV		3
Operations Manager - Technical Lead		1
Mechanical Engineer		1
Engineer		2
Quality Assurance – Team Lead	1	
Sr. Engineer		2
Chemist	1	4
Program Manager	1	1
Deputy PM/Senior Physicist		1
Laboratory Technician		2
Sr. Lead Data Analyst		1
Machinist	18	1
Machine Tool Operator		2
Team Lead – Machine Shop	1	

**Final RFP NNM08125357R**

<b>Labor</b>	<b>Fabrication Services NAS8-02115</b>	<b>MTAE NAS8-01050</b>
Tools and Parts Attendant	2	
Inspector Electrical Shop		
MFG Process Planner (Productivity)	1	
MFG Process Planner Electrical Lead	1	
Secretary III		1
Team Lead – Accounting & Administration	1	
Accounting Clerk II	1	
Accounting Clerk III	1	
Senior Technical Writer		1
Technical Writer		1
Task Coordinator		1
Technical Coordinator I		1
Senior Scientist		1
Senior Physicist		1
Library Technician		1
Sr. Research Advisor		0
Research Support Assistant		1
Welder Lead	1	
Welder	2	
Sheet Metal Lead	1	
Inspector - Electro - Mechanical	6	
Inspector - Electro - Mechanical - Lead	1	
Electrical Mechanic	3	
Maintenance Mechanic	3	
NC Programmer	1	
MFG Process Planner	3	
MFG Process Planner - Lead	1	
Production Control - Lead	1	
Production Scheduler	2	
Scheduler - Expeditor	1	
Purchaser Lead	1	
Surface Treater Lead	1	
Surface Treater	3	
<b>Total</b>	<b>63</b>	<b>70</b>

The data below is for information only. This data attempts to map the distribution of the technician, trades, and professional staffing and skill mix on the current contracts against the WBS 2.0 sections. The table above includes all staffing on the current contracts. Due to the transfer of some work content from the current contract that will not be

included in the METTS contract, and that management is not accounted for in the table below, the summary staffing levels between the previous table and the following assessment are different. The Offeror should not infer that this is necessarily the optimum staffing and skill mix and the Government cautions that it is looking for innovative solutions to optimize skill mix and staffing levels.

**I WBS Element 2.1 Materials Testing**

<u>Labor Category</u>	<u>WYE</u>
Engineering Technician II	2
Engineering Technician III	0.5 (Shared with 2.10)
Engineering Technician IV	1
Machinist	1
Safety/Training Officer	1
Chemist	1
Technical Writer	1
Senior Engineer	1
Engineer	1
Total	9.5

**II WBS Element 2.2 ETF/EFDTF Test Support**

<u>Labor Category</u>	<u>ETF WYE</u>	<u>EFDTF WYE</u>	<u>Total</u>
Engineering Tech II	0	1	1
Engineering Tech III	8	1	9
Engineering Tech IV	3	1	4
Engineering Tech V	0	1	1
Engineer	1	0	1
Test Coordinator	1	0	1
Tech Lead / Ops Manager	0.5	0.5	1

**III WBS Element 2.3 Structural Test Support**

<u>Labor Category</u>	<u>WYEs</u>
Engineering Tech III	7
Engineering Tech IV	2
Engineering Tech IV – Technical Lead	1

**IV WBS Element 2.4 Fabrication and Assembly of R&D Space Flight and Associated Hardware**

<u>Labor Category</u>	<u>WYEs</u>
Quality Assurance Manager (exempt)	10

**Final RFP NNM08125357R**

Quality Control/Assurance	
Quality Control (mechanical inspector)	
Laboratory Technician	
Safety/Training Specialist	
Manufacturing Process Planner/Estimator/Lead	4
Production Control	4
Production Scheduler	
Material Expediter	
Metal Cleaner, Immersion	6
Painter	
Aerospace Structural Welder/Lead	3
Welder, Combination	
Machinist/Shop	26
Maintenance Trades Helper	
Machinery Maintenance Mechanic	
Machinist	
Sheet-metal Worker	
CNC Programmer	
Electronics Technician Maintenance	
Tool and Die Maker/Tool and Parts Attendant	
Producibility (exempt)	1

Notes:

- The above historical staffing reflects both Mission Services and IDIQ work. For purposes of the METTS requirement, Offerors can assume the Mission Services effort (PWS 2.4) will be approximately 30% of the historical staffing. Offerors can assume that the remaining required support for PWS 2.4 will be obtained through an IDIQ Task Order under PWS 3.4 at the onset of the contract.
- The current Fabrication and Assembly of R&D Space Flight and Associated Hardware contract is not governed by the Service Contract Act (SCA). The previous list is an attempt to map existing work responsibilities to the Wage Determination categories where applicable.

**V WBS Element 2.5 Electrical Fabrication, Test and Assembly**

<u>Labor Category</u>	<u>WYEs</u>
Electronics Mechanic, Grade 10	1
Electronics Mechanic, Grade 8	2
Engineering Technician III	1
Engineering Technician IV	1
Planner/Lead (exempt)	1

Notes:

- The above historical staffing reflects both Mission Services and IDIQ work. For purposes of the METTS requirement, Offerors can assume the Mission Services effort (PWS 2.5) will be approximately 65% of the

historical staffing. Offerors can assume that the remaining required support for PWS 2.5 will be obtained through an IDIQ Task Order under PWS 3.5 at the onset of the contract.

- The current Fabrication and Assembly of R&D Space Flight and Associated Hardware contract is not governed by the Service Contract Act (SCA). The previous list is an attempt to map existing work responsibilities to the Wage Determination categories where applicable.

**VI WBS Element 2.6 Reserved**

**VII WBS Element 2.7 Space Environmental Effects Testing**

<u>Labor Category</u>	<u>WYE</u>
Mechanical Engineer	1
Physicist	2
Chemist	1
Engineering Technician IV	1
Engineering Technician III	1
Total	6

**VIII WBS Element 2.8 Soil Moisture Testing**

<u>Labor Category</u>	<u>WYE</u>
Engineering Technician II	1
Total	1

**IX WBS Element 2.9 Environmental Gas Lab Support**

<u>Labor Category</u>	<u>WYE</u>
Engineering Technician II	1
Engineering Technician III	0.5 (Shared with 2.1)
Laboratory Technician	2
Chemist	1
Total	4.5

**X WBS Element 2.10 Computer Aided Design Drawing**

<u>Labor Category</u>	<u>WYE</u>
Design/Drafter IV	3
Library Technician	1
Total	4

**XI WBS Element 2.11 Data Analysis and Database Entry into MAPTIS**

<u>Labor Category</u>	<u>WYE</u>
Data Analyst	1
Total	1

**XII WBS Element 2.12 Optics Support**

<u>Labor Category</u>	<u>WYE</u>
Engineering Technician III	1
Total	1

**XIII WBS Element 2.13 Tool Crib Operation**

<u>Labor Category</u>	<u>WYE</u>
Machine Tool Operator	2
Total	2

**[END OF ATTACHMENT L-9]**

ATTACHMENT L-10

**HISTORICAL IT APPLICATION SEAT AVAILABILITY**

The following data is provided to show the current number of seats the Government procures and provides for various software applications used in accomplishing the work defined in the PWS. The table below shows the seat availability. These seats are used by both contractor and civil service personnel.

<b>System</b>	<b>Historical Seat Subscriptions</b>
MicroStation® CAD	1
“Micro” from Estimating Systems, Inc™	5
SolidWorks® by SolidWorks Corporation	3
CribMaster™	3
VISUAL Enterprise 6.3.8	50
Delmia	2
ICAM Software	2
CATIA v5	2

[END OF ATTACHMENT L-10]

ATTACHMENT L-11

**SAMPLE AWARD FEE EVALUATION PLAN**

# Sample MSFC Award Fee Plan

## Marshall Engineering Technicians and Trades Support (METTS) Services Contract

**MSFC SAMPLE AWARD FEE PLAN**

**Marshall Engineering Technicians and Trades Support (METTS) Services  
Contract**

**CONTRACTOR: *TBD***

**CONTRACT: NNM08XXXXC**

**SUBMITTED BY:**

\_\_\_\_\_  
Coordinator/Contracting Officer's  
Technical Representative (COTR)

\_\_\_\_\_  
Contracting Officer

Date: \_\_\_\_\_

Date: \_\_\_\_\_

CONCURRENCE:

\_\_\_\_\_  
Director, Engineering Directorate

Date: \_\_\_\_\_

APPROVAL:

\_\_\_\_\_  
Chairman, MSFC Performance  
Evaluation Board

Date: \_\_\_\_\_

<b><u>TABLE OF CONTENTS</u></b>	<b><u>Page</u></b>
A. INTRODUCTION . . . . .	4
1. Purpose. . . . .	4
2. Summary . . . . .	4
3. Fee Evaluation. . . . .	6
4. Appointment Letter. . . . .	6
5. IDIQ Technical Monitors . . . . .	6
B. EVALUATION CRITERIA DEFINITION. . . . .	6
1. Contract Management Performance. . . . .	6
2. Technical Performance . . . . .	7
3. Cost Control. . . . .	8
4. Award Fee Provision. . . . .	9
C. EVALUATION METHODOLOGY . . . . .	10
1. Evaluation Mechanics . . . . .	10
2. Ratings. . . . .	10
3. PEB Evaluation. . . . .	10
D. CONTRACTOR'S REPORTING REQUIREMENTS . . . . .	10
ATTACHMENTS	
Attachment 1   Monitor Appointment Letter . . . . .	11
ILLUSTRATIONS	
Figure 1       CPAF Organization Chart . . . . .	12
Table 1        CPAF Contract Grading Table . . . . .	13

A. INTRODUCTION

1. Purpose

This sample Plan, adopts the process and principles stipulated in the Marshall Space Flight Center (MSFC) Work Instruction (MWI) 5116.1D, "Evaluation of Contractor Performance Under Contracts with Award Fee Provisions," provides guidelines and defines the criteria and methodology for evaluating the performance of the Marshall Engineering Technicians and Trades Support (METTS) Services, under contract NNM08XXXXC.

This sample Award Fee Evaluation plan describes the criteria that will be used to determine the amount of award fee earned under the contract for each evaluation period.

Evaluation for fee purposes will be conducted at 6-month intervals from the date of contract award. These defined intervals do not preclude more frequent discussions concerning performance in these areas. The evaluation shall be conducted and presented within one report covering all work being done under the contract.

2. Summary

a. Description of Contract

The Contractor shall provide the planning, coordination, technical direction, and surveillance of the activities necessary to ensure disciplined performance of work and timely and efficient application of resources for the accomplishment of all WBS elements issued under the contract. The Contractor shall be responsible for maintaining communication with each supported organization and alerting the Contracting Officer's Technical Representative (COTR) and Contracting Officer (CO) immediately of any problems that would prevent meeting established objectives. The contractor will be evaluated in the following areas:

- **Contract Management (includes Safety and Health)**
  - Management Information Systems
    - Adherence to communication plan
    - Adherence to management plan
    - Development of certification plans (including CERTRAK) and adherence to required certifications
  - Financial Reporting
  - Property Management
  - Security and Information Technology
  - Status (Monthly) Reports
  - Staffing
  - Adherence to Safety, Health and Environmental Procedures and Regulations
    - Lost time incidents
    - Close calls
    - Injuries and illnesses
    - Damage to equipment and property
    - Environmental compliance

## Final RFP NNM08125357R

- Adherence to Data Requirements Documents
  - Teaming/Subcontracting Management
  
  - **Technical Performance**
    - Testing and Analysis
      - Test sample preparation and verification
      - Testing of materials, mechanical and electrical components, and mechanical and electrical systems
      - Materials Research
    - Data Collection, Documentation, and Distribution
      - Engineering analysis, verification, validation, collection and storage of data
      - Creation, distribution, maintenance, and storage of drawings
      - Entry of data into MAPTIS
      - Creation of technical documentation in the areas of organizational work instructions, technical documents, scientific and technical publications, and space environmental effects
    - Facility, system, equipment installation and build-up, modification and preventive maintenance
    - Adherence to existing directives, regulations, and applicable documents
    - Innovations, ideas, and improvements to existing processes and systems
    - Scheduling of tests, facilities, chambers, and shop equipment
    - Fabrication and assembly of flight and associated hardware
    - Operation and oversight of facilities and test chambers
      - Proper operation of equipment
      - Damage to equipment and property
    - Monitoring of facilities, systems, and equipment
    - Customer Satisfaction
  
  - **Cost Control**
    - Reporting all costs and expenses
    - Informing the government of anticipated funding shortfalls
    - Tracking & controlling expenses
      - Standard labor costs
      - Overtime labor costs
      - ODC
      - Travel
      - Training
      - Procurements (including materials)
      - Utilizing commercial work to off-set costs
- b. Scope of Contract

The scope of the contract is limited to Marshall Engineering Technicians and Trades Support (METTS) Services Contract at the George C. Marshall Space Flight Center (MSFC).

3. Fee Evaluation

Evaluations for fee will be prepared and submitted semi-annually to the Performance Evaluation Board (PEB). The Contractor's performance shall be evaluated against the final Award Fee Evaluation Plan to determine the total earned award fee. Government and Contractor representatives will have an opportunity to present their assessments to the PEB. The Fee Determination Official will determine the award fee after receipt of the Performance Evaluation Board's report and recommendations. The Government shall then pay the Contractor the earned fee. The Cost Plus Award Fee (CPAF) Organization Chart, which identifies the evaluation participants by title, is provided in Figure 1.

4. Appointment Letter

The COTR shall issue an appointment letter, appointing a Technical Monitors for each Mission WBS, provided in Attachment 1.

5. IDIQ Technical Monitors

A technical monitor will be appointed for each IDIQ when issued.

B. EVALUATION CRITERIA DEFINITION

The evaluation criteria specified in this section will provide the basis for rating the Contractor's performance of the activities described in the Performance Work Statement. The following paragraphs define the evaluation criteria.

1.0 Contract Management Performance (includes Safety, Health and Environmental)

This criterion will address the Contractor's effectiveness in planning, implementing, controlling, and completing task activities to achieve contract objectives. The evaluation will focus on (but not be limited to) management's responsiveness to all contract matters; the effectiveness of their communications at all contract levels; the reasonableness, accuracy, and promptness of their responses to task requests; their ability to secure and retain qualified personnel (including those with unique skills); their ability to recruit and retain a competitively priced workforce (including unique skills); the ability to have and maintain local autonomy; the effectiveness of their teaming and subcontractor arrangements; and contract and subcontract administration including procurements (including materials).

This criterion addresses the Contractor's effectiveness in implementing and adhering to their Safety, Health, and Environmental Plan and adherence to safety, health and environmental regulations and procedures.

The Contractor's performance will be measured against their ability to minimize lost time incidents; injuries and illnesses; close calls; and their ability to handle hazardous materials and chemicals in accordance with procedures and regulations. This effort involves the use of many hazardous materials, chemicals, and equipment and the contractor must handle these hazardous materials and equipment appropriately to ensure the safety of employees, equipment, facilities, and the public.

## 2.0 Technical Performance

This criterion addresses the services provided by the Contractor. The Contractor's technical performance will be measured against its ability to perform all WBS elements well in an accurate and timely manner. This includes: testing, analysis, collection, documentation, and distribution of data; test sample preparation and verification; engineering analysis of testing, data and results; testing of materials, mechanical and electrical components, and mechanical and electrical systems; verification and validation of produced data; collection, preparation, and storage of data; creation, distribution, maintenance, and storage of drawings; entry of data into MAPTIS; creation of technical documentation in the areas of organizational work instructions, technical documents, scientific and technical publications, and space environmental effects; facility and equipment preventive maintenance and installation; facility build-up and modification; innovations, ideas, and improvements to existing processes, procedures, and systems; scheduling of tests & facilities; fabrication and assembly of flight and associated hardware; operation and oversight of facilities & test chambers; performing work in accordance with the directives, regulations, and applicable documents at MSFC; and customer satisfaction.

## 3.0 Cost Control

This criterion addresses the cost control methods initiated by the Contractor. This evaluation will assess the variances between negotiated and actual costs, ability to provide accurate, thorough and innovative price proposals, ability to manage rates identified on Attachment J-6, and the reasons for such variances, and how the Contractor addresses those variances.

The Contractor's cost control performance will be measured against commercial work to offset the cost of purchasing, utilizing, and maintaining the existing NASA facilities and equipment; selecting the appropriate skill mix to eliminate duplication of effort; effective management of travel, training, overtime, and procurements (including materials) to maximize the use of limited government funds.

In order to receive credit for an underrun or mitigate an overrun, the Contractor shall meet the following criteria:

- Unused Procurements ceiling shall not be applied to mitigate overruns in other contract areas.
- Unused Material contract ceiling shall not be applied to mitigate overruns in other contract areas.
- Unused Overtime ceiling shall not be applied to mitigate overruns in other contract areas.

## Final RFP NNM08125357R

- Unused Travel ceiling shall not be applied to mitigate overruns in other contract areas.
- Unused Training ceiling shall not be applied to mitigate overruns in other contract areas.
- Commercial work shall not be applied to mitigate overruns in other contract areas and/or to mitigate a total contract overrun.

All solicitation “plug” numbers are “not to exceed numbers” and do not necessarily reflect anticipated costs for work performance. Therefore, under-running any of the “plug” numbers is not considered a strength.

The contractor must receive a score of at least 85 percent in the Technical Performance criteria to receive credit of an underrun.

### 4.0 Award Fee Provision

In addition to the two criteria listed above, the evaluation will consider the impact of a major breach of safety or security. A major breach of safety or security is defined as follows:

(1) A major breach of safety consists of an accident, incident, or exposure resulting in a fatality or mission failure; or in damage to equipment or property equal to or greater than \$1 million; or in a “willful” or “repeat” violation cited by the Occupational and Safety Administration (OSHA) or by a state agency operating under an OSHA approved plan.

(2) A major breach of security may arise from compromise of classified information; or illegal technology transfer; or workplace violence resulting in criminal conviction; or sabotage; or compromise or denial of information technology services; or damage or loss greater than \$250,000 to the Government; or theft.

For evaluation purposes, an overall fee determination of zero may be made for any evaluation period in which there is a major breach of safety or security, regardless of contractor performance in the other criteria. In evaluating a major breach of safety or security, factors leading into the breach as well as the contractor’s subsequent actions will be taken into consideration.

## C. EVALUATION METHODOLOGY

### 1. Evaluation Mechanics

Performance for both Mission Services and IDIQ areas will be evaluated by criteria utilizing strengths and weaknesses submitted by the technical monitors to the COTR. The COTR and CO will assemble and summarize inputs to develop a rating recommendation to the PEB.

2. Ratings

The COTR will recommend a rating for the Contractor's performance by assigning significant strengths and weaknesses and strengths and weaknesses. The COTR will assign an adjective rating for each criteria. Table 1 presents the detailed adjective rating scheme, the numerical range of each rating, and definitions of the major adjective ratings.

3. PEB Evaluation

A written report and a presentation to the PEB will be prepared by the CO/COTR. Strengths and weaknesses for each criterion, recommended ratings and award fee for the period, and criterion ratings are to be addressed in the report and presentation. The report must be delivered to the PEB within 10 calendar days after the end of each semiannual period.

D. CONTRACTOR'S REPORTING REQUIREMENTS

The Contractor shall submit a written self-evaluation report to the PEB within 10 calendar days after the end of each semiannual period. The written self-evaluation report shall address performance on Performance Work Statement to which the award fee provision is applicable. The Contractor will have the option to make an oral presentation to the PEB when it meets. Section A.4 of MWI 5116.1D, "Evaluation of Contractor Performance Under Contracts with Award Fee Provisions" provides guidance to the Contractor in fulfilling these requirements.

**MONITOR APPOINTMENT LETTER**

TO: DISTRIBUTION  
FROM: Org Code/Name  
SUBJECT: Appointment of Monitors for the Marshall Engineering Technicians and Trades Support Services Contract at Marshall Space Flight Center

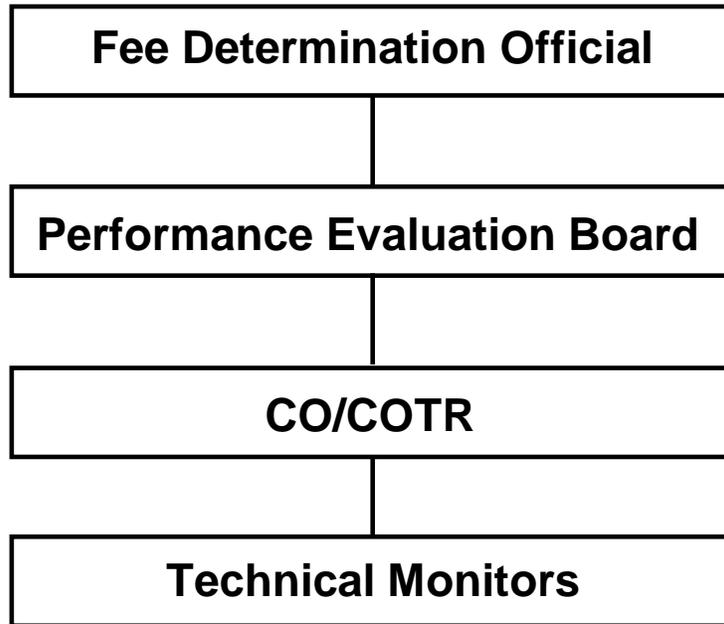
The following personnel are appointed as monitors for each Mission WBS and IDIQ Task Order. The assigned criteria to be evaluated in accordance with the MSFC Award Fee Plan are also indicated.

<u>Principal</u>	<u>Alternate</u>	<u>Criteria to be Evaluated</u>
		Contract Management Performance
		Technical Performance
		Cost Control

These appointments are effective immediately and shall remain in effect until completion of the contract or until rescinded by the Coordinator/COTR.

Coordinator/COTR

FIGURE 1 - CPAF ORGANIZATION CHART



**COST PLUS AWARD FEE (CPAF) GRADING TABLE**

ADJECTIVAL RATING	DEFINITION	EFFICIENCY RATING AND AWARD FEE PERCENTAGE
<u>Excellent</u>	Of exceptional merit; exemplary performance in a timely, efficient and economical manner; very minor (if any) deficiencies with no adverse effect on overall performance.	91 – 100
<u>Very Good</u>	Very effective performance, fully responsive to contract requirements accomplished in a timely, efficient and economical manner for the most part; only minor deficiencies.	81 – 90
<u>Good</u>	Effective performance; fully responsive to contract requirements; reportable deficiencies, but with little identifiable effect on overall performance.	71 – 80
<u>Satisfactory</u>	Meets or slightly exceeds minimum acceptable standards; adequate results; reportable deficiencies with identifiable, but not substantial, effects on overall performance.	61 – 70
<u>Poor/Unsatisfactory</u>	Does not meet minimum acceptable standards in one or more areas; remedial action required in one or more areas; deficiencies in one or more areas which adversely affect overall performance.	LESS THAN 61

NOTES:

1. As a benchmark for evaluation, in order to be rated Excellent, the contractor shall be under cost, on or ahead of schedule, and have provided excellent technical performance.
2. If a significant weakness is identified under a subcriterion, that subcriterion shall not receive a score higher than 80 with a rating of Good. However, an Excellent or Very Good rating may still be assigned the overall rating provided the scores in the other criteria add up to 81 or higher.
3. Any factor/subfactor receiving a grade of Poor/Unsatisfactory (less than 61) shall be assigned zero performance points for purposes of calculating the award fee amount. The contractor shall not be paid any award fee when the total award fee score is "Poor/Unsatisfactory" (less than 61).

**[End of Attachment 11]**

## SECTION M

### EVALUATION FACTORS FOR AWARD

#### **M.1 AWARD WITHOUT DISCUSSIONS**

As provided for in FAR 52.215-1, "Instructions to Offerors – Competitive Acquisitions," the Government intends to evaluate proposals and award a contract without discussions with Offerors (except clarifications as described in FAR 15.306(a)). Therefore, the Offeror's initial proposal should contain the Offeror's best terms from a cost or price and technical standpoint. The Government reserves the right to conduct discussion if the Contracting Officer later determines them necessary. If the Contracting Officer determines that the number of proposals that would otherwise be in the competitive range exceeds the number at which an efficient competition can be conducted, the Contracting Officer may limit the number of proposals in the competitive range to the greatest number that will permit an efficient competition among the most highly rated proposals.

(End of Provision)

#### **M.2 52.217-5 EVALUATION OF OPTIONS (JUL 1990)**

Except when it is determined in accordance with FAR 17.206(b) not to be in the Government's best interests, the Government will evaluate offers for award purposes by adding the total price for all options to the total price for the basic requirement. Evaluation of options will not obligate the Government to exercise the option(s).

(End of Provision)

#### **M.3 52.222-46 EVALUATION OF COMPENSATION FOR PROFESSIONAL EMPLOYEES (FEB 1993)**

(a) Recompensation of service contracts may in some cases result in lowering the compensation (salaries and fringe benefits) paid or furnished professional employees. This lowering can be detrimental in obtaining the quality of professional services needed for adequate contract performance. It is therefore in the Government's best interest that professional employees, as defined in 29 CFR 541, be properly and fairly compensated. As part of their proposals, offerors will submit a total compensation plan setting forth salaries and fringe benefits proposed for the professional employees who will work under the contract. The Government will evaluate the plan to assure that it reflects a sound management approach and understanding of the contract requirements. This evaluation will include an assessment of the offeror's ability to provide uninterrupted high-quality work. The professional compensation proposed will be considered in terms of its impact upon recruiting and retention, its realism, and its consistency with a total plan for compensation. Supporting information will include data, such as recognized national and regional compensation surveys and studies of professional, public and private organizations, used in establishing the total compensation structure.

(b) The compensation levels proposed should reflect a clear understanding of work to be performed and should indicate the capability of the proposed compensation structure to obtain and keep suitably qualified personnel to meet mission objectives. The salary rates or ranges must take into account differences in skills, the complexity of various disciplines, and professional job difficulty. Additionally, proposals envisioning compensation levels lower than those of predecessor contractors for the same work will be evaluated on the basis of maintaining program continuity,

uninterrupted high-quality work, and availability of required competent professional service employees. Offerors are cautioned that lowered compensation for essentially the same professional work may indicate lack of sound management judgment and lack of understanding of the requirement.

(c) The Government is concerned with the quality and stability of the work force to be employed on this contract. Professional compensation that is unrealistically low or not in reasonable relationship to the various job categories, since it may impair the Contractor's ability to attract and retain competent professional service employees, may be viewed as evidence of failure to comprehend the complexity of the contract requirements.

(d) Failure to comply with these provisions may constitute sufficient cause to justify rejection of a proposal.

(Note – See Subfactor B, Staffing and Total Compensation, STC4, Compensation Plan in Section M)

(End of Provision)

#### **M.4 EVALUATION FACTORS FOR AWARD**

##### **A. General**

The proposed procurement will be evaluated in accordance with procedures prescribed by the Federal Acquisition Regulation (FAR) and the NASA Federal Acquisition Regulation Supplement (NFS).

##### **B. Source Evaluation Board (SEB)**

A Source Evaluation Board (SEB), appointed by the Source Selection Authority of the Marshall Space Flight Center will evaluate the offers submitted for this Request for Proposal (RFP). Proposal documentation requirements set forth in this RFP are designated to provide guidance to the Offeror concerning the type of documentation that must be submitted to the SEB. Acceptable offers will be evaluated in accordance with the factors set forth below, and oral or written discussions or both will be conducted with all Offerors determined to be within the competitive range.

##### **C. Source Selection Authority**

Source selection will be made by the MSFC Center Director.

##### **D. Source Evaluation Board (SEB) Membership**

The voting members of the SEB are:

Pete Allen  
Kimberly Carson  
Eddie Davis  
Tony Williams  
Billy Kauffman

E. Evaluation Factors and Subfactors

(1) Acceptable offers will be evaluated using the following factors:

- Mission Suitability
- Cost Factor
- Past Performance Factor

(2) The detailed descriptions of the factors and subfactors are set forth below:

**(i) Mission Suitability Factor (Volume I)**

The Mission Suitability Factor will be used to evaluate the Offeror's approach to effectively accomplishing the work specified in the Performance Work Statement (PWS). This evaluation will assess the Offeror's understanding of the requirements of the PWS and the specific role the Marshall Engineering Technicians and Trades Support (METTS) Services Contractor performs in supporting MSFC. For each Mission Suitability subfactor, the Offeror's assessment of risks inherent in their approach and their plan to track and mitigate those risks will be evaluated as a further indication of the Offeror's understanding of the requirements and the effectiveness and efficiency of their approach.

The total weighting for the Mission Suitability Factor shall be 1,000 points. The Subfactors to be used in evaluating Mission Suitability and their corresponding weights are listed below in descending order of importance:

Management and Technical Approach (MTA)	575 points
Staffing and Total Compensation (STC)	325 points
Safety, Health, and Environmental (SHE)	<u>100 points</u>
Total	1,000 points

The numerical weights assigned to the three Subfactors identified above are indicative of the relative importance of those evaluation areas.

The proposals will be evaluated and scored based on the supporting subfactors set forth below. The proposal subsections within each supporting subfactor are descriptions of what will be evaluated under the subfactor as a whole to facilitate proposal organization and shall not be construed as an indication of order of importance or relative weighting within the individual subfactor as there are no discrete point values attached to any of the proposal subsections.

**Subfactor A: Management and Technical Approach (MTA)**

This subfactor will be used to evaluate the Offeror's management, technical and operational approach for providing the services delineated in the PWS. The following will be evaluated:

MTA1 Management

- The Offeror's approach to effectively managing the overall scope of work

## Final RFP NNM08125357R

- The Offeror's description of work to be accomplished and an outline of methods by which the contractor proposes to accomplish work down through 3<sup>rd</sup> level WBS, including management concepts, plans, and approach to project management
- The Offeror's overall approach for tracking and managing work and its relation to each PWS element
- Specifically for 3<sup>rd</sup> level PWS 2.4.11:
  - The Offeror's method of receiving, estimating and processing customer orders through the fabrication and assembly
  - The Offeror's plan for issuing, receiving, and controlling work for incidental subcontracting to augment the fabrication and assembly capability
  - The Offeror's fabrication process planning and production control (which includes scheduling and monitoring shop work loads, expediting hardware and status of work orders)

### MTA2 Organizational Structure

- The Offeror's descriptions and rationale for organizational structure, associations with corporate or division organizations, and teammates/major subcontractors
- The Offeror's plan for internal and external lines of authority
- The Offeror's approach to integrated planning, controlling, and reporting of contract activities

### MTA3 Local Autonomy

- The Offeror's local autonomy granted to the Offeror's METTS General Manager
- The Offeror's relationships between the local METTS organization and the parent organization
- The Offeror's types of decisions made outside the local organization

### MTA4 Communication

- The Offeror's approach for maintaining good communication with cognizant personnel
- The Offeror's proposed methods of resolving ambiguities, concerns, and conflicts that become apparent during the performance of this contract
- The Offeror's procedures for communicating to the COTR and Technical Monitors (TMs) the status of activities down to the 3<sup>rd</sup> level WBS elements and any issues or concerns that need to be raised to the management level

### MTA5 Task Order Work Process

- The Offeror's approach to providing complete and timely accomplishment of Task Order Plans in response to Task Order Requests using the procedure defined in clauses H.4, Task Ordering Procedure, and H.5, Supplemental Task Ordering Procedure, and in Attachment J-1, paragraph 1.1.1, and DRDs in Attachment J-2
- The Offeror's approach to obtaining and retaining the required skills to accomplish calibration work including up to 20 metrology technicians.

MTA6 Quality Assurance

- The Offeror's approach to providing accurate, timely, responsive, quality services in the fulfillment of the requirements, including product and quality assurance techniques and timely problem resolution
- The Offeror's approach to ensure adherence to applicable Federal laws, Marshall Work Instructions, Marshall Organizational Instructions, regulations, and guidelines
- The Offeror's procedures and features of their operating approach which provide early recognition of potential problems, problem areas, and allow for proactive problem avoidance and solutions
- The Offeror's approach to quality, the extent of their compliance to ISO9000/AS9100 (certification/registration not required) and their approach to working within the Marshall Management System.

MTA7 Cost Control

- The Offeror's, and any teammates/major subcontractor's, approach to estimating, managing, monitoring, tracking, reporting, and controlling costs and expenses such as labor charges, overtime, travel, training, and procurements (includes materials) under the contract
- The status of the prime's, teaming partners, and subcontractor business systems with the DCAA

MTA8 Teaming/Subcontracting

- The Offeror's approach for teaming and subcontracting
- The Offeror's arrangements with teammates/major subcontractors including fee distribution
- The Offeror's compliance with the Small Business Administration's Ostensible SubContracting rules

MTA9 Export Control

- The Offeror's knowledge of and ability to comply with NASA/MSFC export control requirements and procedures and related U.S. export control laws and regulations

MTA10 Organizational Conflicts of Interest

- The Offeror's approach for assuming, planning, controlling, and executing the requirements of the PWS, while complying with clauses H.2, Limitation of Future Contracting, H.3, Organizational Conflicts of Interest, and I.8, Access to Sensitive Information.
- The Offeror's analysis of possible organizational conflicts of interest resulting from access to sensitive information and pertaining to impaired objectivity identifying the conflicts
- The Offeror's proposed methods for avoiding, neutralizing, or mitigating the conflicts

MTA11 Risk Analysis and Mitigation

- The Offeror's identified risks associated with their methods to accomplish this subfactor
- The Offeror's planned mitigation strategies for identified risks

**Subfactor B: Staffing and Total Compensation**

This subfactor will be used to evaluate the Offeror's approach for providing the staffing to perform the requirements of this PWS (Reference FAR 52.222-46). The Offeror's plan to accomplish each section of the PWS will be evaluated on content pertaining to flexibility to address varying demands (changes in volume of work and types of work), use of qualified/skilled personnel, and ability to recruit specialized skills. The following will be evaluated:

STC1 Phase-In

- The Offeror's approach for a contract phase-in with minimal impact
- The Offeror's phase-in proposal describing the phase-in time required, the method to transition work to the new contract with minimal impact, recruitment of the required workforce, and any other critical issues

STC2 Staffing and Skill Levels

- The Offeror's approach to determining optimum skill mix and staffing levels
- The Offeror's methodology for ensuring and maintaining a consistent application of appropriate labor classifications in all PWS elements throughout the life of the contract
- The Offeror's ability to recruit and retain multi-disciplined personnel, excluding metrology technicians (metrology technicians to be addressed in MTA 5)
- The Offeror's sources of staffing and planned retention percentages
- The Offeror's approach to ensuring the certifications necessary to meet requirements of the PWS
- The Offeror's proposed skill mix and staffing level down through the 3<sup>rd</sup> level WBS for section 2.0 of the PWS and for the 2<sup>nd</sup> level for section 1.0 of the PWS
- The Offeror's rationale supporting their conclusion of optimum skill mix and staffing levels down through the 3<sup>rd</sup> level WBS for section 2.0 of the PWS and for the 2<sup>nd</sup> level for section 1.0 of the PWS

STC3 Rationale/Qualifications of Key Personnel

- The Offeror's number of key personnel and how this demonstrates their understanding of the diverse technical requirements of this RFP
- The rationale for designating a particular position as key
- The Offeror's rationale for selecting key personnel and verification of their education, experience, and other qualifications
- Education, experience, and other qualifications of key personnel for appropriateness to their proposed position

**Final RFP NNM08125357R**

- Commitment of the key personnel to this contract and the appropriateness of their pay rates to their proposed position
- The Offeror's replacement/transition plan covering the departure of any key personnel during the course of this contract with emphasis on proposed transition period, proposed transition/replacement approach, and proposed strategy to limit the impact to the Government

STC4 Compensation Plan (Reference Clause M.3)

- The realism of the Offeror's total compensation plan (including teammates/major subcontractors) and personnel policies and their ability to attract, motivate, train, and retain a qualified workforce (exempt and SCA personnel)
- Compensation levels that reflect an understanding of the work
- Portability of benefits
- The Offeror's understanding and proposed compliance with the Service Contract Act (See FAR 52.222-46)
- The Offeror's conformance of non-service labor categories

STC5 Flexibility to Address Varying Demands

- The Offeror's approach to addressing increases or decreases in workload
- The Offeror's approach to recruiting and hiring required personnel in the event the workload increases beyond work defined in PWS 1.0 and 2.0.
- The Offeror's approach to cross-train and cross-utilize personnel
- The Offeror's explanation of how they will handle reductions in workload in the event there is a decrease in workload or scope
- The Offeror's explanation of how existing resources can be leveraged as workload shifts between various areas of the PWS

STC6 Risk Analysis and Mitigation

- The risks associated with the methods to accomplish this subfactor as identified by the Offeror
- The Offeror's planned mitigation strategies for dealing with identified risks

**Subfactor C: Safety, Health, & Environmental**

This subfactor will be used to evaluate the Offeror's approach to managing all safety, health, and environmental aspects for this effort. The following will be evaluated:

SHE1 Safety, Health, and Environmental Initiatives

- The Offeror's safety, health, and environmental policies, procedures, and processes, as defined in the draft Safety, Health, and Environmental Plan (DRD1061SA-001), to assess Offeror's ability to adequately control safety, health, and environment compliance and issue resolution

**Final RFP NNM08125357R**

- Assessment of Offeror's approach to meeting each of the MSFC 5 Core Program Requirements (CPR), identified in MPR 8715.1
- The draft Safety, Health, and Environmental Plan will be compared to the DRD to ensure each DRD element is adequately addressed

**SHE2 Risk Analysis and Mitigation**

- The risks associated with the methods to accomplish this subfactor as identified by the Offeror
- The Offeror's planned mitigation strategies for dealing with identified risks

**(ii) Cost Factor (Volume II)**

This solicitation will result in a cost reimbursement contract with both Mission (PWS 1.0 and 2.0) and IDIQ (PWS 3.0) services. The Cost Factor is relevant in determining the Offeror's understanding of the contract and its resources requirements. Although the Cost Factor is not numerically scored, cost adequacy, reasonableness and realism will be determined by using the following evaluation procedures.

**Mission Services:**

The adequacy and realism of the cost proposal and the most probable cost to be incurred for the Mission Services portion (including any proposed teammate/major subcontractor) will be evaluated.

Estimated cost and fees for the 12 month base period and four one year options will be evaluated. The Government assessment of the probable "cost of doing business" with each Offeror, of the possible cost growth during the course of the contract, and of features that could cause a given proposal to cost more or less than proposed will be included in this evaluation. Proposed costs will be adjusted in order to report to the Source Selection Authority (SSA) the probable "cost of doing business" with each Offeror for the base year and option periods. The Offeror's proposed G&A ceiling rates from Clause B.7 will be used in establishing the most probable cost. For evaluation purposes, base year costs shall be on a 12 month period of performance basis.

Each Offeror's proposed phase-in costs will be identified separately from the most probable cost and reported to the SSA. Adjustments to the proposed phase-in costs will not be made by the Source Evaluation Board (SEB); however, the overall adequacy and realism of the proposed phase-in costs will be reported to the SSA.

**IDIQ:**

The adequacy and realism of the fully burdened labor rates, burden applied to other direct costs (ODC), and fees proposed by each Offeror (including any proposed teammates/major subcontractors) for the IDIQ portion will be evaluated.

The Government will derive an evaluated fully burdened labor cost for accomplishment of the IDIQ effort, for the base year and each option year, by applying an SEB predetermined skill mix and allotment of hours to the quoted fully burdened labor rates as proposed by the Offeror in Attachment J-6. For any teaming/major subcontracting arrangements, the SEB predetermined allotment of hours will be divided according to the proposed prime/subcontractor work split ratio

**Final RFP NNM08125357R**

for each labor category, and each split of hours will be applied to the respective prime and teammates/major subcontractors fully burdened labor rates proposed in Attachment J-6.

The Government's estimated skill mix and allotment of hours will not be provided to the Offeror, but will be included in the Government Source Evaluation Plan approved by the SSA. The IDIQ scenario will be used for evaluation purposes only. The Government will utilize the "IDIQ Cost Model (Government Worksheet)" provided below as part of this exercise. Fully burdened IDIQ labor rates (prime and teammate/major subcontractor) and fee rates from Attachment J-6, and the offeror's material handling and other burden rates for ODC from Cost Form CG, will be populated by the Government on this form, along with the SEB's predetermined skill mix and allotment of hours for each contract year to arrive at a total evaluated IDIQ price per year. If necessary, adjustments to the proposed fully burdened labor rates will be made to offset unrealistically low labor rates or indirect rates that may have been used by the Offeror to calculate the fully burdened labor rates. The adjusted rates, together with the proposed rates found to be acceptable, will be applied to the Government worksheet to calculate a most probable cost for the Offeror. The Offeror's proposed G&A ceiling rates from Clause B.7 will be used in establishing the most probable cost.

**Total Most Probable Cost:**

For evaluation purposes, the total most probable cost will be the sum of the Mission services most probable cost and IDIQ most probable cost for the base year and all option years. Both the Offeror's total proposed cost (sum of the Mission Services proposed cost and the Government computed IDIQ proposed cost) and the Offeror's most probable cost developed by the Government will be presented to the SSA. Phase-in costs will be separately identified and will not be included in the total most probable cost.

An assessment of the Government's confidence in each Offeror's most probable cost will be prepared and reported to the SSA.

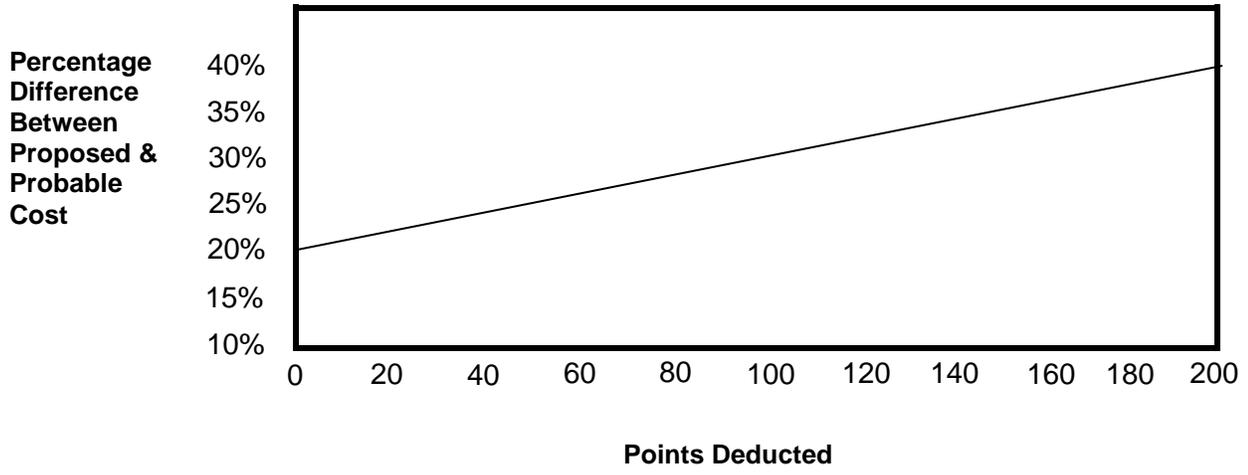
**Mission Suitability Adjustment to Cost Realism:**

As this solicitation will result in a cost reimbursement contract, the Mission Suitability score may be adjusted based on the degree of cost realism. The Cost Factor will not be numerically scored by the SEB, however, proposals requiring significant upward adjustments to the proposed costs in order to establish a most probable cost will cause an Offeror's Mission Suitability score to be reduced. A maximum of 200 points may be deducted from an Offeror's Mission Suitability score depending on the size of the cost adjustment necessary to establish the most probable cost. For each percentage point of difference between an Offeror's proposed cost and the most probable cost above 20%, 10 points will be deducted from the Offeror's Mission Suitability Score. The final value will be rounded to the nearest whole number. As an example, if the Offeror's proposed cost is 30% less than the SEB most probable cost, 100 points will be deducted from the Mission Suitability points. A 40% differential between an Offeror's proposed cost and the SEB's most probable cost would result in the maximum allowable deduction of 200 Mission Suitability points. However, there will be no adjustments made to the Mission Suitability score from adjustments of less than 20%.

A graph of the Mission Suitability cost realism point adjustment process is provided below:

**MISSION SUITABILITY COST REALISM POINT ADJUSTMENT GRAPH**

Final RFP NNM08125357R



Final RFP NNM08125357R

IDIQ Cost Model (Government Worksheet)

Contract Year \_\_\_\_\_

Offeror's Name \_\_\_\_\_ Percentage of Total Work \_\_\_\_\_

Labor Categories	Labor Hours (Government Provided)		Fully Burdened Labor Rate (From Offeror's Attachment J-6)		Total (Government Calculated)
Producibility		X		=	
Engineer		X		=	
Senior Engineer		X		=	
Accounting Clerk I		X		=	
Accounting Clerk II		X		=	
Accounting Clerk III		X		=	
Order Clerk I		X		=	
Order Clerk II		X		=	
Safety/Training Specialist		X		=	
Quality Control (Mechanical Inspector)		X		=	
Laboratory Technician		X		=	
Manufacturing Process Planner/Estimator		X		=	
Production Control Clerk		X		=	
Material Expediter		X		=	
Metal Cleaner, Immersion		X		=	
Painter		X		=	
Aerospace Structural Welder		X		=	
Welder, Combination		X		=	
Maintenance Trades Helper		X		=	
Machinery Maintenance Mechanic		X		=	
Machine Tool Operator		X		=	
Sheet-metal Worker		X		=	
CNC Programmer		X		=	
Tool and Die Maker/Tool & Parts Attendant		X		=	
Electronics Planner/Lead		X		=	
Electronics Mechanic, Grade 10		X		=	
Electronics Worker, Grade 8		X		=	

**Final RFP NNM08125357R**

Electronics Technician, Maintenance II		X		=
Engineering Technician I		X		=
Engineering Technician II		X		=
Engineering Technician III		X		=
Engineering Technician IV		X		=
Engineering Technician V		X		=
Library Technician		X		=
Technical Writer II		X		=
Secretary I		X		=
Secretary II		X		=
Secretary III		X		=
Metrology Technician I		X		=
Metrology Technician II		X		=
Metrology Technician III		X		=
Drafter/CAD Operator III		X		=
Drafter/CAD Operator IV		X		=
			<b>Subtotal Labor</b>	
			Direct Material and Incidental Services Subcontracting	
			Overtime	
			Burden	
			<b>Subtotal Fee Bearing Other Costs</b>	
			Award Fee	
			<b>Subtotal</b>	
			General Operating Supplies/Materials/Tools/Equip.	
			Travel	
			Training	
			Burden	
			<b>TOTAL PROPOSED IDIQ COST AND FEE</b>	
			*SEB Adjustments (if any)	
			<b>TOTAL MOST PROBABLE IDIQ COST AND FEE</b>	

\* Including any adjustments made by the SEB.

**NOTE 1:** This sheet will be replicated for each Offeror/Teammates/Subcontractors by Contract Year (CY) and totaled for the entire potential contract period of performance.

**NOTE 2:** The Offeror shall not complete this Government Worksheet. The labor hours are identified in the SEB Source Evaluation Plan prepared prior to the issuance of the RFP and will be used by the SEB to calculate the most probable cost.

**(iii) Past Performance (Volume III)**

The Offeror's overall corporate past performance, to include corporate past performance of any major subcontractor(s), (as opposed to that of proposed key personnel) on related commercial or Government contracts of comparable size (dollar value and total staffing), type (cost reimbursement with incentive or award fee), and scope (technician and trade support services) will be considered. Emphasis will be given to the extent of direct relevant corporate experience and quality of past performance on previous contracts that are relevant to the effort defined in all PWS areas within this RFP, i.e., PWS 1.0, 2.0, and 3.0. This area is not numerically scored, but is assigned an adjective rating (see below) and reported to the SSA for consideration in making a selection.

The evaluation will consider past performance information provided by Offerors and information from other sources. The Interview/Questionnaire form shall be used to solicit assessments of the Offeror's performance from the Offeror's previous customers. All pertinent information, including customer assessments and any Offeror rebuttals, if appropriate, will be made part of the evaluation records and included in the evaluation.

The Offeror's Lost Time Case (LTC) rate will be evaluated. Each referenced contract or project LTC will be averaged (3 years) and compared to the latest available Department of Labor (DoL) LTC national average for the given North American Industry Classification Code (NAICS).

The Offeror, including subcontractors' and teammates', voluntary turnover history for the past 3 years for exempt and nonexempt employees (or other major categorizations used by the Offerors) for the Corporate entity bidding on this contract will be evaluated.

The adjective rating system/definitions shown below will be utilized:

Adjective Rating	Definitions
Excellent	Of exceptional merit; exemplary performance in a timely, efficient, and economical manner; very minor (if any) problems with no adverse effect on overall performance; and experience that is highly relevant to this procurement. Based on the Offeror's performance record, there is a very high level of confidence that the Offeror will successfully perform the required effort. (One or more significant strengths exist. No significant weaknesses exist.)
Very Good	Very effective performance; fully responsive to contract requirements; contract requirements accomplished in a timely, efficient, and economical manner for the most part; only minor problems with little identifiable effect on overall performance; and experience is very relevant to this procurement. Based on the Offeror's performance record, there is a high level of confidence that the Offeror will successfully perform the required effort. (One or more significant strengths exist. Strengths outbalance any weakness.)
Good	Effective performance; fully responsive to contract requirements; reportable problems, but with little identifiable effect on overall performance; and experience is relevant to this procurement. Based on the Offeror's

**Final RFP NNM08125357R**

	performance record, there is confidence that the Offeror will successfully perform the required effort. (There may be strengths or weaknesses, or both.)
Fair	Meets or slightly exceeds minimum acceptable standards; adequate results; reportable problems with identifiable, but not substantial, effects on overall performance; and experience is at least somewhat relevant to this procurement. Based on the Offeror's performance record, there is low confidence that the Offeror will successfully perform the required effort. Changes to the Offeror's existing processes may be necessary in order to achieve contract requirements. (One or more weaknesses exist. Weaknesses outbalance strengths.)
Poor	Does not meet minimum acceptable standards in one or more areas; remedial action required in one or more areas; problems in one or more areas, which adversely affect overall performance. Based on the Offeror's performance record, there is very low confidence that the Offeror will successfully perform the required effort. (One or more deficiencies or significant weaknesses exist.)
Neutral	In the case of an Offeror without a record of relevant past performance or for whom information on past performance is not available, the Offeror may not be evaluated favorably or unfavorably on past performance {see FAR 15.305(a)(2)(ii) and (iv)}.

Relative Importance of Evaluation Factors/Subfactors

In accordance with FAR Part 15.101-1, this acquisition selection will be made using a best value tradeoff analysis. All evaluation factors, Mission Suitability, Past Performance, and Cost, are essentially equal to each other. Therefore, all evaluation factors other than cost, when combined, are significantly more important than cost.

(End of provision)

**[END OF SECTION]**