

SOLICITATION, OFFER AND AWARD		1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 350)		RATING D0-C9	PAGE 1 OF 2618
2. CONTRACT NO. NNM0838773C	3. SOLICITATION NO. NNM0838773R	4. TYPE OF SOLICITATION <input type="checkbox"/> SEALED BID (IFB) <input checked="" type="checkbox"/> NEGOTIATED (RFP)	5. DATE ISSUED June 6, 2008		6. REQUISITION/PURCHASE NO. 42002038773
ISSUED BY National Aeronautics & Space Administration George C. Marshall Space Flight Center Office of Procurement Marshall Space Flight Center, AL 35812		CODE MBP	8. ADDRESS OFFER TO (If other than Item 7) NASA/Marshall Space Flight Center Attn: PS43/Mark A. York Marshall Space Flight Center, AL 35812 Deliver to: Building 4203 Room B108 (256) 544-4028		

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

10. FOR INFORMATION CALL:				A. NAME Mark A. York	B. TELEPHONE NO. (NO COLLECT CALLS) AREA CODE (256) NUMBER 544-4028 EXT. N/A	C. EMAIL ADDRESS mark.a.york@nasa.gov
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OFFER (Must be fully completed by offeror)			
E: 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 240 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 N/A %	20 CALENDAR DAYS N/A %	30 CALENDAR DAYS N/A %
14. ACKNOWLEDGMENT OF AMENDMENTS (The offeror acknowledges receipt of amendments to the SOLICITATION).	AMENDMENT NO 001/002 003/004	DATE 25 Jun 2008/26 Jun 2008 1 Jul 2008/ 2 Jul 2008	AMENDMENT NO 005 006
For offerors and related documents numbered and dated:		DATE 8 Jul 2008 10 Jul 2008	
15. NAME AND ADDRESS OF OFFEROR Jacobs Technology Inc. 600 William Northern Blvd., P.O. Box 884 Tulahoma, TN 37388	CODE 07486	FACILITY	16. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print) Rogers F. Starr, President

15B. TELEPHONE NO. (Include area code) (931) 455-6400	15C. CHECK IF REMITTANCE ADDRESS IS DIFFERENT FROM ABOVE - ENTER <input checked="" type="checkbox"/> SUCH ADDRESS IN SCHEDULE	17. SIGNATURE Rogers F. Starr	18. OFFER DATE 30, March 2009
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AWARD (To be completed by Government)			
19. ACCEPTED AS TO ITEMS NUMBERED	20. AMOUNT \$120,490,228	21. ACCOUNTING AND APPROPRIATION Fund EXCX2209B, WBS 735200.02.01.08	
22. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION <input type="checkbox"/> 10 U.S.C. 2304(c) () <input type="checkbox"/> 41 U.S.C. 253(c) ()		23. SUBMIT INVOICES TO ADDRESS SHOWN IN: (4 copies unless otherwise specified) ITEM G-2	
24. ADMINISTERED BY (If other than Item 7) CODE		25. PAYMENT WILL BE MADE BY CODE See Clause G-2	

26. NAME OF CONTRACTING OFFICER (Type or print) G. Earl Pendley	27. UNITED STATES OF AMERICA Signature of Contracting Officer	28. AWARD DATE May 1, 2009
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IMPORTANT - Award will be made on this Form, or on Standard Form 26, or by other authorized official written notice.

B-1 SERVICES TO BE FURNISHED AND TYPE OF CONTRACT

- A.** Consistent with NASA's most important core value of safety - safety of the public, safety of the astronauts and pilots, safety of our workforce, and safety of our equipment and property: 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: "Michoud Assembly Facility Manufacturing Support and Facilities Operations Contract (MSFOC)" and Attachment J-2, entitled: "MSFOC Facilities PWS."
- 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 Section 1.0 – 10.0 of the Attachment J-1, MSFOC 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 Section 11.0 of Attachment J-1, MSFOC PWS and Section 1.0 - 8.0 of Attachment J-2, MSFOC Facilities 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] for CLIN 1 - 9. The total award fee for this contract is \$ [See Table B-1 below] for CLIN 1,2,4,5,7,and 8. The total estimated cost for Option Years 1 and 2 is \$ [See Table B-2 below] for CLIN 10 - 15. The total award fee for the Option Years 1 and 2 is \$ [See Table B-2 below] for CLIN 10, 11, 13, and 14. The total estimated cost of this contract is \$ TBD with total award fee of \$ TBD for a total contract value of \$ TBD.
- 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	Description	TOTAL ESTIMATED COST	TOTAL MAXIMUM POTENTIAL AWARD FEE	TOTAL EARNED AWARD FEE	TOTAL VALUE
1	Mission Services for Yr 1	\$32,836,154	\$2,708,983		\$35,545,137
2	J-1 PWS IDIQ Task Orders for Year 1	\$6,073,591	\$494,622		\$6,568,213
3	J-2 PWS IDIQ Task Orders for Year 1	TBD	N/A	N/A	TBD
Total CLIN 1, 2 and 3					TBD
4	Mission Services for Yr 2	\$36,406,655	\$3,003,549		\$39,410,204
5	J-1 PWS IDIQ Task Orders for Yr 2	TBD	TBD		TBD
6	J-2 PWS IDIQ Task Orders for Yr 2	TBD	N/A	N/A	TBD
Total CLIN 4, 5 and 6					TBD
7	Mission Services for Yr 3	\$35,996,928	\$2,969,746		\$38,966,674
8	J-1 PWS IDIQ Task Orders for Yr 3	TBD	TBD		TBD
9	J-2 PWS IDIQ Task Orders for Yr 3	TBD	N/A	N/A	TBD
Total CLIN 7, 8 and 9					TBD

*To be completed by Offeror

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	DESCRIPTION	TOTAL ESTIMATED COST	TOTAL MAXIMUM POTENTIAL AWARD FEE	TOTAL EARNED AWARD FEE	TOTAL VALUE
10	Mission Services for Yr 4 (Option 1)	\$37,053,138	\$3,056,884		\$40,110,022
11	J-1 PWS IDIQ Task Orders for Yr 4 (Option 1)	TBD	TBD		TBD
12	J-2 PWS IDIQ Task Orders for Yr 4 (Option 1)	TBD	N/A	N/A	TBD
CLIN 10, 11, and 12					TBD
13	Mission Services for Yr 5 (Option 2)	\$38,948,839	\$3,213,279		\$42,162,118
14	J-1 PWS IDIQ Task Orders for Yr 5 (Option 2)	TBD	TBD		TBD
15	J-2 PWS IDIQ Task Orders for Yr 5 (Option 2)	TBD	N/A	N/A	TBD
CLIN 13, 14, and 15					TBD

*To be completed by Offeror

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, MSFOC PWS Section 11.0, Indefinite Delivery/Indefinite Quantity (IDIQ) Services and Attachment J-2, MSFOC Facilities PWS Section 1.0 - 8.0. This work will be authorized via Task Orders (TO) issued by the Contracting Officer (CO) in accordance with Clauses H.17, H.18, and H.19.
- 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
2 & 3	(Year 1)	\$10,000,000	\$100,000,000
5 & 6	(Year 2)	\$10,000,000	\$100,000,000
8 & 9	(Year 3)	\$10,000,000	\$100,000,000
11 & 12	(Year 4) Option 1	\$10,000,000	\$100,000,000
14 & 15	(Year 5) Option 2	\$10,000,000	\$100,000,000

- 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 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. 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 Attachment J-5, Performance Evaluation Plan. The Government's Performance Evaluation Plan may be revised unilaterally by the Government prior to the beginning of any rating period to redirect emphasis.

Contract NNM09AA20C

- 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.
- 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 AWARD FEE SCORES

The amount of award fee earned shall be determined in accordance with Section J, Attachment J-5, *Performance Evaluation Plan*, and B.4, "1852.216-76 Award Fee for Service Contracts." The following tables specify the award fee available and award fee earned. NASA will make provisional and final earned award fee payments in accordance with B.4, "1852.216-76 Award Fee for Service Contracts."

AWARD FEE PERIOD		AWARD FEE	
FROM	TO	AVAILABLE	EARNED
BASE PERIOD			
29-Apr-09	28-Oct-09	\$1,552,341	
29-Oct-09	28-Apr-10	\$1,651,264	
29-Apr-10	28-Oct-10	\$1,501,774	
29-Oct-10	28-Apr-11	\$1,501,775	
29-Apr-11	28-Oct-11	\$1,484,873	
29-Oct-11	28-Apr-12	\$1,484,873	
OPTION YEAR 1			
29-Apr-12	28-Oct-12	\$1,528,442	
29-Oct-12	28-Apr-13	\$1,528,442	
OPTION YEAR 2			
29-Apr-13	28-Oct-13	\$1,606,639	
29-Oct-13	28-Apr-14	\$1,606,640	

(*) To be completed by Offeror

B-6 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 MAF Manufacturing Support and Facility Operations Contract 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:	\$	\$	\$

(End of Clause)

B-7 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
\$699,173	Mission Year 1
\$811,886	Mission Year 2
\$298,856	Mission Year 3
\$307,712	Option 1
\$877,754	Option 2

(*) To be completed by Offeror

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.

Note 3 – This Clause satisfies the fill-in requirement for FAR Clause 52.222-2.
(End of Clause)

B-8 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:

Burden Rate Ceiling (applicable to Attachment J-2 MSFOC Facilities PWS Section 1.0 - 8.0):

Amount	Period
(b)(4)	Mission Year 1
	Mission Year 2
	Mission Year 3
	Option 1
	Option 2

(*) To be completed by Offeror

- 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)

C.1 SCOPE OF WORK

The Contractor shall provide all personnel, materials, equipment, and facilities (except as otherwise provided for in this contract) necessary to perform those functions as set forth in Section J, Attachments J-1, Performance Work Statement, J-1-A, Performance Standards, J-1-B, Performance Timetables, and J-1-C, Manufacturing Support Requirements and Timeline, J-2, Facilities Performance Work Statement, and J-3 Data Procurement Documents, as a whole.

D.1 FAR 52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

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 these addresses:

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

<http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm>

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

<u>CLAUSE NUMBER</u>	<u>DATE</u>	<u>TITLE</u>
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N/A

**II. NASA FEDERAL ACQUISITION REGULATION SUPPLEMENT (NFS)
(48 CFR CHAPTER 18)**

<u>CLAUSE NUMBER</u>	<u>DATE</u>	<u>TITLE</u>
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1852.211-70	SEP 2005	PACKAGING, HANDLING, AND TRANSPORTATION
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E.1 FAR 52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

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 these addresses:

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

<http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm>

A. FEDERAL ACQUISITION REGULATION (FAR) (48 CFR CHAPTER 1)

CLAUSE

NUMBER	DATE	TITLE
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52.246-5 (*)	APR 1984	INSP OF SERVICES - COST-REIMBURSEMENT
52.246-12 (**)	AUG 1996	INSPECTION OF CONSTRUCTION
52.246-16	APR 1984	RESPONSIBILITY FOR SUPPLIES

**B. NASA FEDERAL ACQUISITION REGULATION SUPPLEMENT (NFS)
(48 CFR CHAPTER 18)**

CLAUSE

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

N/A

(*) Inspection of Services – Cost Reimbursement will apply to:
Balance of PWS J-1 and PWS J-2

(**) Inspection of Construction will apply to:

PWS J-1, WBS 4.5 Maintenance Projects
PWS J-1, WBS 10.0 Construction Management
PWS J-2, WBS 2.0 Rehabilitation of Contractor Acquired Property
PWS J-2, WBS 4.0 Construction of Local Projects
PWS J-2, WBS 6.0 Construction of Facilities
PWS J-2, WBS 1.0 Contractor Acquired Property

**E.2 FAR 52.246-11 HIGHER-LEVEL CONTRACT QUALITY REQUIREMENT
(GOVERNMENT SPECIFICATION) (FEB 1999)**

The Contractor shall comply with the standard titled: ANSI/ISO/ASQ-Q9001-2000 "Quality Management Systems (QMS) – Requirements" in effect on the contract date, which is hereby incorporated into this contract. The Contractor shall become ANSI/ISO/ASQ-Q9001-2000 compliant within 12 months of contract effective date.

**E.3 NFS 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:

Inspection and acceptance of all work shall be performed at the Michoud Assembly Facility (MAF), and such other places of performance or delivery of work required under this contract.

E.4 NFS 1852.246-72 MATERIAL INSPECTION AND RECEIVING REPORT. (AUG 2003)

- A.** At the time of each delivery to the Government under this contract, the Contractor shall furnish a Material Inspection and Receiving Report (DD Form 250 series) prepared in three (3) copies, an original and two (2) copies.
- B.** The Contractor shall prepare the DD Form 250 in accordance with NASA FAR Supplement 1846.6. The Contractor shall enclose the copies of the DD Form 250 in the package or seal them in a waterproof envelope, which shall be securely attached to the exterior of the package in the most protected location.
- C.** When more than one package is involved in a shipment, the Contractor shall list on the DD Form 250, as additional information, the quantity of packages and the package numbers. The Contractor shall forward the DD Form 250 with the lowest numbered package of the shipment and print the words "Contains DD Form 250" on the package.

F 1.0 FAR 52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

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 these addresses:

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

<http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm>

A. FEDERAL ACQUISITION REGULATION (FAR) (48 CFR CHAPTER 1)

CLAUSE

NUMBER

DATE

TITLE

52.242-15	AUG 1989	STOP-WORK ORDER (ALTERNATE I) (APR 1984)
52.247-34	NOV 1991	F.O.B. DESTINATION

B. NASA FEDERAL ACQUISITION REGULATION SUPPLEMENT (NFS) (48 CFR CHAPTER 18)

CLAUSE

NUMBER

DATE

TITLE

N/A

F 2.0 MSFC 52.237-91 PLACE OF PERFORMANCE (FEB 2001)

The Contractor shall perform the work under this contract at the Michoud Assembly Facility (MAF), and at such other locations as may be approved in writing by the Contracting Officer.

(End of clause)

F 3.0 PERIOD OF PERFORMANCE

- A.** The period of performance of this contract is from May 1, 2009 through April 30, 2012.

F 4.0 52.217-9 OPTION TO EXTEND THE TERM OF THE CONTRACT

- (a) The Government may extend the term of this contract by written notice to the Contractor within sixty (60) days; provided that the Government gives the Contractor a preliminary written notice of its intent to extend at least one hundred and twenty (120) days before the contract expires. The preliminary notice does not commit the Government to an extension.

OPTION	PERIOD OF PERFORMANCE	EXERCISED VIA MODIFICATION
Option 1	May 1, 2012 – April 30, 2013	
Option 2	May 1, 2013 – April 30, 2014	

- (b) If the Government exercises this option, the extended contract shall be considered to include this option clause.
- (c) In accordance with NFS 1817.207-70 (b) (1), the Government will perform an analysis to determine whether exercise of the option is in the Government's best interest. The analysis required to support the option exercise determination must include consideration of other factors in addition to price. In addition the other factors contained in FAR 17.207(e), the determination to exercise the option will consider, but is not limited to, the Contractor's performance in satisfying contract requirements; for example, receiving positive performance ratings and the Contractor's level of success in implementing and maintaining small business programs, which were evaluated as part of the source selection process and incorporated into the awarded contract.
- (d) The total duration of this contract, including the exercise of any options under this clause, shall not exceed five years.

G.1 FAR 52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

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 these addresses:

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

<http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm>

A. FEDERAL ACQUISITION REGULATION (FAR) (48 CFR CHAPTER 1)

CLAUSE

NUMBER

DATE TITLE

N/A

B. NASA FEDERAL ACQUISITION REGULATION SUPPLEMENT (NFS) (48 CFR CHAPTER 18)

CLAUSE NUMBER	DATE	TITLE
1852.223-71	Dec 1988	FREQUENCY AUTHORIZATION
1852.227-70	May 2002	NEW TECHNOLOGY
1852.227-86	Dec 1987	COMMERCIAL COMPUTER SOFTWARE-LICENSING
1852.242-71	Dec 1988	TRAVEL OUTSIDE OF THE UNITED STATES
1852.242-73	Nov 2004	NASA CONTRACTOR FINANCIAL MANAGEMENT REPORTING

G.2 NFS 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.

Designated Billing & Designated Paying Offices

NASA Shared Services Center (NSSC)

Financial Management Division (FMD) – Accounts Payable

Bldg 1111, C. Road

Stennis Space Center, MS 39529

This is the designated billing office for cost vouchers for purposes of the prompt payment clause 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:

Designated Billing & Designated Paying Offices

NASA Shared Services Center (NSSC)

Financial Management Division (FMD) – Accounts Payable

Bldg 1111, C. Road

Stennis Space Center, MS 39529

- [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:

Contract NNM09AA20C

- [1] One original Standard Form (SF) 1034, SF 1035, or equivalent Contractor's attachment to:

Marshall Space Flight Center, NASA

Attn: Mark York/PS43

Marshall Space Flight Center, AL 35812

- [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:

[a] Copy 1 NASA Contracting Officer

[b] Copy 2 Auditor

[c] Copy 3 Contractor

[d] Copy 4 Contract Administration Office

[e] 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:

Marshall Space Flight Center, NASA

Attn: Mark York/PS43

Marshall Space Flight Center, AL 35812

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.

G.3 **RESERVED**

G.4 **RESERVED**

G.5 NFS 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:

Title	Office Code	Address (including zip code)
New Technology Representative	ED03	NASA Marshall Space Flight Center, 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.

G.6 NFS 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, who shall be specifically appointed by the Contracting Officer in writing in accordance with NASA FAR Supplement 1842.270. "Technical Direction" means a directive to the Contractor 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 Contracting Officer's Technical Representative does not have the authority to, and shall not, issue any instruction purporting to be technical direction that—

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- [1] Constitutes an assignment of additional work outside the performance work statement;
 - [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 Contracting Officer's Technical Representative.
- D. The Contractor shall proceed promptly with the performance of technical direction duly issued by the Contracting Officer's Technical Representative in the manner prescribed by this clause and within the Contracting Officer's Technical Representative's authority. If, in the Contractor's opinion, any instruction or direction by the Contracting Officer's Technical Representative 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—
 - [1] Rescinded in its entirety; or
 - [2] 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 Contracting Officer's Technical Representative shall be at the Contractor's risk.

G.7 NFS 1852.245-70 CONTRACTOR REQUESTS FOR GOVERNMENT- PROVIDED PROPERTY (DEVIATION) (SEP 2007) ALTERNATE 1 (DEVIATION) (SEP 2007)

- A.** The Contractor shall provide all property required for the performance of this contract. The Contractor shall not acquire or construct items of property to which the Government will have title under the provisions of this contract without the Contracting Officer's written authorization. Property which will be acquired as a deliverable end item as material or as a component for incorporation into a deliverable end item is exempt from this requirement.
- B.**
- [1]** In the event the Contractor is unable to provide the property necessary for performance, and the Contractor requests provision of property by the Government, the Contractor's request shall--
 - [a]** Justify the need for the property;
 - [b]** Provide the reasons why contractor-owned property cannot be used;
 - [c]** Describe the property in sufficient detail to enable the Government to screen its inventories for available property or to otherwise acquire property, including applicable manufacturer, model, part, catalog, National Stock Number or other pertinent identifiers;
 - [d]** Combine requests for quantities of items with identical descriptions and estimated values when the estimated values do not exceed \$100,000 per unit; and
 - [e]** Include only a single unit when the acquisition or construction value equals or exceeds \$100,000.
 - [2]** Contracting Officer authorization is required for items the Contractor intends to manufacture as well as those it intends to purchase.
 - [3]** The Contractor shall submit requests to the Contracting Officer no less than 30 days in advance of the date the Contractor would, should it receive authorization, acquire or begin fabrication of the item.
- C.** The Contractor shall maintain copies of Contracting Officer authorizations, appropriately cross-referenced to the individual property record, within its property management system.
- D.** Property furnished from Government excess sources is provided as-is, where-is. The Government makes no warranty regarding its applicability for performance of the contract or its ability to operate. Failure of property

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obtained from Government excess sources under this clause is insufficient reason for submission of requests for equitable adjustments discussed in the clause at 52.245-1, Government Property.

- E.** In the event the Contracting Officer issues written authorization to provide property, the Contractor shall screen Government sources to determine the availability of property from Government inventory or excess property.
1. The Contractor shall review NASA inventories and other authorized Federal excess sources for availability of items that meet the performance requirements of the requested property.
 - i. If the Contractor determines that a suitable item is available from NASA supply inventory, it shall request the item using applicable Center procedures.
 - ii. If the Contractor determines that an item within NASA or Federal excess is suitable, it shall contact the Center Industrial Property Officer to arrange for transfer of the item from the identified source to the Contractor.
 2. If the Contractor determines that the required property is not available from inventory or excess sources, the Contractor shall note the acquisition file with a list of sources reviewed and the findings regarding the lack of availability. If the required property is available, but unsuitable for use, the contractor shall document the rationale for rejection of available property. The Contractor shall retain appropriate cross-referenced documentary evidence of the outcome of those screening efforts as part of its property records system.

G.8 NFS 1852.245-73 FINANCIAL REPORTING OF NASA PROPERTY IN THE CUSTODY OF CONTRACTORS (SEP 2007)

- A.** The Contractor shall submit annually a NASA Form (NF) 1018, NASA Property in the Custody of Contractors, in accordance with the provisions of 1845.505-14, the instructions on the form, subpart 1845.71, and any supplemental instructions for the current reporting period issued by NASA.

B.

- [1]** Subcontractor use of NF 1018 is not required by this clause; however, the Contractor shall include data on property in the possession of subcontractors in the annual NF 1018.

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- [2] The Contractor shall mail the original signed NF 1018 directly to the cognizant NASA Center Deputy Chief Financial Officer, Finance, unless the Contractor uses the NF 1018 Electronic Submission System (NESS) for report preparation and submission.
- [3] One copy shall be submitted (through the Department of Defense (DOD) Property Administrator if contract administration has been delegated to DOD) to the following address: NASA-MSFC Industrial Property Officer, Mail Code: AS/01 Logistics and Services Branch, Marshall Space Flight Center, AL 35812, unless the Contractor uses the NF 1018 Electronic Submission System (NESS) for report preparation and submission.

C.

- [1] The annual reporting period shall be from October 1 of each year through September 30 of the following year. The report shall be submitted in time to be received by October 15. The information contained in these reports is entered into the NASA accounting system to reflect current asset values for agency financial statement purposes. Therefore, it is essential that required reports be received no later than October 15. Some activity may be estimated for the month of September, if necessary, to ensure the NF 1018 is received when due. However, contractors' procedures must document the process for developing these estimates based on planned activity such as planned purchases or NASA Form 533 (NF 533 Contractor Financial Management Report) cost estimates. It should be supported and documented by historical experience or other corroborating evidence, and be retained in accordance with FAR Subpart 4.7, Contractor Records Retention. Contractors shall validate the reasonableness of the estimates and associated methodology by comparing them to the actual activity once that data is available, and adjust them accordingly. In addition, differences between the estimated cost and actual cost must be adjusted during the next reporting period. Contractors shall have formal policies and procedures, which address the validation of NF 1018 data, including data from subcontractors, and the identification and timely reporting of errors. The objective of this validation is to ensure that information reported is accurate and in compliance with the NASA FAR Supplement. If errors are discovered on NF 1018 after submission, the contractor shall contact the cognizant NASA Center Industrial Property Officer (IPO) within 30 days after discovery of the error to discuss corrective action.
- [2] The Contracting Officer may, in NASA's interest, withhold payment until a reserve not exceeding \$25,000 or 5 percent of the amount of the contract, whichever is less, has been set aside, if the Contractor fails to submit annual NF 1018 reports in accordance with 1845.505-14 and any supplemental instructions for the current reporting period issued by NASA. Such reserve

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shall be withheld until the Contracting Officer has determined that NASA has received the required reports. The withholding of any amount or the subsequent payment thereof shall not be construed as a waiver of any Government right.

- D. A final report shall be submitted within 30 days after disposition of all property subject to reporting when the contract performance period is complete in accordance with (b)(1) through (3) of this clause.

G.9 NFS 1852.245-74 IDENTIFICATION AND MARKING OF GOVERNMENT EQUIPMENT (DEVIATION) (SEP 2007)

- A. The Contractor shall identify all equipment to be delivered to the Government using NASA Technical Handbook (NASA-HDBK) 6003, *Application of Data Matrix Identification Symbols to Aerospace Parts Using Direct Part Marking Methods/Techniques*, and NASA Standard (NASA-STD) 6002, *Applying Data Matrix Identification Symbols on Aerospace Parts Handbook*. This includes deliverable equipment listed in the schedule and other equipment when NASA directs physical transfer to NASA or a third party. The Contractor shall identify property in both machine and human readable form unless the use of a machine readable-only format is approved by the NASA Industrial Property Officer.
- B. Property shall be marked in a location that will be human readable, without disassembly or movement of the property, when the items are placed in service unless such placement would have a deleterious effect on safety or on the item's operation.
- C. Concurrent with equipment delivery or transfer, the Contractor shall provide the following data in an electronic spreadsheet format:
- [1] Item Description.
 - [2] Unique Identification Number (License Tag).
 - [3] Unit Price.
 - [4] An explanation of the data used to make the unique identification number.
- D. For items physically transferred under paragraph (a) the following additional data is required:
- [1] Date originally placed in service.
 - [2] Item condition.
 - [3] Date last serviced.

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- E. The data required in paragraphs (c) and (d) shall be delivered to the NASA center receiving activity listed below:

NASA Transportation Officer
Bldg. 220; Attn: Property
Michoud Assembly Facility
13800 Old Gentilly Blvd.
New Orleans, LA 70129

- F. The contractor shall include the substance of this clause, including this paragraph (F), in all subcontracts that require delivery of equipment.

G.10 NFS 1852.245-75 PROPERTY MANAGEMENT CHANGES (DEVIATION) (SEP 2007)

- A. The Contractor shall submit any changes to standards and practices used for management and control of Government property under this contract to the assigned property administrator and Industrial Property Officer (IPO), prior to making the change whenever the change --

- [1] Employs a standard that allows increase in thresholds or changes the timing for reporting loss, damage, or destruction of property;
- [2] Alters physical inventory timing or procedures;
- [3] Alters recordkeeping practices;
- [4] Alters practices for recording the transport or delivery of Government property; or
- [5] Alters practices for disposition of Government property.

- B. The Contractor shall contact the IPO at:

NASA-MSFC Industrial Property Officer
Mail Code: AS41
Marshall Space Flight Center, AL 35812

G.11 NFS 1852.245-76 LIST OF GOVERNMENT PROPERTY FURNISHED PURSUANT TO FAR 52.245-1 (DEVIATION) (SEP 2007)

For performance of work under this contract, the Government will make available Government property identified below or in Attachment J-7, *Government Furnished Property In Accordance With FAR 52.245-1* of this contract on a no-charge-for-use basis pursuant to the clause at FAR 52.245-1, Government Property. The Contractor shall use this property in the performance of this contract at MAF and at other location(s) as may

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be approved by the Contracting Officer. Under FAR 52.245-1, the Contractor is accountable for the identified property.

<u>Item</u>	<u>Quantity</u>	<u>Cost</u>	<u>Date to be Furnished to the Contractor</u>
Attachment J-7-A	All	\$1.507M	07/01/2009
Attachment J-7-B	All	\$1.587M	07/01/2009
Attachment J-7-C	All	N/A- included in J-7-A and J-7-B	07/01/2009

G.12 NFS 1852.245-77 LIST OF GOVERNMENT PROPERTY FURNISHED PURSUANT TO FAR 52.245-2 (DEVIATION) (SEP 2007)

For performance of work under this contract, the Government will make available Government property identified below or in Attachment J-7-D, *Government Furnished Property As-Is, Where-Is (per FAR 52.245-2)*, of this contract on a no-charge-for-use basis pursuant to FAR 52.245-2, Government Property Installation Operation Services. The Contractor shall use this property in the performance of this contract at MAF and at other location(s) as may be approved by the Contracting Officer. Under FAR 52.245-2, "Government Property Installation Operation Services," the Contractor is accountable for the identified property.

<u>Item</u>	<u>Quantity</u>	<u>Cost</u>	<u>Date to be Furnished to the Contractor</u>
Attachment J-7-D	All	\$8.3M	07/01/2009

G.13 NFS 1852.245-78 PHYSICAL INVENTORY OF CAPITAL PERSONAL PROPERTY (DEVIATION) (SEP 2007)

- A.** In addition to physical inventory requirements under the clause at FAR 52.245-1, Government Property, the Contractor shall conduct annual physical inventories for individual property items with an acquisition cost exceeding \$100,000.
- [1]** The Contractor shall inventory --
- [a]** Items of property furnished by the Government;
 - [b]** Items acquired by the Contractor and titled to the Government under the clause at FAR 52.245-1;
 - [c]** Items constructed by the Contractor and not included in the deliverable, but titled to the Government under the clause at FAR 52.245-1; and
 - [d]** Complete but undelivered deliverables.

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- [2] The Contractor shall use the physical inventory results to validate the property record data, specifically location, condition and use status, and to prepare summary reports of inventory as described in paragraph (c) of this clause.

B. Unless specifically authorized in writing by the NASA Industrial Property Officer (IPO), the inventory shall be performed and posted by individuals other than those assigned custody of the items, responsibility for maintenance, or responsibility for posting to the property record. The Contractor may request a waiver from this separation of duties requirement from the NASA IPO, when all of the conditions in either (1) or (2) below are met.

- [1] The Contractor utilizes an electronic system for property identification, such as a laser bar-code reader or radio frequency identification reader, and
 - [a] The programs or software preclude manual data entry of inventory identification data by the individual performing the inventory; and
 - [b] The inventory and property management systems contain sufficient management controls to prevent tampering and assure proper posting of collected inventory data.
- [2] The Contractor has limited quantities of property, limited personnel, or limited property systems; and,
 - [a] The Contractor provides written confirmation that the Government property exists in the recorded condition and location; and
 - [b] The items continue to be used exclusively for performance of the contract or as otherwise authorized by the Contracting Officer.
- [3] The Contractor shall submit the request to the cognizant property administrator and obtain approval from the IPO prior to implementation of the practice.

C. The Contractor shall report the results of the physical inventory to the property administrator and the NASA Industrial Property Officer within 10 calendar days of completion of the physical inventory. The report shall --

- [1] Provide a summary showing number and value of items inventoried; and
- [2] Include additional supporting reports of --
 - [a] Loss, damage or destruction, in accordance with the clause at 52.245-1, Government Property;
 - [b] Idle property available for reuse or disposition; and

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- [c] A summary of adjustments made to location, condition, status, or user as a result of the physical inventory reconciliation.
- D. The Contractor shall retain all physical inventory records, including records of all transactions associated with inventory reconciliation. All records shall be subject to Government review and/or audit.

**G.14 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 Michoud Assembly Facility (MAF). Contractor requests for badging of employees shall be by MSFC Form 1739, "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 MAF Protective Services Office.
- 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" or similar MAF Form when the access is no longer needed.
- C. Requests for copies of MSFC Forms 383-1, and 1739 shall be directed to the MAF Protective Services Office, Michoud Assembly Facility, 13800 Old Gentilly Boulevard, New Orleans, LA 70189.

(End of clause)

**G.15 INSTALLATION-ACCOUNTABLE GOVERNMENT PROPERTY (DEVIATION)
(SEPTEMBER 2007)**

- A. The Government property described in paragraph (c) of this clause may 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 unless authorized by the contracting officer under (b)(1)(iv). Under this clause, the Government retains accountability for, and title to, the property, and the Contractor shall comply with the following:

NASA Procedural Requirements (NPR) 4100, NASA Materials Inventory Management Manual

NASA Procedural Requirements (NPR) 4200, NASA Equipment Management Procedural Requirements

NASA Procedural Requirement (NPR) 4300, NASA Personal Property Disposal Procedural Requirements

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Property not recorded in NASA property systems must be managed in accordance with the requirements of FAR 52.245-1.

The Contractor shall establish and adhere to a system of written procedures to assure continued, effective management control and 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, financial control, and reporting of the property subject to this clause shall be retained by the Government and accomplished within NASA management information systems prescribed 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:
- [1] The Contractor's purchase order shall require the vendor to deliver the property to the installation central receiving area.
 - [2] The Contractor shall furnish a copy of each purchase order, prior to delivery by the vendor, to the installation central receiving area.
 - [3] The Contractor shall establish a record of the property as required by FAR 52.245-1, Government Property, 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.
 - [4] 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 the Industrial Property Officer. The property shall be considered Government furnished and the Contractor shall assume accountability and financial reporting responsibility. The Contractor shall establish records and property control procedures and maintain the property in accordance with the requirements of FAR 52.245-1, Government Property, until its return to the installation. NASA Procedural Requirements related to property loans shall not apply to offsite use of property by contractors.
- 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) of this clause 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.

- C.** The following property and services are provided if checked.

 X Office space, work area space, and utilities. Government telephones are available for official purposes only.

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 X Office furniture.

 Property listed in N/A [Insert attachment number or "not applicable" if no equipment is provided].

- [1] 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.
- [2] 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.
- [a] Supplies from stores stock.
- [b] Publications and blank forms stocked by the installation.
- [c] Safety and fire protection for Contractor personnel and facilities.
- [d] Installation service facilities: [Insert the name of the facilities or "None"].
- [e] Medical treatment of a first-aid nature for Contractor personnel injuries or illnesses sustained during on-site duty.
- [f] Cafeteria privileges for Contractor employees during normal operating hours.
- [g] Building maintenance for facilities occupied by Contractor personnel.
- [h] Moving and hauling for office moves, movement of large equipment, and delivery of supplies. Moving services may be provided on-site, as approved by the Contracting Officer.

(End of clause)

H-1 FAR 52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

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 these addresses:

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

<http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm>

A. FEDERAL ACQUISITION REGULATION (FAR) (48 CFR CHAPTER 1)

CLAUSE

<u>NUMBER</u>	<u>DATE</u>	<u>TITLE</u>
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N/A

B. NASA FEDERAL ACQUISITION REGULATION SUPPLEMENT (NFS) (48 CFR CHAPTER 18)

CLAUSE

<u>NUMBER</u>	<u>DATE</u>	<u>TITLE</u>
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1852.208-81	NOV 2004	RESTRICTIONS ON PRINTING AND DUPLICATING
1852.223-76 REPORTING	JUL 2003	FEDERAL AUTOMOTIVE STATISTICAL TOOL
1852.225-70	FEB 2000	EXPORT LICENSES
1852.228-72 SHUTTLE SERVICES	SEP 1993	CROSS-WAIVER OF LIABILITY FOR SPACE
1852.228-76 STATION ACTIVITIES	DEC 1994	CROSS-WAIVER OF LIABILITY FOR SPACE
1852.228-78	SEP 1993	CROSS-WAIVER OF LIABILITY FOR NASA
EXPENDABLE LAUNCH VEHICLE LAUNCHES		
1852.242-72	AUG 1992	OBSERVANCE OF LEGAL
HOLIDAYS (AUG 1992) - ALTERNATE II (OCT 2000)		

H-2 RESERVED

H-3 CAPITALIZATION OF CONTRACTOR-OWNED PROPERTY

- A.** The Contractor shall replace Government Furnished Property identified in Attachment J-7-D, GFP (As-Is, Where-Is) as required for safe and effective contract performance. The property identified in Attachment J-7-D will become Contractor Property when replaced. Contractor Property shall be capitalized and depreciated in accordance with the Contractor's established cost accounting practices and procedures.
- B.** The Contractor shall maintain complete records of equipment that are subject to this clause, including date of purchase, estimated service life, purchase price, depreciation base, method and schedule, and amount of depreciation recorded to date. Records related to Contractor capitalized property shall be made available to the Contracting Officer within 5 work days of the request.
- C.** If upon expiration or termination of this contract the Government does not thereafter contract with the Contractor for the performance of the same, or substantially the same, services contemplated by this contract, the Contractor shall, upon request by the successor contractor(s), offer for sale all or a portion of the capitalized property purchased for performance under this contract to the successor contractor(s) at net book value or current value, subject to reasonable terms and conditions regarding payment and other matters to be agreed upon by the Contractor and successor contractors.

H-4 NFS 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.
- (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.

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(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 frequency 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 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-5 NFS 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-6 NFS 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 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.

(b)(4)



H-7 ASSOCIATE CONTRACTOR AGREEMENT (ACA)

- A.** Given the unique role of this contract for supporting all other entities at MAF, the Contractor shall engage in cooperative relationships that facilitate effective management of overall Center operations. The Contractor shall establish ACAs as required for coordination and exchange of information with other contractors during the MSFOC contract period of performance. The information to be exchanged shall be that required by the other contractors in the execution of their respective contract requirements. The Contractor shall pursue and foster cooperative efforts and goodwill in a manner that will benefit MAF with

increased safety, efficiency, and productivity. The contracts currently in place include as a minimum but not limited to: External Tank, ARES Upper Stage, ARES Instrument Unit, ORION, and NCAM.

- B. The Contractor shall negotiate formal guidelines with the other contractors to address coordination, cooperation, and communication. The Contractor shall establish the means for the exchange of such data and communications as needed in order to keep other project elements fully informed, and minimize Government involvement.
- C. The effectiveness of this joint cooperation will be evaluated as part of the contract award-fee process, as defined in the identified in Section J, Attachment J-5, *Performance Evaluation Plan* of this contract. Successful performance of the Contractor will be determined by the Government's assessment of the overall and combined performance of the requirements of the other contractors.

H-8 COMPUTING SERVICES

A. Outsourcing Desktop Initiative for NASA (ODIN) contract and successors

- [1] Desktops, workstations, laptops, office automation software, printers, peripherals, PDAs, cell phones, pagers, and associated services (e.g., user accounts, e-mail, and directory services) needed to support Contractor personnel will be Government furnished through the Outsourcing Desktop Initiative for NASA (ODIN) contract and its successor in accordance with G.15, "NFS 1852.245-71, Installation-Accountable Government Property."
- [2] For any IT resources identified outside paragraph (a)(1) above that the Contractor desires to purchase outside of ODIN, the Contractor shall submit a request for waiver through the Contracting Officer's Technical Representative to the MSFC Chief Information Officer (CIO) for approval to purchase IT resources outside ODIN.
- [3] All restricted commercial computer software procured by the Contractor pursuant to this clause shall be delivered to the Government with restricted rights as provided under FAR 52.227-19(c)(2).

B. Solutions for Enterprise-wide Procurement (SEWP) contracts and successors

- [1] For items authorized to be purchased outside of ODIN, the Contractor has the authority to purchase hardware and software under NASA's Solutions for Enterprise-Wide Procurement (SEWP) contracts. The SEWP catalog can be accessed on the World Wide Web at <http://www.sewp.nasa.gov>

H-9 CONTRACTOR ON-SITE REPRESENTATIVE

The Contractor shall appoint a representative at the work site with full authority to receive and execute, on behalf of the Contractor, such contract modifications, notices, policy directives, etc., as may be issued pursuant to the terms of this contract.

H-10 ASBESTOS-CONTAINING BUILDING MATERIALS

- A.** Asbestos-Containing Building Materials (ACBM) are known to be present in facilities assigned under the scope of this contract. The Government will provide information regarding the location and quantity of known ACBM in NASA-MAF facilities to the facility tenant organizations through the Environmental Health office.
- B.** Special requirements, coordination, and precautions will apply to any work taking place under contracts that involves disturbance of ACBM. Contractors whose contracts require work involving ACBM are required to provide a written program for such work as part of its health and safety plan which is consistent with the requirements of 29 CFR §1926.1101. The Contractor shall coordinate any such work involving ACBM with Environmental, Health, Fire Services, and any other resident government or Contractor organization whose employees may have access to the work location.

H-11 CONFINED SPACE WORK REQUIREMENTS

- A.** Confined Space Definition: A space that (a) is large enough and so configured that an employee can bodily enter and perform assigned work; (b) has limited or restricted means for entry or exit (e.g. tanks, vessels, silos, storage bins, hoppers, vaults, trenches, and pits); and (c) is not designed for continuous employee occupancy.
- B.** Special requirements, coordination, and precautions will apply to any contract work taking place in confined spaces. Each Contractor contracted to perform work in confined spaces is required to provide a written program for such work as part of its health and safety plan which is consistent with the requirements of 29 CFR §1910.146. For work in telecommunications manholes, provisions of 29 CFR §1910.268(o) are also applicable. The Contractor shall coordinate any such work in confined spaces with Environmental Health, Fire Services, and any other resident government or Contractor organization whose employees may have access to the work location. The provision of Environmental Health services by the government does not prohibit the Contractor from providing their own atmospheric testing. Government provided services include environmental health monitoring and consultation support for testing of atmospheres in confined spaces as well as fire rescue and emergency medical services.

- C. Entry into and work in confined spaces shall be in accordance with the requirements of NPR 1820.4, *Respiratory Protection Program*, NPR 1840.19, *Industrial Hygiene Programs*, and all other applicable clauses of this contract.
- D. Confined spaces, which contain water, shall be pumped out by the Contractor prior to scheduling a confined space entry check.

H-12 MSFC 52.223-92 ENVIRONMENTAL - GENERAL CLAUSE (DEC 2006)

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 policies 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-13 MSFC 52.223-93 ADVANCE NOTIFICATION OF CONTRACTOR EMPLOYEE WORKPLACE INCIDENTS

The Contractor agrees to coordinate with the Investigations Unit Lead Investigator in the MSFC Protective Services Office before taking any action to discipline or involuntarily terminate any of its onsite employees. In addition, the Contractor agrees to immediately notify the Investigations Unit Lead Investigator in the MSFC Protective Services Office if any of its onsite employees exhibit any established indicators of potentially violent behavior..

(End of clause)

H-14 RESTRICTIONS ON COMPETITION

- A. The Contractor and its major subcontractors shall not be a user(s)/tenant(s) of MAF at any time during the performance of this contract. This means that the contractor and its major subcontractor cannot be (1) a parent of, (2) a subsidiary of, (3) a partner in a joint venture with, (4) an owner of, (5) owned by, or (6) otherwise inappropriately affiliated with a user(s)/tenant(s) of MAF at any time during the performance of MSFOC.

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- B.** The Contractor or its major subcontractors may have a contractual relationship with a user(s)/tenant(s) of MAF (e.g., either entity may be the subcontractor of the other) provided (1) the performance of the contract does not require any use of MAF resources, (2) the performance of the contract does not require a continuous presence (including a continuous presence on a temporary basis) at MAF, and (3) an acceptable OCI plan (e.g., a firewall) is incorporated in this contract and implemented to protect sensitive or proprietary information associated with MAF operations.
- C.** The Contractor shall report any violation of this clause to the Contracting Officer. This report shall include a description of the violation and the actions the Contractor has taken or proposes to take to mitigate and avoid repetition of the violation. After conducting inquiries and discussions as necessary, the Contracting Officer and the Contractor shall agree on appropriate corrective action, if any, or the Contracting Officer shall direct such action, subject to the terms of this contract.
- D.** Any breach of the above restrictions may result (1) this contract being terminated for default, (2) disqualification of the contractor for subsequent contractual efforts, or (3) other remedies as may be available under law or regulation. If in compliance with this clause, the contractor discovers and promptly reports an organizational conflict of interest subsequent to contract award, the Contracting Officer may choose to undertake termination of this contract for convenience of the Government, when such termination is deemed to be in the best interest of the Government.
- E.** For purposes of the clause, a major subcontractor is an entity having a subcontract equal to or greater than \$1,000,000. Vendors performing infrequent or periodic tasks (e.g. elevator repairs/inspections, heating and cooling repairs/inspections, vending machine service, delivery of consumables, garbage/trash collection, etc.) shall not be considered major subcontractor's.
- F.** Providers of Government-furnished Services identified in this contract shall not be considered user(s)/tenant(s) of MAF.

H-15 NFS 1852.245-82 OCCUPANCY MANAGEMENT REQUIREMENTS (DEVIATION) (SEP 2007)

- A.** In addition to the requirements of the clause at FAR 52.245-1, Government Property, the Contractor shall comply with the following in performance of work in and around Government real property:

 - [2] NPD 8800.14, Policy for Real Property Management
 - [3] NPR 8831.2, Facility Maintenance Management
- B.** The Contractor shall obtain the written approval of the Contracting Officer before installing or removing Contractor-owned property onto or into any Government real property or when movement of Contractor-owned property may damage or destroy Government-owned

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property. The Contractor shall restore damaged property to its original condition at the Contractor's expense.

- C. The Contractor shall not acquire, construct or install any fixed improvement or structural alterations in Government buildings or other real property without the advance, written approval of the Contracting Officer. Fixed improvement or structural alterations, as used herein, means any alteration or improvement in the nature of the building or other real property that, after completion, cannot be removed without substantial loss of value or damage to the premises. Title to such property shall vest in the Government.
- D. The Contractor shall report any real property or any portion thereof when it is no longer required for performance under the contract, as directed by the Contracting Officer.

H-16 NFS 1852.245-83 REAL PROPERTY MANAGEMENT REQUIREMENTS (DEVIATION) (SEP 2007)

- A. In addition to the requirements of the FAR Government Property Clause (FAR 52,245-1) the Contractor shall comply with the following in performance of any maintenance, construction, modification, demolition, or management activities of any Government real property:
 - [1] NPD 8800.14, Policy for Real Property Management
 - [2] NPR 8831.2, Facility Maintenance Management
- B. Within 30 calendar days following award, the Contractor shall provide a plan for maintenance of Government real property provided for use under this contract. The Contractor's maintenance program shall enable the identification, disclosure, and performance of normal and routine preventative maintenance and repair. The Contractor shall disclose and report to the Contracting Officer the need for replacement and/or capital rehabilitation. Upon acceptance by the Contracting Officer, the program shall become a requirement under this contract.
- C. Title to parts replaced by the Contractor in carrying out its normal maintenance obligations shall pass to and vest in the Government upon completion of their installation in the facilities. The Contractor shall keep the property free and clear of all liens and encumbrances.
- D. The Contractor shall keep records of all work done to real property, including plans, drawings, charts, warranties, and manuals. Records shall be complete and current. Record of all transactions shall be auditable. The Government shall have access to these records at all reasonable times, for the purposes of reviewing, inspecting, and evaluating the Contractor's real property management effectiveness. When real property is disposed of under this contract, the Contractor shall deliver the related records to the Government.

- E. The Contracting Officer may direct the Contractor in writing to reduce the work required by the maintenance program authorized in paragraph (b) at any time.

H.17 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:

(1) A functional description of the work identifying the objectives or results desired from the contemplated task order.

(2) Proposed performance standards to be used as criteria for determining whether the work requirements have been met.

(3) 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.18 SUPPLEMENTAL TASK ORDERING PROCEDURES

(a) This clause supplements the Task Ordering Procedure defined in clause H.19, Task Ordering Procedure.

(b) Work to be performed under this portion of the requirement will be within the parameters of the Attachment J-1 PWS, Section 11.0, as well as Attachment J-2 PWS 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-14, IDIQ Task Order Flow Process.

(c) When the Government issues a Task Order Request (TOR) in accordance with paragraph (b) of Clause H.17, 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-10, Schedule of IDIQ Fully Burdened Labor Rates for Prime and Major Subcontractors, 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-5, 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 2). 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 and Clause B.5, 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-16, IDIQ Listing of Task Orders, 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).

(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.19 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.

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(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.20 SMALL DISADVANTAGED BUSINESS PARTICIPATION - CONTRACT TARGETS

(a) FAR 19.1202-4(a) requires that SDB subcontracting targets be incorporated in the Contract. Targets for this contract are as follows:

*NAICS Industry

<u>Subsectors</u>	<u>Dollar Target</u>	<u>Percent of Contract Value</u>
561210	\$49.3M	10%

Total

*North American Industry Classification System (NAICS) Industry Subsectors as determined by the Department of Commerce

(b) FAR 19.1202-4(b) requires that SDB concerns that are specifically identified by the offeror be listed in the contract when the extent of the identification of such subcontractors was part of the subfactor on Small Business Utilization. SDB concerns (subcontractors) specifically identified by the offeror are as follows:

Name of Concern(s):	Qualis Corporation
	Sierra Lobo
	Southern University

The Contractor shall notify the Contracting Officer of any substitutions of the firms listed in paragraph

(a) if the replacement contractor is not an SDB concern.

(c) If the prime offeror is an SDB that has waived the price evaluation adjustment, the target for the work it intends to perform as a prime Contractor is as follows:

<u>Dollars</u>	<u>Percent of Contract Value</u>
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Not Applicable

(End of clause)

H.21 NATIONAL LABOR RELATIONS ACT

The Contractor shall comply with the requirements of the National Labor Relations Act.

As a Government Contracting Activity, NASA recognizes the legal right of contractor employees and unions to engage in collective bargaining with our contractors (NPR 5200.1D, Chapter 1,

Paragraph 1.2), as afforded them by the National Labor Relations Act. Therefore, the Contractor agrees to maintain policies and practices that are congruous with these mandatory provisions of law.

(End of clause)

H.22 RESERVE GATE PROCEDURE

In the event of a labor dispute or work stoppage, the Government can restrict the ingress and egress of the contractor's employees and suppliers to a specific gate. The Contractor agrees to have the employees re-badged (if necessary) and to direct them and all suppliers to utilize only the gate designated as the reserve gate.

(End of clause)

H.23 CONTRACTOR INNOVATIONS AND CORPORATE COMMITMENTS

(b)(4)



Pages 44 through 47 redacted for the following reasons:

(b)(4)

I-1 FAR 52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

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 these addresses:

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

<http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm>

A. FEDERAL ACQUISITION REGULATION (FAR) (48 CFR CHAPTER 1)

<u>CLAUSE NUMBER</u>	<u>DATE</u>	<u>TITLE</u>
52.202-1	JUL 2004	DEFINITIONS
52.203-3	APR 1984	GRATUITIES
52.203-5	APR 1984	COVENANT AGAINST CONTINGENT FEES
52.203-6	SEP 2006	RESTRICTIONS ON SUBCONTRACTOR SALES TO THE GOVERNMENT
52.203-7	JUL 1995	ANTI-KICKBACK PROCEDURES
52.203-8	JAN 1997	CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY
52.203-10	JAN 1997	PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY
52.203-12	SEP 2007	LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS
52.203-13	DEC 2007	CONTRACTOR CODE OF BUSINESS ETHICS AND CONDUCT
52.203-14	DEC 2007	DISPLAY OF HOTLINE POSTER(S)
52.204-2	AUG 1996	SECURITY REQUIREMENTS
52.204-4	AUG 2000	PRINTED OR COPIED DOUBLE- SIDED ON RECYCLED PAPER
52.204-7	JUL 2006	CENTRAL CONTRACTOR REGISTRATION
52.204-9	SEP 2007	PERSONAL IDENTITY VERIFICATION OF CONTRACTOR PERSONNEL

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52.204-10	SEP 2007	REPORTING SUBCONTRACT AWARDS
52.209-6	SEP 2006	PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT
52.215-2	JUN 1999	AUDIT AND RECORDS – NEGOTIATION
52.215-8	OCT 1997	ORDER OF PRECEDENCE -
52.215-11	OCT 1997	UNIFORM CONTRACT FORMAT
52.215-13	OCT 1997	PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA-MODIFICATIONS
52.215-14	OCT 1997	SUBCONTRACTOR COST OR PRICING DATA -- MODIFICATIONS
52.215-15	OCT 2004	INTEGRITY OF UNIT PRICES
52.215-18	JUL 2005	PENSION ADJUSTMENTS AND ASSET REVISIONS
52.215-19	OCT 1997	REVERSION OR ADJUSTMENT OF PLANS FOR POSTRETIREMENT BENEFITS (PRB) OTHER THAN PENSIONS
52.215-21	OCT 1997	NOTIFICATION OF OWNERSHIP CHANGES
52.216-7	DEC 2002	OTHER THAN COST OR PRICING DATA—MODIFICATIONS (ALTERNATE II AND III)
52.219-4	JUL 2005	ALLOWABLE COST AND PAYMENT
52.219-8	MAY 2004	NOTICE OF PRICE EVALUATION
52.219-9	NOV 2007	PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS
52.219-16	JAN 1999	UTILIZATION OF SMALL BUSINESS CONCERNS
52.219-23	SEP 2005	SMALL BUSINESS SUBCONTRACTING PLAN (ALTERNATE II)
52.219-25	OCT 1999	LIQUIDATED DAMAGES— SUBCONTRACTING PLAN
		NOTICE OF PRICE EVALUATION
		ADJUSTMENT FOR SMALL DISADVANTAGED BUSINESS CONCERNS
		SMALL DISADVANTAGED BUSINESS PARTICIPATION

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Modification 0001

52.222-1	FEB 1997	PROGRAM – DISADVANTAGED STATUS AND REPORTING NOTICE TO THE GOVERNMENT OF LABOR DISPUTES
52.222-2	JUL 1990	PAYMENT FOR OVERTIME PREMIUMS [Insert in Section B-7]
52.222-3	JUN 2003	CONVICT LABOR
52.222-4	JUL 2005	CONTRACT WORK HOURS AND SAFETY STANDARDS ACT – OVERTIME COMPENSATION
52.222-6 (*)	JUL 2005	DAVIS-BACON ACT
52.222-7	FEB 1988	WITHHOLDING OF FUNDS
52.222-8	FEB 1988	PAYROLLS AND BASIC RECORDS
52.222-9	JULY 2005	APPRENTICES AND TRAINEES
52.222-10	FEB 1988	COMPLIANCE WITH COPELAND ACT REQUIREMENTS
52.222-11	JUL 2005	SUBCONTRACTS (LABOR STANDARDS)
52.222-12	FEB 1988	CONTRACT TERMINATION- DEBARMENT
52.222-13 (*)	FEB 1988	COMPLIANCE WITH DAVIS- BACON AND RELATED ACT REGULATIONS
52.222-14	FEB 1988	DISPUTES CONCERNING LABOR STANDARDS
52.222-15	FEB 1988	CERTIFICATION OF ELIGIBILITY
52.222-16	FEB 1988	APPROVAL OF WAGE RATES
52.222-19	FEB 2008	CHILD LABOR-COOPERATION WITH AUTHORITIES AND REMEDIES
52.222-21	FEB 1999	PROHIBITION OF SEGREGATED FACILITIES
52.222-23	FEB 1999	NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION
52.222-26	MAR 2007	EQUAL OPPORTUNITY
52.222-27	FEB 1999	AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION
52.222-30 (*)	DEC 2001	DAVIS-BACON ACT—PRICE ADJUSTMENT (NONE OR SEPARATELY SPECIFIED METHOD)

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Modification 0001

52.222-35	SEP 2006	EQUAL OPPORTUNITY FOR SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS
52.222-36	JUN 1998	AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES
52.222-37	SEP 2006	EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS
52.222-41	NOV 2007	SERVICE CONTRACT ACT OF 1965, AS AMENDED
52.222-43	NOV 2006	FAIR LABOR STANDARDS ACT AND SERVICE CONTRACT ACT - PRICE ADJUSTMENT (MULTIPLE YEAR AND OPTION CONTRACTS)
52.222-50	AUG 2007	COMBATING TRAFFICKING IN PERSONS
52.223-3	JAN 1997	HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA (ALTERNATE I)[Insert "MSDS System"]
52.223-5	AUG 2003	POLLUTION PREVENTION AND RIGHT TO KNOW INFORMATION (ALTERNATE I)
52.223-6	MAY 2001	DRUG-FREE WORKPLACE
52.223-10	AUG 2000	WASTE REDUCTION PROGRAM
52.223-12	MAY 1995	REFRIGERATION EQUIPMENT AND AIR CONDITIONERS
52.223-14	AUG 2003	TOXIC CHEMICAL RELEASE REPORTING [Note: All reports must be submitted to the Government through the Contracting Officer]
52.223-16	DEC 2007	IEEE 1680 STANDARD FOR THE ENVIRONMENTAL ASSESSMENT OF PERSONAL COMPUTER PRODUCTS
52.224-1	APR 1984	PRIVACY ACT NOTIFICATION
52.224-2	APR 1984	PRIVACY ACT
52.225-1 (**)	JUN 2003	BUY AMERICAN ACT – SUPPLIES
52.225-8	FEB 2000	DUTY-FREE ENTRY
52.225-9 (**)	JAN 2005	BUY AMERICAN ACT–
52.225-13	FEB 2006	CONSTRUCTION MATERIALS RESTRICTIONS ON CERTAIN FOREIGN PURCHASES

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52.226-1	JUN 2000	UTILIZATION OF INDIAN ORGANIZATIONS AND INDIAN-OWNED ECONOMIC ENTERPRISES
52.227-1	DEC 2007	AUTHORIZATION AND CONSENT
52.227-2	DEC 2007	NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT
52.227-4	DEC 2007	PATENT INDEMNITY—CONSTRUCTION CONTRACTS
52.227-14	DEC 2007	RIGHTS IN DATA - GENERAL
52.228-7	MAR 1996	INSURANCE-LIABILITY TO THIRD PERSONS
52.230-2	APR 1998	COST ACCOUNTING STANDARDS
52.230-6	MAR 2008	ADMINISTRATION OF COST ACCOUNTING STANDARDS
52.232-9	APR 1984	LIMITATION ON WITHHOLDING OF PAYMENTS
52.232-17	JUN 1996	INTEREST
52.232-22	APR 1984	LIMITATION OF FUNDS
52.232-23	JAN 1986	ASSIGNMENT OF CLAIMS
52.232-25	OCT 2003	PROMPT PAYMENT (ALTERNATE I)
52.232-33	OCT 2003	PAYMENT BY ELECTRONIC FUNDS TRANSFER – CENTRAL CONTRACTOR REGISTRATION
52.233-1	JUL 2002	DISPUTES (ALTERNATE I)
52.233-4	OCT 2004	APPLICABLE LAW FOR BREACH OF CONTRACT CLAIM
52.237-2	APR 1984	PROTECTION OF GOVERNMENT BUILDINGS, EQUIPMENT, AND VEGETATION
52.237-3	JAN 1991	CONTINUITY OF SERVICES
52.237-11	AUG 2007	ACCEPTING AND DISPENSING OF \$1 COIN
52.242-1	APR 1984	NOTICE OF INTENT TO DISALLOW COSTS
52.242-3	MAY 2001	PENALTIES FOR UNALLOWABLE COSTS
52.242-4	JAN 1997	CERTIFICATION OF FINAL INDIRECT COSTS
52.242-13	JUL 1995	BANKRUPTCY
52.243-2	AUG 1987	CHANGES—COST-REIMBURSEMENT (ALTERNATE II APR 1984) and (ALTERNATE III APR 1984)
52.243-7	APR 1984	NOTIFICATION OF CHANGES
52.244-2	JUN 2007	SUBCONTRACTS

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52.244-5	DEC 1996	COMPETITION IN SUBCONTRACTING
52.244-6	MAR 2007	SUBCONTRACTS FOR COMMERCIAL ITEMS
52.245-1	JUN 2007	GOVERNMENT PROPERTY
52.245-2***	JUN 2007	GOVERNMENT PROPERTY INSTALLATION OPERATION SERVICES
52.245-9	JUN 2007	USE AND CHARGES
52.246-25	FEB 1997	LIMITATION OF LIABILITY— SERVICES
52.247-1	FEB 2006	COMMERICAL BILL OF LADING NOTATIONS (COST REIMBURSABLE) [Insert "NASA" and "Building 220, 13800 Old Gentilly Blvd., New Orleans, LA 70189"]
52.247-63	JUN 2003	PREFERENCE FOR U.S.-FLAG AIR CARRIERS
52.248-1	FEB 2000	VALUE ENGINEERING
52.249-6	MAY 2004	TERMINATION (COST REIMBURSEMENT) (ALTERNATE I)
52.249-14	APR 1984	EXCUSABLE DELAYS
52.251-1	APR 1984	GOVERNMENT SUPPLY SOURCES
52.251-2	JAN 1991	INTERAGENCY FLEET MANAGEMENT SYSTEM VEHICLES AND RELATED SERVICES
52.253-1	JAN 1991	COMPUTER GENERATED FORMS

8. NASA FAR SUPPLEMENT (NFS) (48 CFR CHAPTER 18)

<u>CLAUSE NUMBER</u>	<u>DATE</u>	<u>TITLE</u>
1852.216-89	JUL 1997	ASSIGNMENT AND RELEASE FORMS
1852.219-74	SEP 1990	USE OF RURAL AREA SMALL BUSINESSES
1852.219-75	MAY 1999	SMALL BUSINESS SUBCONTRACTING REPORTING
1852.219-77	MAY 1999	NASA MENTOR-PROTÉGÉ PROGRAM

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Modification 0003

1852.219-79	MAR 1999	MENTOR REQUIREMENTS AND EVALUATION
1852.223-74	MAR 1996	DRUG-AND ALCOHOL-FREE WORKFORCE
1852.225-70	FEB 2000	EXPORT LICENSE
1852.227-14		RIGHTS IN DATA-GENERAL
1852.236-73	DEC 1988	HURRICANE PLAN
1852.237-70	DEC 1988	EMERGENCY EVACUATION PROCEDURES INFORMATION
1852.242-78	APR 2001	EMERGENCY MEDICAL SERVICES AND EVACUATION
1852.243-71	MAR 1997	SHARED SAVINGS

(*) – Note: Davis-Bacon will apply to:

- PWS J-1, WBS 4.5 Maintenance Projects
- PWS J-1, WBS 10.0 Construction Management
- PWS J-2, WBS 2.0 Rehabilitation of Contractor Acquired Property
- PWS J-2, WBS 4.0 Construction of Local Projects
- PWS J-2, WBS 6.0 Construction of Facilities

(*) – Note: Service Contract Act of 1965 will apply to:

- Balance of PWS J-1 and PWS J-2

(**) – Note: Buy American Act - Construction will apply to:

- PWS J-1, WBS 4.5 Maintenance Projects
- PWS J-1, WBS 10.0 Construction Management
- PWS J-2, WBS 2.0 Rehabilitation of Contractor Acquired Property
- PWS J-2, WBS 4.0 Construction of Local Projects
- PWS J-2, WBS 6.0 Construction of Facilities

(**) – Note: Buy American Act will apply to:

- PWS J-1, WBS 2.3.1 Emergency Management
- PWS J-1, WBS 4.2 Preventive Maintenance
- PWS J-2, WBS 4.3 Corrective Maintenance
- PWS J-1, WBS 7.2 Supply and Material Management
- PWS J-2, WBS 1.0 Contractor Acquired Property

(***) – Note: In paragraph (e), insert "See Attachment J-7-D"

I-2 FAR 52.204-1 APPROVAL OF CONTRACT (DEC 1989)

This Contract is subject to the written approval of the MSFC Procurement Officer and shall not be binding until so approved.

I- 3 FAR 52.219-28 POST-AWARD SMALL BUSINESS PROGRAM REPRESENTATION (JUNE 2007)

- (a) *Definitions.* As used in this clause—*Long-term contract* means a contract of more than five years in duration, including options. However, the term does not include contracts that exceed five years in duration because the period of performance has been extended for a cumulative period not to exceed six months under the clause at 52.217-8, Option to Extend Services, or other appropriate authority. *Small business concern* means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR part 121 and the size standard in paragraph (c) of this clause.
- (b) If the Contractor represented that it was a small business concern prior to award of this contract, the Contractor shall rerepresent its size status according to paragraph (e) of this clause or, if applicable, paragraph (g) of this clause, upon the occurrence of any of the following:
- (1) Within 30 days after execution of a novation agreement or within 30 days after modification of the contract to include this clause, if the novation agreement was executed prior to inclusion of this clause in the contract.
 - (2) Within 30 days after a merger or acquisition that does not require a novation or within 30 days after modification of the contract to include this clause, if the merger or acquisition occurred prior to inclusion of this clause in the contract.
 - (3) For long-term contracts— (i) Within 60 to 120 days prior to the end of the fifth year of the contract; and (ii) Within 60 to 120 days prior to the exercise date specified in the contract for any option thereafter. (c) The Contractor shall rerepresent its size status in accordance with the size standard in effect at the time of this rerepresentation that corresponds to the North American Industry Classification System (NAICS) code assigned to this contract. The small business size standard corresponding to this NAICS code can be found at <http://www.sba.gov/services/contractingopportunities/sizestandardstopics/>. (d) The small business size standard for a Contractor providing a product which it does not manufacture itself, for a contract other than a construction or service contract, is 500 employees.
- (e) Except as provided in paragraph (g) of this clause, the Contractor shall make the rerepresentation required by paragraph (b) of this clause by validating or updating all its representations in the Online Representations and Certifications Application and its data in the Central Contractor Registration, as necessary, to ensure they reflect current status. The Contractor shall notify the contracting office by e-mail, or otherwise in writing, that the data have been validated or updated, and provide the date of the validation or update.
- (f) If the Contractor represented that it was other than a small business concern prior to award of this contract, the Contractor may, but is not required to, take the actions required by paragraphs (e) or (g) of this clause.
- (g) If the Contractor does not have representations and certifications in ORCA, or does not have a representation in ORCA for the NAICS code applicable to this contract, the Contractor is required to complete the following rerepresentation and submit it to the

contracting office, along with the contract number and the date on which the rerepresentation was completed: The Contractor represents that it ☐ is, ☐ is not a small business concern under NAICS Code _____ assigned to contract number _____.

Not Applicable

(End of clause)

I- 4 FAR 52.222-39 NOTIFICATION OF EMPLOYEE RIGHTS CONCERNING PAYMENT OF UNION DUES OR FEES (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 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 14th 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,

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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;
 - (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- 5 FAR 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

Employee Class	Monetary Wage—Fringe Benefits
SEE ATTACHMENT J-19	

(End of clause)

I- 6 FAR 52.223-7 NOTICE OF RADIOACTIVE MATERIALS (JAN 1997)

(a) The Contractor shall notify the Contracting Officer or designee, in writing, 7 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). * 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- 7 FAR 52.223-9 ESTIMATE OF PERCENTAGE OF RECOVERED MATERIAL CONTENT FOR EPA-DESIGNATED PRODUCTS (AUG 2000)

(a) *Definitions.* As used in this clause—"Post consumer 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. Post consumer 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. **FAC 2005-21 DECEMBER 7, 2007**

(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 post consumer material content; and (2) Submit this estimate to the Contracting Officer.

(End of clause)

I- 8 FAR 52.252-6 AUTHORIZED DEVIATIONS IN CLAUSES (APR 1984)

(a) The use in this solicitation or contract of any Federal Acquisition Regulation (48 CFR Chapter 1) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the date of the clause.

(b) The use in this solicitation or contract of any NASA FAR Supplement (48 CFR Chapter 18) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

I- 9 RESERVED

I- 10 NFS 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.

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- (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 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);
 - (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

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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
 - (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- 11 NFS 1852.215-84 OMBUDSMAN (ALTERNATE I)(OCT 2003)

A. An ombudsman has been appointed to hear and facilitate the resolution of concerns from offerors, potential offerors, and Contractors during the pre-award and post-award 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,

Ms. Robin N. Henderson,
Mail Code: DE01
Marshall Space Flight Center, AL 35812
Telephone Number: 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.

I- 12 MSFC 52.252-90 REPRESENTATIONS, CERTIFICATIONS, AND OTHER STATEMENTS OF OFFERORS OR QUOTERS INCORPORATED BY REFERENCE (FEB 2001)

The Representations, Certifications, and Other Statements of Offerors or Quoters (Section K of the solicitation document) as completed by the Contractor are hereby incorporated in their entirety by reference, with the same force and effect as if they were given in full text.

(End of clause)

I- 13 NFS 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- 14 NFS 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

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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)

I- 15 NFS 1852.237-72 ACCESS TO SENSITIVE INFORMATION (JUNE 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- 16 NFS 1852.237-73 RELEASE OF SENSITIVE INFORMATION (JUNE 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:

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- 17 NFS 1852.243-70 ENGINEERING CHANGE PROPOSALS (OCT 2001)

- (a) Definitions.

"ECP" means an Engineering Change Proposal (ECP) which is a proposed engineering change and the documentation by which the change is described, justified, and submitted to the procuring activity for approval or disapproval.
- (b) Either party to the contract may originate ECPs. Implementation of an approved ECP may occur by either a supplemental agreement or, if appropriate, as a written change order to the contract.
- (c) Any ECP submitted to the Contracting Officer shall include a "not-to-exceed" ____ [price or estimated cost] increase or decrease adjustment amount, if any, and the required [time of delivery or period of performance] adjustment, if any, acceptable to the originator of the ECP. If the change is originated within the Government, the Contracting Officer shall obtain a written agreement with the contractor regarding the "not-to-exceed" ____ [price or estimated cost] and [delivery or period of performance] adjustments, if any, prior to issuing an order for implementation of the change.
- (d) After submission of a contractor initiated ECP, the contracting officer may require the contractor to submit the following information:
 - (1) Cost or pricing data in accordance with FAR 15.403-5 if the proposed change meets the criteria for its submission under FAR 15.403-4; or
 - (2) Information other than cost or pricing data adequate for contracting officer determination of price reasonableness or cost realism. The contracting officer reserves the right to request additional information if that provided by the contractor is considered inadequate for that purpose. If the contractor claims applicability of one of the exceptions to submission of cost or pricing data, it shall cite the exception and provide rationale for its applicability.
- (e) If the ECP is initiated by NASA, the contracting officer shall specify the cost information requirements, if any.

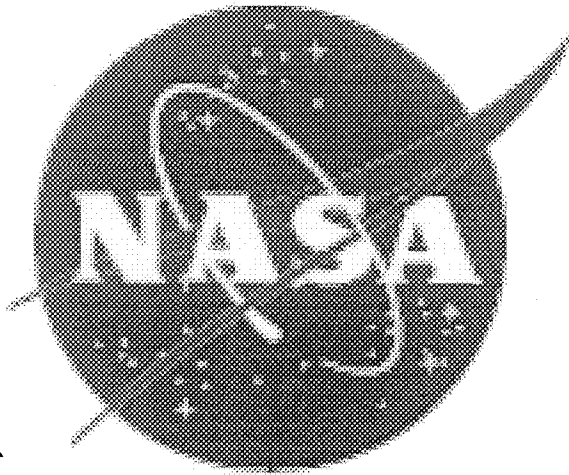
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Contract NNM09AA20C

Section J

List of Documents, Exhibits, and Other Attachments

Attachment	J-1	MSFOC Performance Work Statement
	J-1-A	Performance Standards
	J-1-B	Performance Timetables
	J-1-C	Manufacturing Support Requirements & Timeline
Attachment	J-2	Facilities Performance Work Statement
Attachment	J-3	Data Procurement Document
Attachment	J-4	Small Business and SDB Subcontractor Plan
Attachment	J-5	Performance Evaluation Plan
Attachment	J-6	Government Furnished Services
Attachment	J-7	Government Furnished Property
	J-7-A	Real Property List
	J-7-B	Government Non-Collateral Equipment List
	J-7-C	Government Collateral Equipment List
	J-7-D	As-Is, Where-Is (per FAR 52.245-2)
Attachment	J-8	Government Furnished Facilities
Attachment	J-9	Contractor Acquired Property
Attachment	J-10	Schedule of IDIQ Fully Burdened (Except Fee) NTE
		Labor Rates for Prime and Major Subcontractors
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Attachment	J-14	IDIQ Task Order Process
Attachment	J-15	IDIQ Task Order Procedures
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Attachment	J-17	Register of Davis-Bacon Wage Determination
Attachment	J-18	Register of Service Contract Wage Determination
Attachment	J-19	Statement of Equivalent Rates for Federal Hires



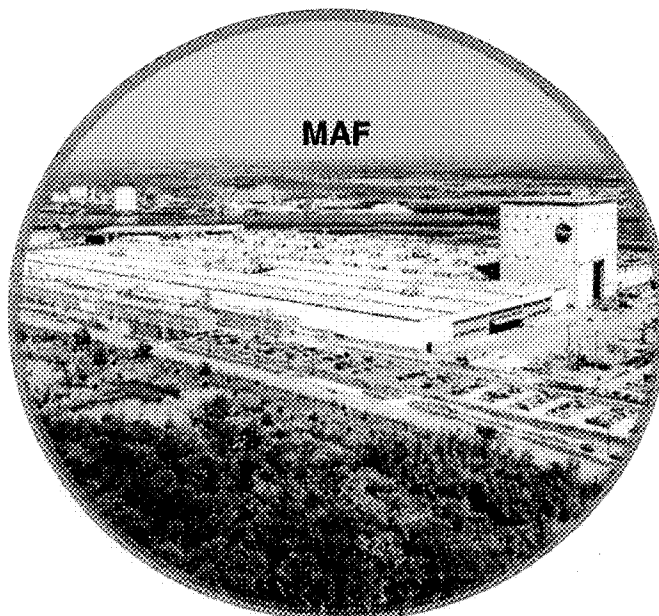
MARSHALL SPACE FLIGHT CENTER

MICHOUD ASSEMBLY FACILITY

**MANUFACTURING SUPPORT AND FACILITY OPERATIONS
CONTRACT NNM09AA20C**

PERFORMANCE WORK STATEMENT

ATTACHMENT J-1



MANUFACTURING SUPPORT AND FACILITY OPERATIONS CONTRACT

PERFORMANCE WORK STATEMENT

WORK BREAKDOWN STRUCTURE

Contract Overview

1.0 Program Management

1.1 Business Management

- 1.1.1 Business Administration and Financial Management
- 1.1.2 Management Information Systems
- 1.1.3 Geographic Information System
- 1.1.4 Information Technology Security
- 1.1.5 Procurement Management
- 1.1.6 Equipment Acquisition and Management
- 1.1.7 Public Affairs

1.2 Technical Management

- 1.2.1 Work Management
- 1.2.2 Documentation and Records Management
- 1.2.3 Configuration Management
- 1.2.4 Training and Certification
- 1.2.5 Quality and Workmanship

2.0 Safety, Health and Emergency Management

2.1 Industrial Safety Program

2.2 Occupational Health Program

- 2.2.1 Occupational Health Services
- 2.2.2 Industrial Hygiene Services
- 2.2.3 Compliance

2.3 Emergency Management

- 2.3.1 Emergency Preparedness
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- 2.3.3 Continuity of Operations

3.0 Manufacturing Support

3.1 Integration of Manufacturing Operations

- 3.1.1 Integration Roles and Responsibilities
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3.2 General Support of Manufacturing Facilities

3.3 Support for Common Manufacturing Resources

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3.5 Contamination and Foreign Object Debris Program

4.0 Maintenance

- 4.1 Maintenance Planning**
 - 4.1.1 Annual Work Plan
 - 4.1.2 Five Year Maintenance Plan
 - 4.1.3 Facility Condition Assessment
 - 4.1.4 Work Order Planning and Scheduling
- 4.2 Preventive Maintenance**
- 4.3 Corrective Maintenance**
 - 4.3.1 Maintenance Workmanship and Materials
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- 4.4 Reliability Centered Maintenance**
 - 4.4.1 Reliability Centered Maintenance Approach
 - 4.4.2 Reliability Centered Maintenance Engineering
- 4.5 Maintenance Projects**
- 4.6 Maintenance Engineering**
- 4.7 Pressure Vessels Systems Management**
- 4.8 Other Maintenance Activities**

5.0 Site Services

- 5.1 Food Services**
- 5.2 Mail Services**
- 5.3 Custodial Services**
- 5.4 Recycling Services**
- 5.5 Multimedia Services**
 - 5.5.1 Graphics Development
 - 5.5.2 Content Development and Assembly
 - 5.5.3 Content Distribution
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- 5.8 Pest Control**
- 5.9 Model Shop and Room**
- 5.10 Special Events**

6.0 Site Operations

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- 6.2 Port and Harbor Operations**
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- 6.4 Industrial Waste Water Treatment**
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7.0 Logistics Operations Services

- 7.1 Property Management**
- 7.2 Supply and Material Management:**
- 7.3 Redistribution, Utilization and Disposal:**
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- 7.5 Packing and Shipping Operations:
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8.0 Sustaining Engineering

- 8.1 Facility Planning
 - 8.1.1 General Planning and Administration
 - 8.1.2 Construction of Facilities
 - 8.1.3 Engineering Assessments
 - 8.1.4 Space Utilization
 - 8.1.5 Master Planning
- 8.2 Engineering Support Services
 - 8.2.1 Drawings and Software Configuration Control
 - 8.2.2 FSEU Drawing Maintenance and Distribution
- 8.3 Cost Estimating
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 - 8.3.3 Design Estimate Validation
 - 8.3.4 Change Items and Claims
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9.0 Environmental Services

- 9.1 Environmental Management
 - 9.1.1 Environmental Management System
- 9.2 Air Emissions Management
- 9.3 Wastewater and Stormwater Management
- 9.4 Waste Management
- 9.5 Hazardous Waste Operations
- 9.6 Spill Response and Clean-up
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10.0 Construction Management

- 10.1 Local Projects
 - 10.1.1 Construction Project Management
 - 10.1.2 Authorization
 - 10.1.3 Change Items, Request for Information and Claims
 - 10.1.4 Project Execution
- 10.2 Construction of Facilities Projects
 - 10.2.1 Construction Project Management
 - 10.2.2 Schedules
 - 10.2.3 Change Items, Request for Information and Claims
 - 10.2.4 Project Execution

11.0 Indefinite Delivery Indefinite Quantity (IDIQ) Services

CONTRACT OVERVIEW

The purpose of the Michoud Assembly Facility (MAF) Manufacturing Support and Facilities Operations Contract (MSFOC) is to provide mission-focused integrated production and facility operation support to National Aeronautics and Space Administration (NASA) Projects and other on-site user(s)/tenant(s) during a period of time when MAF is transforming from a single project, single-prime contractor facility to a multi-project, multi-prime contractor facility. This support includes: program management; safety, health and emergency management; integrated manufacturing support; maintenance; site services; site operations; logistics operations services; sustaining engineering; environmental services; construction and Indefinite Delivery Indefinite Quantity (IDIQ) services. As both a manufacturing facility for human space flight hardware and an operational installation for user(s)/tenant(s), MAF manufacturing support and facility operations are required 24 hours a day, 7 days a week.

The Government's primary objectives for MSFOC contractor performance are:

- Safe and reliable MAF operations support to:
 - Current NASA Projects:
 - External Tank (ET)
 - Orion
 - Ares I Upper Stage
 - Ares I Instrument Unit
 - Future NASA Projects (e.g. Ares V)
 - Other current and future on-site user(s)/tenant(s),
- Efficient and effective use of the facilities and response to multiple customer needs,
- Flexibility to meet changing programmatic requirements,
- Innovative approaches to meeting contract requirements, and
- Maintaining positive working relationships with all MAF user(s)/tenant(s) to include establishment of a reputation as an "independent facility operator".

The MSFOC serves a prominent role in supporting manufacturing and laboratory requirements for NASA Projects at MAF. The Contractor shall:

- Ensure emphasis is placed on safety and health in all MAF activities,
- Ensure a level of performance requisite with the rigors and real-time nature of production operations necessary to support NASA projects milestones,
- Develop and execute strategies to attract and retain highly-qualified employees,
- Employ technology and process improvements to maximize efficiencies while maintaining reliable capabilities (e.g. LEAN, Six Sigma, etc.),
- Ensure External Tank production right to perform is not impeded, and

- Ensure MAF manufacturing resources are equitably distributed among NASA projects and that independence is maintained in all resource prioritization decisions.

During the contract period of performance, NASA will phase-out the Space Shuttle External Tank project. NASA intends to transition certain facilities-related contractual responsibilities from the current ET contract to the MSFOC. These responsibilities will be phased in during the period of performance, as ET concludes its need for and use of specific manufacturing capabilities and resources. Many synergies exist in the consolidation of these manufacturing capabilities and resources, and the Government has an expectation that the Contractor will leverage these synergies to improve productivity and efficiency of MAF assets. The Contractor shall ensure a successful and seamless transition of these manufacturing resources and capabilities from ET and efficiently integrate same into its performance of this Performance Work Statement (PWS).

The Contractor shall establish and maintain team-oriented working relationships with NASA at all organizational levels. Through frequent interaction, both formal and informal, the Contractor shall work with its NASA counterparts to ensure that requirements are clearly communicated, mutually understood, and satisfied. The Contractor shall ensure timely, accurate, and thorough responses to NASA requests for information. The Contractor shall work collaboratively with other NASA contractors in residence at MAF to ensure timely and effective execution of Project requirements. The Contractor shall develop overarching Associate Contractor Agreements (ACA's) in accordance with Section H, to facilitate integrated working relationships. The Contractor shall work cooperatively with other non-NASA on-site user(s)/tenant(s) to ensure timely support of their mission.

NASA desires to incorporate independent checks and balances in the construction management process at MAF. NASA has determined that construction design and independent inspection activities will be performed by a Government furnished Architect and Engineering (A&E) service provider. The Contractor shall establish and maintain a working relationship with the contractor who is designated as the service provider for A&E Services at MAF.

The PWS describes several interfaces between the Contractor and the Government. However, nothing in the PWS is intended to supersede official channels of communication/direction through the contracting officer or the contracting officer's technical representative in accordance with NFS 1852.242-70, *Technical Direction*.

The PWS is presented in a format which provides a scope requirement for each WBS element. In those WBS elements where more defined scope exists, this additional scope is denoted as Work Requirements.

This acquisition has been designed to provide maximum flexibility in proposal evaluation and contract administration to accommodate fluctuations in known/unknown requirements. The PWS consists of:

- Mission Services which establishes the requirements for a minimum level of manufacturing support and facility operations at MAF.
- Any effort not specifically listed in Mission Services but still falling within the scope of the Mission Services effort will be proposed on an IDIQ basis.

The Contractor shall:

1. Provide all resources, including labor, materials, supervision, equipment, tools, spare parts, transportation, and management necessary to perform work in this PWS, except as otherwise specified in the contract.
2. Develop new, maintain existing as provided, and implement work instructions, processes and procedures to ensure that all resources are operationally ready to perform scheduled support.
3. Comply with all applicable federal, state and local laws, regulations, policies, and directives necessary to perform work in this section of the PWS.
4. Manage and utilize in performance of this PWS all MAF facilities, systems, equipment and utilities as described in Attachment J-7, Government Furnished Property and Attachment J-8, Government Furnished Facilities.

1.0 Program Management

Scope:

The Contractor shall perform all program management functions and integrate across all areas of performance.

Work Requirements:

The Contractor shall:

1. Provide all program management including technical and business functions to plan, implement, track, assess, report, and deliver the required products and services described herein.
2. Develop and implement an effective management approach to ensure a strong technical foundation including an organizational structure which stresses the flexibility and adaptability necessary to respond to surge, one-of-a-kind, and unforeseen requirements.

3. Provide and maintain a management system capable of capturing and reporting data per:
 - a. DRD 1234MA-008, *Contract Performance Metrics and Workload Indicator Report*
 - b. DRD 1234MA-015, *Advanced Notification of Workforce Reduction Report*
 - c. DRD 1234MA-004, *Monthly Management Status Review*
 - d. DRD 1234MA-001, *Management Plan*
 - e. DRD 1234MA-002, *Work Breakdown Structure and Dictionary*
4. Establish and sustain effective relations with labor unions while using prudent business practices to ensure best value to NASA.
5. Implement a planned, systematic approach to maintaining and improving the condition of the MAF infrastructure to execute current and future requirements.
6. Examine workforce requirements with a goal to reduce operational costs:
 - a. Perform cost-trade analyses on proposed improvements
 - b. Identify and implement improvements in coordination with NASA
 - c. Make cost avoidance trade-off recommendations to NASA for new or changing requirements
7. Provide timely insight to NASA on issues associated with support being provided to on-site NASA contractors and other MAF user(s)/tenant(s).
8. Ensure all developed and updated material that includes 3rd party proprietary information/data is properly marked and protected from disclosure.
9. Provide support and information to internal and external audits and investigations performed by Government agencies or other authorized entities.
10. Comply with NPR 1600.1, *NASA Security Program Procedural Requirements*; NPR 2570.1, *NASA Radio Frequency (RF) Spectrum Management Manual*; and NPD 2570.5D, *NASA Electromagnetic (EM) Spectrum Management*.
11. Verify that employees have properly cleared all accounts when access is no longer needed in accordance with DRD 1234MA-011, *Contractor Employee Clearance Document*.
12. Provide information necessary to determine the type of investigation required for a position in accordance with DRD 1234MA-012, *Position Risk Designation for Non-NASA Employee*.
13. Establish and maintain a listing of all Contractor personnel working on-site at MAF in accordance with DRD 1234MA-009, *Badged Employee and Remote IT User Listing*.

1.1 Business Management

Scope:

The Contractor shall perform all business management functions which shall be integrated across all areas of performance.

1.1.1 Business Administration and Financial Management

Scope:

The contractor shall provide business administration services in support of the requirements contained in this contract. The business administration functions include but are not limited to human resources, legal, labor relations and contract administration.

The Contractor shall employ sound financial management practices and systems while utilizing flexible and innovative procedures designed to ensure compliance with Government cost charging and reporting requirements, and that are consistent with category of user(s)/tenant(s) and sources of funds definitions.

Work Requirements:

The Contractor shall:

1. Develop, implement and maintain a financial management process which complies with Federal Acquisition Regulation (FAR) Part 42, *Contract Administration and Audit Services*, and NASA FAR Supplement (NFS), Subpart 1842.72, *NASA Contractor Financial Management Reporting*.
2. Track expenditures and workforce utilization by:
 - a. User(s)/tenant(s) as specified by the Government
 - b. Work Breakdown Structure (WBS) to the specified level
 - c. Unique task/project/activity/event identifiers
 - d. Elements of cost including labor hours and dollars, other direct costs, overhead, General and Administrative (G&A), and fee
 - e. Work Year Equivalents (WYE's) for both Contractor and major subcontractors
3. Respond to NASA requests including but not limited to:
 - a. Planning Programming Budgeting Execution (PPBE) calls
 - b. Ad hoc requests related to budget, schedule and cost performance
 - c. Work-force utilization

4. Develop and maintain a financial management system with automated data transfer capability with other applications to ensure complete data integrity and eliminate duplicative data entry. At a minimum provide cost and labor hours, both planned and actually incurred, with the ability to query by the following data fields:
 - a. Date
 - b. Facility and/or user(s)/tenant(s) number
 - c. WBS element
 - d. Unique task/project/activity/event identifiers
 - e. Direct and indirect elements of costs, type or categories of work
 - f. Government fiscal year (FY)
 - g. Major subcontractors
5. Conduct monthly financial reviews with NASA to provide insight into performance and utilization of resources. These reviews shall include, but are not limited to:
 - a. Variance analysis
 - b. Projected FY End-of-Year (EOY) estimate
 - c. Baseline adjustment analyses
 - d. Obligation assessment
 - e. FY phased financial operating plan
6. Develop, maintain, and ensure the following DRD deliverables are auditable and reconcilable to the Contractor's financial management systems:
 - a. DRD 1234MA-003, *Financial Management Report (533M and 533Q)*
 - b. DRD 1234MA-013, *FY Phased Financial Operating Plan*
 - c. DRD 1234MA-014, *Cost by Occupancy Report*
 - d. DRD 1234LS-004, *Annual and Monthly Financial Reporting of NASA Property in the Custody of Contractors*
 - e. DRD 1234MA-010, *Customer Chargeable Cost Data*
7. Track, report and separately identify each Plant, Property, and Equipment Capital Asset acquired on the NF533 submittal in accordance with NASA Interim Directive (NID) 9250 Identifying Capital Assets and Capturing Their Costs, dated September 30, 2007 or its successor versions.

1.1.2 Management Information Systems

Scope:

The Contractor shall develop or otherwise provide, maintain and utilize an integrated architecture for management information systems (MIS) that enables the effective and efficient preparation, management, control, and dissemination of information and data required to successfully accomplish contract requirements. The MIS architecture including Contractor-owned and Government furnished applications shall provide interoperability among all management, operations, administrative, and financial systems. The MIS shall provide a user interface that is intuitive and requires minimal

formal training. The data contained in the MIS shall be current, accurate, complete and compatible with Microsoft Project and Microsoft Office products.

The Contractor will be provided with administrative and engineering desktops, laptops, and multi-function devices, as defined in Attachment J-6, *Government Furnished Services*, and as approved by the Government for use in the performance of this contract.

Work Requirements:

The Contractor shall:

1. Develop and maintain documentation that reflects the current configuration of the Contractor's MIS architecture, including both Contractor-provided and Government-furnished applications.
2. Ensure the MIS provides a data warehouse capability to access historical systems and equipment data files to track and analyze trends and to plan upcoming operation and maintenance activities.
3. Provide recurring and ad hoc query capability for the MIS, including capability for pre-defined reports.
4. Provide formal and informal training as well as user guides needed for Contractor, NASA, NASA contractors and other MAF user(s)/tenant(s) to efficiently and effectively utilize the Contractor's MIS.
5. Respond to user(s)/tenant(s) questions, problems, and requests for limited read only access to the MIS. Provide tracking for all work through completion. Enable on-line, network accessible end user visibility into status during work phase. Government visibility into status during work phase shall include estimated/actual costs and schedule.
6. Perform continuous assessment and improvement of MIS performance and architecture to ensure maximum efficiency and performance. Periodically assess the Government furnished applications and submit recommendations for improvements to NASA for approval prior to implementation.
7. Utilize the Computerized Maintenance Management System (CMMS) as a core system of the MIS architecture to manage and integrate all PWS work functions. The Contractor shall utilize existing agency agreements for the addition of extended licenses or seats as directed by the Contracting Officer.
8. The incorporation of future Maximo upgrades will result in minimal impact to the production version of CMMS when the upgrades affect previous customization.

9. Perform administration and maintenance of the CMMS (Maximo) database.
10. For Government Property whose maintenance responsibility is currently assigned to ET Project, interface with ET Project to establish a schedule for updating the CMMS database. All updates to CMMS database shall include all available data (asset identification information, work order history, maintenance and operating manuals, other documents, etc) from the ET CMMS.
11. Avoid deleting any data from the database, except data entered in error (e.g. typographical errors) without the written consent of the COTR.
12. Provide NASA on-line, network accessible, interactive access to the MIS and CMMS. The level of access required will be defined by the NASA Contracting Officer's Technical Representative (COTR).
13. Obtain required licenses, administer, manage, and maintain any Government furnished Information Technology (IT) Applications (property). Government Furnished Services identified in Attachment J-6 will be administered and maintained by a NASA service provider.
14. Work with appropriate NASA service provider to ensure that designated Government furnished applications are linked to the Contractor's MIS.
15. Furnish all software, not provided by the Government, necessary to meet human resources, corporate accounting, or other contract accounting functions necessary to execute this contract. These systems must meet the IT Security requirements defined elsewhere in this PWS.
16. Use Government furnished software application when available in the development of the MIS and any interface between software applications must be approved by the Government.

1.1.3 Geographic Information System (GIS)

NOTE: Effort in this PWS section is not part of Mission Services, and if determined appropriate, will be authorized by an IDIQ task.

Scope:

The Contractor shall provide an approach to initiate, implement and maintain a GIS at MAF that is compliant with Open Architecture Geospatial Consortium (OGC). The GIS should demonstrate the capability to link geographically referenced data including topographic, demographic, environmental, utility, facility, image, and other resource data. The GIS should be utilized to efficiently capture, store, retrieve, analyze, and display spatial and non-spatial information.

Work Requirements:

The Contractor shall:

1. Maintain and update MAF spatial and non-spatial data including all GIS sub-applications, as facility/systems/equipment/utility requirements are identified, for input into the GIS from sources including schematics, maps, photos, surveys, and as-built drawings.
2. Utilize GIS to develop and process site plans, dig permits, and comprehensive planning studies.
3. Identify and propose future enhancements for the MAF utilization of GIS.
4. Implement and maintain operational procedures and practices to ensure maximum use of the GIS capabilities to increase efficiencies in performance of all applicable Contract elements.

1.1.4 Information Technology (IT) Security

Scope:

The Contractor shall incorporate appropriate safeguards to ensure availability, integrity, and confidentiality of information and IT resources utilized in performance of this PWS.

The Contractor should have no expectation of privacy for contractor specific data utilizing NASA networks and communication systems. Server systems supporting the Contractor's IT resource requirements may be supported by other NASA service providers.

Work Requirements:

The Contractor shall:

1. Develop, document, manage and integrate, operational and technical IT security policies, procedures and control measures into the system life cycle. Annually test and review these policies, procedures and control measures for adequacy and compliance.
2. Comply with NPR 2810.1 *Security of Information Technology*.
3. Address all interfaces to Government furnished IT equipment (property). Prepare an IT Security Plan in accordance with NFS 1852.204-76 Security Requirements for Unclassified Automated Information on Resources.

4. Submit electronic data and information in the applicable Government standard formats and protocols.

1.1.5 Procurement Management

NOTE: *Effort in this PWS section consists of both Mission Services and IDIQ. Procurement Management for PWS scope authorized on an IDIQ basis (e.g. subcontracting construction) will be authorized and costed as a function of the IDIQ task order.*

Scope:

The Contractor shall provide effective, customer focused procurement and subcontract management that results in consistently high-quality products, services, and deliverables. The Contractor shall provide overall management of the subcontract requirements.

The Contractor shall develop and execute documentation to support the procurement of services, supplies, materials, and equipment including but not limited to:

- Consumables
- Store stock
- Parts
- Rental, lease or maintenance of equipment
- Software, software licenses or software maintenance
- Critical spares

Work Requirements:

The Contractor shall:

1. Maintain management, technical control, and visibility of intra-company, subcontractor, and major vendor activities that are used to fulfill contract requirements. Maintain accountability for the quality and timeliness of the goods and services that are subcontracted.
2. Establish and ensure continuous certification of a Government approved purchasing system in accordance with the FAR and NFS.
3. Provide small business and small disadvantaged business concerns the maximum practicable opportunity to receive a fair portion of subcontract awards in accordance with Attachment J-4, Small Business and SDB Subcontract Plan.
4. Submit "consent to place" file documentation for all subcontracts and purchase orders in excess of \$100,000 and provide the Contracting Officer (CO) with advance notification of proposed subcontracts in excess of \$25,000.

5. Submit a report covering all acquisitions placed by the Contractor and the related geographic impact of these acquisitions in accordance with DRD 1234CD-001, *Geographic Economic Impact Report*.
6. Subcontract all construction work valued at \$300,000 or greater per project. Performance of construction work valued at less than \$300,000 per project may be performed by Contractor personnel subject to adherence to Davis-Bacon provisions.
7. Conduct Davis-Bacon compliance reviews to ensure subcontractors are compliant with Title 29 CFR Parts 3 and 5 and related contract clauses, and to ensure appropriate wage determinations are utilized. Obtain and verify the accuracy of the certified Davis-Bacon payroll records for each payroll period.
8. Establish a status and tracking system for all acquisitions from receipt of purchase request through close-out of acquisition documentation. The tracking system should provide visibility of order status to the requestor. Documentation in the tracking system shall include but is not limited to:
 - a. Assigned work or purchase request number
 - b. Date of receipt
 - c. Date order or subcontract is placed
 - d. Order delivery or completion date
 - e. Actual receipt or completion date
 - f. Actual delivery date to requestor
 - g. Vendor name and address contact information
 - h. Order dollar value
 - i. Assigned buyer
9. Coordinate with requestors to confirm requirements for any item with hazardous content, prior to ordering.
10. Provide expediting services for high priority requests including but not limited to those that are safety critical.

1.1.6 Equipment Acquisition and Management

Scope:

The Contractor shall develop a planning process for the replacement of capital equipment, including the refurbishment or remanufacturing of existing equipment, new equipment purchases, and other related projects. The Contractor shall prepare a 5 year Plant, Property, or Equipment Capital Asset Plan, update it annually, coordinate the plan with user(s)/tenant(s) and submit to NASA for approval prior to acquisition implementation. The plan shall include a description of items to be acquired, purchase specifications, acceptance criteria, estimated cost, purchase justification and priority of

need. Deviation from current year plan (individual items greater than \$25K) shall require concurrence by NASA prior to acquisition implementation.

1.1.7 Public Affairs

Scope:

The Contractor shall provide support to the NASA public affairs function that integrates and aligns MAF communications with MSFC and Agency directives to advance NASA's strategic goals. The Contractor shall develop, implement, and execute a comprehensive suite of communication services, products, tools and techniques. The Contractor shall ensure that communications are based on a clear understanding of the audiences and convey NASA's direction and guidance. The Contractor shall develop action responses, articles, key messages, white papers, speeches, communication plans, and coordinate in-reach activities. The Contractor shall coordinate and review MAF public affairs communication content with the MAF Management Office and the Office of Strategic Analysis and Communication (OSAC) at MSFC. The Contractor shall demonstrate an understanding of OSAC's communication mission, processes and procedures. The Contractor shall provide weekly notes documenting specific actions taken and a monthly task log that records products delivered.

1.2 Technical Management

Scope:

The Contractor shall perform all technical management functions and integrate across all areas of performance.

1.2.1 Work Management

Scope:

The Contractor shall develop for use a work management system, utilizing CMMS (MAXIMO) as the core component, to include process and procedure definition and documentation. The work management system will be used across departmental and contract boundaries to:

- Integrate and satisfy all customer requirements
- Emphasize increased customer responsiveness
- Achieve first time quality
- Improve resource planning and efficiency
- Maximize cost effectiveness
- Enable effective and efficient coordination
- Support integration with NASA project and NASA service providers to ensure timely support to project/mission milestones

A) Work Management System:

The work management system shall provide planning, scheduling, work control and integration of all PWS functions and activities.

Work Requirements:

The Contractor shall:

1. Develop and maintain a work control process.
2. Establish and promote a common method(s) (i.e. telephone or web-based communication) of customer interface to request work at MAF. Each method of customer interface made available shall be used to request all work regardless of type, funding source, requester or performing organization.
3. Develop, maintain, and make available a MAF user(s)/tenant(s) Guide to MSFOC Services to describe the full range of capabilities and services offered by the Contractor, the steps required by user(s)/tenant(s) to request support through the WCC, and the method by which user(s)/tenant(s) feedback is collected and assessed.
4. Operate a Work Control Center (WCC) to receive, assess, input, categorize, prioritize, schedule, track, and document all work requests.
5. Develop, implement, and maintain WCC operational procedures and practices to provide accurate, timely, professional responses to customer requests, and to permit tracking of work in progress.
6. Utilize the CMMS to control, schedule, and monitor operations, maintenance, trouble calls, service orders, and all other operations and activities.
7. Maintain and manage data in the CMMS to accurately reflect work performed.
8. Provide work order requestors with an identifying number, due date, and method of follow-up for status requests.
9. Make an initial assessment to determine if work requested is within the scope of this contract and if so, properly classify and process the work request.
10. Plan and schedule work requests to ensure resources are available to efficiently complete work requirements:
 - a. Within the specified or negotiated time limits

- b. Within established performance standards
 - c. With minimal disruptions to user(s)/tenant(s)
11. Classify work requests, at a minimum, in one of the following categories as defined in Attachment J-13, *Glossary (Acronyms and Definitions)*:
- a. Emergency Trouble Call (ETC)
 - b. Routine Trouble Call (RTC)
 - c. Grounds (GRND)
 - d. Operations (OPS)
 - e. Predictive Test and Inspection (PTI)
 - f. Predictive Test and Inspection Repair (PT&IR)
 - g. Preventive Maintenance (PM)
 - h. Programmed Maintenance (PGM)
 - i. Corrective Maintenance - Repair (RPR)
 - j. Replacement of Obsolete Items (ROI)
 - k. Service Request (SR)
12. Receive and route:
- a. Work requirements within MSFOC resources to initiate response to trouble calls and real-time support requests
 - b. Work requirements to other NASA service providers as appropriate
 - c. Customer inquiries including work order status, shipping and receiving information, site operations and safety
13. Notify MAF Integrations and Operations (MI&O) Office, affected NASA Project Resident Management Office's (RMO), and affected MAF user(s)/tenant(s) immediately upon all unscheduled utility outages affecting their areas.
14. Avoid performance of any work in Critical Production areas without first receiving permission from the NASA project's authorized production supervisor for the area.
15. Serve as central clearinghouse for dissemination of institutional related announcements and anomaly reporting on a 24 hours per day, 7 days per week basis to include communication to the MAF workforce of any hazardous or anomalous conditions such as power outages, equipment failures, weather warnings, security issues, traffic accidents or road closures.

B) Work Control Outages:

The Contractor shall schedule, coordinate and perform outages for assigned MAF facilities, systems, equipment and utilities (FSEU), including but not limited to:

- High and low voltage

- Protective systems
- Fire alarm and suppression
- Heating, Ventilation and Air-Conditioning (HVAC)
- Chilled water
- Hot water
- Potable water
- Compressed air
- Pneumatics
- Elevators
- Roadways

Work Requirements:

The Contractor shall:

1. Provide expertise to analyze outage requests, assess associated impacts, and participate in outage planning meetings.
2. Schedule outages where they will not impact NASA project production operations, including support operations.
3. Coordinate, negotiate and manage approvals for outages with:
 - Requestor
 - Facility manager
 - Production Support Lead Engineer (PSLE's)
 - Production Support Systems Manager (PSSM's)
 - Subcontractors
 - User(s)/tenant(s)
 - NASA Resident Management Office(s) (RMO)

1.2.2 Documentation and Records Management

Scope:

The Contractor shall maintain all records and documentation necessary to substantiate that all services have been accomplished as specified and shall support all Government audits with documentation retrieval as scheduled by the Government. Additional records, reports and submittals required by the Government are identified throughout this contract.

Work Requirements:

The Contractor shall:

1. Plan, develop, maintain and implement a comprehensive records, reports, and submittals management process and records management plan that facilitates

continual Government electronic access to all documentation records, reports and submittals in accordance with DRD 1234MA-007, *Records Management Plan*.

2. Manage NASA-owned/contractor-held records in accordance with:
 - a. NPD 1440.6 *NASA Records Management*
 - b. NPR 1441.1 *NASA Records Retention Schedules*
 - c. MPR 1440.2 *MSFC Records Management Program*
 - d. Title 36 of the Code of Federal Regulations, Chapter XII, *National Archives and Records Management*
3. Maintain records separately from non-record materials and records having permanent value separately from records having temporary value. NASA owned records shall be segregated from the Contractor's records.
4. Manage and maintain legacy records (data created for Government use and delivered to, or falling under the legal control of the Government).
5. Provide NASA or authorized representatives access to all records. All records shall contain supporting documentation to provide a complete audit trail. The Government reserves the right to inspect, audit and copy all records.
6. Deliver data that is fully readable without additional software and in a format acceptable to the Government.
7. Turn over to NASA all Government-owned records at the completion of the contract to support the continuity of NASA business.

1.2.3 Configuration Management

Scope:

The Contractor shall provide a plan in accordance with DRD 1234CM-001 *Configuration Management Plan* to assure proper configuration identification, control and accounting of the documentation, records and equipment associated with the MAF FSEU assigned to this contract. The configuration control process shall identify document and track modifications.

Work Requirements:

The Contractor shall:

1. Analyze repairs, modifications, and new procurements to determine impacts to MAF FSEU documentation.
2. Maintain configuration control of system drawings and documents on assigned FSEU that change as a result of maintenance, repair or construction activities.

All CAD systems utilized in the configuration control of system drawings will provide for file convention utilizing the National CAD Standard.

3. Submit to the appropriate NASA Projects' Configuration Control Board (CCB), Contractor-initiated modifications that impact said project's configured FSEU.

1.2.4 Training and Certification:

NOTE: *Effort in this PWS section consists of both Mission Services and IDIQ. When a user(s)/tenant(s) has a unique training or certification requirement under Work Requirement 10 of this PWS Section, the activity will be authorized and costed on an IDIQ basis. All other training and certification activities will be considered Mission Services.*

Scope:

The Contractor shall provide for training and development that will maintain core competencies, enhance performance and advance capabilities to meet contract requirements. The Contractor shall provide such training to NASA and NASA contractors at MAF, as well as FOD training to visitors requiring access to manufacturing areas.

Work Requirements:

The Contractor shall:

1. Provide a trained, competent, licensed, experienced and reliable workforce to include appropriate personnel certification in accordance with MWI 3410.1, *Personnel Certification Program*.
2. Ensure the workforce is knowledgeable of applicable laws, regulations and Government directives.
3. Provide MAF Institutional Operations related training. Training may consist of Government-furnished or Contractor developed training materials. Training topics will be determined by the Government and include Safety, Health and Environmental (SHE), quality, maintenance, and manufacturing support. Examples of training topics include but are not limited to:
 - a. Occupation Safety and Health Administration (OSHA) Collateral Duty
 - b. Personal Fall Arrest Protection
 - c. Hazardous Communication
 - d. Foreign Object Debris (FOD)
 - e. Lockout/Tagout
 - f. Respirator Use and Care
 - g. Hazardous Waste Management
 - h. Lifting Devices
 - i. Secured area access

4. Provide in accordance with MWI 3410.1, *Personnel Certification Program* and MPR 3410.1, *Training*, that utilizes:
 - a. Government provided SHE Training Assessment tool located on the "Safety, Health and Environmental (SHE)" webpage of the "Inside Marshall" website to assess and identify Contractor training needs specific to the operations or tasks they are expected to perform.
 - b. Government provided SATERN database for Employee training registration located on the "Inside Marshall" website.
 - c. Government provided CERTRAK database to track required employee certifications located on the "Safety, Health and Environmental (SHE)" webpage of the "Inside Marshall" website.
 - d. Provide a training and certifications administrator to oversee certification data.
5. Develop and maintain a comprehensive training, and certification plan and database for Contractor training and certifications not required by MWI 3410.1, *Personnel Certification Program* to manage, record and track all additional training and certifications required by this Contract in accordance with DRD 1234SA-002 *Personnel Certification Plan*. Access to this database shall be made available to the Government upon request by the Government.
6. Obtain COTR approval for Contractor developed training material prior to use. Contractor developed materials shall be provided to the Government when requested for possible inclusion into the NASA SATERN training database.
7. Ensure that all employees who are responsible for hazardous waste management activities receive annual hazardous waste training to include the appropriate level of Department of Transportation training.
8. Provide training for personnel who perform nondestructive testing (NDT) and visual inspections of lifting devices and equipment in accordance with written practices that meet the requirements specified in American Society for Nondestructive Testing (ASNT) Practice No. SNT-TC-1A and NASA-STD-8719.9, *Standard for Lifting Devices and Equipment*.
9. Provide proficiency testing as required; to include but not limited to NASA lifting equipment operators (e.g., cranes, forklifts, aerial lifts) in accordance with NASA-STD-8719.9 *Standard for Lifting Devices and Equipment*, and in accordance with MWI 6430.1 *Lifting Equipment and Operations*.
10. Develop and provide unique training to user(s)/tenant(s) per the user(s)/tenant(s) defined requirements.

1.2.5 Quality and Workmanship

Scope:

The Contractor shall assure that quality products, materials and services are provided.

A) Quality Assurance:

Work Requirements:

The Contractor shall:

1. Provide a quality program that is compliant with the American National Standards Institute (ANSI) American Society for Quality (ASQ) ANSI/ISO/ASQ Q9001:2000, *Quality Management Systems Requirements* and AS 9100 SAE9100, *Quality Management Systems – Aerospace – Requirements*. This shall be done in accordance with MPD 1280.1, *Marshall Quality Management System Manual*.
2. Provide a Quality Assurance Management Plan (QAMP), to include report submissions, prepared in accordance with DRD 1234QE-001, *Quality Assurance Management Plan and QAMP Quarterly Summary Report* that specifies the Contractor's approach to assuring delivery of quality products, material and services to include specific methods and processes the Contractor will implement to avoid compromising configuration of NASA project flight hardware production tooling or associated systems when working on or adjacent to same.
3. Provide support:
 - a. During audits or surveys performed internally or by third parties to include entering data into the Non-Conformance Report (NCR) database in accordance with MPR 1280.6, *Management System Internal Audits*.
 - b. During participation in problem and failure investigations to determine root cause and provide recommendation of corrective action.

B) Workmanship and Materials:

Work Requirements:

The Contractor shall:

1. Provide professional quality work conforming to all federal, state, local and NASA regulations and standards. All specified work items including but not limited to checkpoints, servicing, repairs and reporting shall be

performed completely, correctly, and neatly in a safe manner that also eliminates the need for rework. Lack of required parts, other materials, or staffing shall not be an acceptable cause for nonperformance of scheduled work.

2. Ensure all personnel performing work are properly trained, certified and qualified for assigned work requirements to include recognition of job hazards for any equipment used.
3. Provide original equipment manufacturer (OEM) replacement material and parts or at a minimum that meet the salient specifications of the OEM and match existing finish and color.
4. Operate specialized tools and equipment in accordance with OEM instructions and under valid calibration, if applicable.
5. Prevent debris from accumulating in the work area or from spreading to adjacent areas during performance of work. All such debris, excess material and parts shall be removed upon completion of work or at the end of each workday, whichever occurs first.
6. Perform other incidental work in the vicinity of the work area, not identified by the requestor, but identified by the crew during the job.

2.0 Safety, Health and Emergency Management

NASA is strongly committed to the safety and health of the workforce, teamwork, and integrity between organizations in order to achieve mission success. This commitment is achieved by the following Marshall Space Flight Center (MSFC) SHE Core Program Requirements (CPRs):

- Management leadership and employee involvement
- System and worksite analysis
- Hazard prevention and control
- SHE training

These CPRs allow for the establishment of a highly skilled, diverse and motivated workforce committed to achieving mission success. Continuous planning, implementation, integration and management control of these CPRs shall be in accordance with the DRD 1234SA-001, Safety and Health Plan. The MAF management team is committed, as a part of NASA, to preventing human injury, ensuring the safety of all operations and products leading to mission success. The contractor shall support these endeavors and demonstrate the same commitment to safety and mission success.

Scope:

The Contractor shall provide support to the overall NASA Safety Program established at MAF. The Contractor shall coordinate and provide support to users/tenants that are responsible for implementation of the NASA Safety Program within assigned dedicated manufacturing areas.

The Contractor shall utilize all aspects of the NASA safety program as defined in MPR 8715.1, *Marshall Safety, Health, and Environmental (SHE) Program* to maintain and improve current safety performance. The Contractor shall integrate existing and new user(s)/tenant(s) into the safety program so as to preclude any performance disruptions of existing or future NASA projects at MAF.

The Contractor shall provide MAF site-wide safety and health services to meet resident NASA project and other MAF user(s)/tenant(s) requests. These services will include all aspects of:

- Safety management
- System safety
- Industrial safety
- Test operations safety
- Product safety
- Industrial hygiene
- Occupational health including medical
- Emergency Management

The Contractor shall provide safety and health support to respond to emergencies during off shift work hours:

- Safety and health professional(s) shall be available to support MAF 1st shift operations, 5 days a week
- On-Call Safety support for all shifts other than first
- Emergency Medical support 24 hours a day, 7 days a week

The Contractor shall establish and monitor a dedicated "Hotline" phone to receive site-wide employee safety, health and environmental concerns. This hotline will be available 24 hours a day, 7 days a week.

Work Requirements:

The Contractor shall:

1. Implement and operate the SHE program at MAF assuring compliance with SHE policies, requirements, and controls to include performing surveillance of other NASA contractors within the MAF manufacturing environment, as well as all other tenants in residence at MAF in accordance and consistent with the Safety and Health requirements of:

- a. NPR 8715.3, *NASA General Safety Program Requirements*
 - b. MPD 1840.1, *MSFC Environmental Health Program*
 - c. MPR 8500.1, *MSFC Environmental Management Program*
 - d. MPR 8715.1, *Marshall Safety, Health and Environmental (SHE) Program*
 - e. OSHA, Environmental Protection Agency (EPA) and other Government safety and health regulations and industry standards, as applicable
2. Provide all information required by this section of the PWS and the Contractor's SHE Plan in a timely manner to the NASA MAF Safety Office to support the decision-making process regarding open problems, hazards, and risks pertaining to accomplishing NASA's mission at MAF.
3. Participate in the SHE Performance Evaluation System in accordance with DRD 1234SA-005, *Annual Contractor Safety Self-Evaluation Report*. The Contractor's self-evaluation shall address, but not be limited to, the following content:
 - a. Accident/incident prevention and recurrence control
 - b. Effectiveness of safety personnel
 - c. Methodologies employed to assist line organizations in applying safety related experience
 - d. Determining effectiveness of methods and actions taken
 - e. Multi-discipline participation in risk management process
 - f. Visibility of results at all organizational levels
4. Assure all Contractor employees are knowledgeable of and comply with all appropriate safety requirements including all applicable federal, state and local laws and regulations; Presidential Executive Orders; NASA and MSFC directives.
5. Establish and accomplish a SHE program that focuses on preventing loss of life, injury to personnel, loss of mission or test failure, damage to equipment, or unnecessary risk.
6. Promote safety awareness throughout all aspects of Contract performance. Safety risks shall be managed through the systematic identification, assessment, and control of hazards and their associated risks.
7. Submit all required documents, logs, records, analytical results and procedures into the SHE database. Prepare and maintain submittals using electronic media and software databases in accordance with Sections 2.1, 2.2, and 2.3 of this PWS. Ensure submittals are consistent with SHE policy for documentation, information content and format(s) are readily available to the Government upon request.

2.1 Industrial Safety Program

Scope:

The contractor shall implement industrial safety program requirements.

Work Requirements:

The Contractor shall:

1. Establish, implement, and administer a SHE program consisting of an industrial safety, occupational health, and environmental program that (1) prevents employee fatalities, (2) reduces the number of incidents, (3) reduces the severity of employee injuries and illnesses, and (4) protects the environment through the ongoing planning, implementation, integration and management control of these programs in accordance with DRD 1234SA-001, Safety and Health Plan. The plan shall address each of the following MSFC SHE core program requirements in detail that are applicable to the contracted effort:
 - a. Management leadership and employee involvement.
 - b. System and worksite analysis.
 - c. Hazard prevention and control
 - d. Safety, health and environmental training.
 - e. Environmental compliance
2. Conduct annual OSHA safety compliance inspections of all local NASA owned or occupied facilities in accordance with:
 - a. 29 CFR Part 1960.25(c), *Basic Program Elements for Federal Employee Occupational Safety and Health Program and Related Matters*
 - b. NPR 8715.3, *NASA General Safety Program Requirements*, Chapter 1
 - c. MWI 8715.12, *Safety, Health, and Environmental-Finding Tracking System (SHEtrak)*
3. Conduct semi-annual safety compliance inspections of operations considered potentially hazardous in accordance with 29 CFR Part 1960.25 (c), including but not limited to research and development test facilities, laboratories, industrial facilities and equipment. Asbestos and lead related inspections shall be accomplished in accordance with DRD 1234EE-016, *Asbestos and Lead Report*.
4. Verify/sample at least thirty (30%) percent of the annual facility inspection findings and associated closure rationale during the fiscal year.
5. Conduct weekly OSHA safety compliance inspections, during normal, non-duty hours and weekends when requested by the Government, of NASA construction sites at MAF including 100% of Construction of Facilities (CoF)

construction sites and 50% of other construction sites in accordance with the requirements of 29 CFR Part 1960.25(c) and NPR 8715.3, Chapter 8.

6. Support final acceptance inspections of newly constructed or modified facilities/buildings in accordance with NPR 8715.3, Chapter 8.
7. Perform annual facility/building fire alarm testing and building evacuation drills on all NASA facilities with more than 10 occupants in accordance with NASA-STD-8719.11, *Safety Standard for Fire Protection*, Chapter 4 and NPR 8715.3, Chapter 5.
8. Monitor testing of fire protection and other safety related systems including but not limited to: fire alarms, sprinklers, carbon dioxide and wet chemical fire extinguishers, fire hydrants, standpipes, oxygen deficiency monitors, and emergency showers/eyewashes in accordance with NASA-STD-8719.11, Chapter 4 and MWI 8715.4, *Personal Protective Equipment and Systems*.
9. Conduct SHE compliance audits and provide support during audits or surveys performed by third parties to include data entry into the NCR database of all SHE audits, tracking and approving closing action in accordance with MPR 8715.1, *Marshall Safety Health and Environmental (SHE) Program* and MPR 1280.6, *Management System Internal Audits*.
10. Perform quantity distance calculations for explosives siting issues and provide support to evaluate and monitor the storage, handling and use of explosive, propellant, and pyrotechnic material and devices in accordance with NSS 1740.12, *Explosives Safety* and MWI 8715.10, *Explosives, Propellants and Pyrotechnics Program*.
11. Review and evaluate potentially hazardous operation activities and project critical hardware move procedures and plans in accordance with NPR 8715.3, *NASA General Safety Program Requirements*, MWI 8715.15, *Ground Operations Safety Assessment and Risk Mitigation Program* and MWI 6410.1, *Packaging, Handling, and Moving Program Critical Hardware*.
12. Review design drawings for construction, modification of FSEU and potentially hazardous operation to assure compliance with Federal Government and State of Louisiana building codes as well as NASA and MSFC safety requirements.
13. Perform and evaluate hazard analyses and safety assessments and review hazardous operation procedures for potentially hazardous operations in accordance with NPR 8715.3, Chapter 2 and MWI 8715.15 using COTR approved techniques for MAF ground-based activities, equipment and facilities.
14. Participate in Operational Readiness Inspections (ORI), Test Readiness Reviews (TRR), Production Readiness Reviews (PRR) and other similar safety reviews in accordance with NPR 8715.3, Chapter 3 and MWI 8715.15 to

assess and evaluate the safety of potentially hazardous facilities and operations.

15. Investigate safety concerns in accordance with MWI 8715.13, *Safety Concerns and Reporting System*. Provide Mishap and Safety Statistics Reports in accordance with DRD1234SA-004. Provide support for mishap investigations including any required follow-up to safety technical issues in accordance with NPR 8621.1, *NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping* and MWI 8621.1, *Close Call and Mishap Reporting and Investigation Program*.
16. Provide support to NASA's MSFC Pressure Systems Manager in assuring compliance with NASA-STD-8719.17, *NASA Requirements for Ground-Based Pressure Vessels and System (PV/S)*, MPR 8823.2, *Pressure System Certification Requirements*, and applicable pressure system specifications and requirements for pressure systems containing cryogenic liquids/gases (e.g., Nitrogen, Hydrogen, Oxygen, etc.) and pressure systems containing other type liquids/gases when requested.
17. Issue MAF safety permits (e.g., Hot Work Permits, Energized Electrical Equipment Permits, Confined Space Entry Permits) as instructed by the WCC and coordinate actions with appropriate NASA Projects or MAF tenants.
18. Participate in the development and implementation of OSHA compliance training (subject specific) courses in accordance with Section 1.2.4 of this PWS. Review NASA contractor OSHA compliance training to ensure consistency with MAF training requirements prior to instruction. When required provide proficiency testing in accordance with MPR 3410.1 and MWI 3410.1.
19. Provide database input for the Incident Reporting and Information System (IRIS), Safety Concerns and Reporting System (SCRS), SHE Training Assessment, SHE Certification and Building Manager databases and other SHE databases as needed.
20. Participate in briefings requiring NASA MAF Safety Office support (e.g., pre-construction, pre-move, pre-test) to inform and assure personnel involved in the activity are aware and knowledgeable of the NASA safety regulations and requirements.
21. Establish and maintain a Material Safety Data Sheet (MSDS) database for all required materials currently in use at MAF. Replace and archive existing MSDS when updated MSDS information is received.
22. Review new or revised NASA Safety related documents.

2.2 Occupational Health Program

NASA's Occupational Health Program (OHP) provides acute care for NASA employees, user(s)/tenant(s) employees and visitors who become ill or injured while on-site at MAF, as well as health services to maintain and improve the health of NASA employees with a focus on the prevention, diagnosis, treatment, and care of illness and injuries caused or aggravated by the work environment. The MAF OHP includes occupational medicine and environmental health operation which complies with all regulatory standards including federal, state and local requirements to assure that MAF is a healthy work environment.

Scope:

The Contractor shall provide professional medical and administrative personnel necessary to operate an OHP Clinic on a 5-day per week basis to fulfill the overall mission of providing Occupational Health Program in support of MAF personnel. The Contractor shall administer and document the OHP in accordance with NPR 1800.1, *NASA Occupational Health Program Procedures*.

2.2.1 Occupational Health Services

NOTE: When a non-NASA user(s)/tenant(s) has need to utilize the non-emergency aspects of Occupational Health Services, the activity (e.g. physical examinations) will be authorized and costed on an IDIQ basis. All emergency Occupational Health Services will be considered Mission Services.

Scope:

The Contractor shall operate and manage the MAF Occupational Health Services (OHS) for NASA for the care and treatment of NASA employees, MSFOC employees, and NASA on-site contractors including the provision of medical, occupational medicine, preventative health services, industrial hygiene services and health physics.

Work Requirements:

The Contractor shall:

1. Provide a licensed physician with occupational medicine experience to serve as the Medical Director and the head of the MAF Medical Clinic. As a minimum, medical service personnel shall meet the individual credential and license standards established by the State of Louisiana.
2. Develop and provide Standard Operating Procedures consistent with NPR 1800.1 for clinic operations, industrial hygiene and radiation safety operations in accordance with DRD 1234SA-003, *Occupational Health Services (OHS) Standard Operating Procedures for Clinic Operations, Industrial Hygiene, and Health Physics*.

3. Provide OHS management reports and statistics in accordance with DRD 1234SA-006, *OHS Statistics and Management Reports*.
4. Prepare all OHP reports for external agencies or organizations as required by law, and submit in a timely manner to NASA for transmittal to appropriate agencies.
5. Maintain all applicable documentation required by NASA, DOT, NRC or State of Louisiana.
6. Provide occupational health services, training, treatments, supplies, types and quantities of medications adequate to accommodate NASA employees and NASA on-site contractor workforce at MAF in accordance with MPR 1810.1, *MSFC Occupational Medicine* and MPD 1840.1, *MSFC Environmental Health Program*.
7. Provide OHS based on the principles and practices embodied in an OHP and encompassing the following:
 - a. Provide emergency medical treatment of occupational or non-occupational illnesses and injuries to include ambulance services for transportation to the nearest medical facility for treatment for all MAF user(s)/tenant(s) and visitors. The ambulance service shall meet the state of Louisiana requirements as an advanced life support unit.
 - b. Provide initial treatment, first aid and follow-up care for all occupational illnesses and injuries.
 - c. Provide non-work related and non-emergency medical treatment as appropriate and practical.
 - d. Provide job related physical examinations (initial/pre-placement, periodic, termination) as required by OSHA regulations, NPR 1800.1, *NASA Occupational Health Program Procedures* and MWI 3410.1, *Personnel Certification* or other applicable adopted standard.
 - e. Provide examinations which include special tests and procedures that are appropriate for the specific hazards to which an individual is exposed.
 - f. Develop a process to ensure that employees and their management are notified in writing or electronically of the pass or fail results of all job related physical examinations. This information shall also be available for review by the COTR. Support case review requests for those employees who do not meet the medical requirements of their job.
 - g. Provide copies of medical records upon receipt of a properly executed Release Form from the individual.

- h. Provide a MAF Employee Assistance Program (EAP).
- i. Provide preventive health services upon receipt of a completed Employee Work History Questionnaire. Preventive OHS includes but are not limited to:
 - 1) Physical examination which includes hematology, blood chemistries, urinalysis, pulmonary function, vision and audiometer testing, chest x-ray, electrocardiogram, and tonometry. Employees may elect to decline testing unless required by job certification.
 - 2) Special surveys and studies to determine the presence of or prevention of specific diseases (e.g., diabetic screening, Prostate Specific Antigen (PSA) tests).
 - 3) Provide an Immunization Program to include Diphtheria-Tetanus, Hepatitis A & B vaccine, tuberculosis (for those with potential exposure) and voluntary influenza vaccines.
 - 4) Provide education on health matters of general interest.
 - 5) Maintain status and health records, assess trends.
 - 6) Advocate and support a drug-free work place.

2.2.2 Industrial Hygiene Services

Scope:

The contractor shall implement industrial hygiene program requirements.

Work Requirements:

The Contractor shall:

1. Identify and control health hazards in the work environment and ensure compliance with the environmental health provisions of OSHA and Executive Order 12196, *Occupational Safety and Health Programs for Federal Employees*, to include but not limited to:
 - a. Conduct annual workplace Industrial Hygiene (IH) inspections, to address occupational health issues in all facilities, including surveys, studies, investigations, and follow-up.
 - b. Provide a comprehensive exposure assessment program to identify, evaluate and control chemical, physical, or biological agents that may be encountered in the work environment and determine compliance with applicable rules and regulations for personnel exposure to such agents.

- c. Recommend appropriate physical examination requirements to the MAF Medical Director for all persons working in occupations that are associated with identified hazards.
- d. Advise NASA MI&O of potential health hazards and make recommendations for proper preventive measures.
- e. Implement an effective food sanitation program that is preventive in nature and that conforms to the principles of the Hazard Analysis Critical Control Point (HAACP) standard, and NPR 1800.1, *NASA Occupational Health Program Procedures*. The program shall provide for food handler inoculations for hepatitis A and tuberculosis, as well as for epidemiological investigations of food borne disease.
- f. Inspect food preparation and storage areas to assure proper sanitation, care and storage of food.
- g. Monitor and test potable water on a distribution schedule as approved by the COTR.
- h. Work closely with NASA MI&O on interrelated issues involving both health and safety matters.
- i. Provide advisory services to NASA and MAF user(s)/tenant(s) of their federal, state and local regulatory obligations related to IH.
- j. Obtain laboratory support, as required, to study, analyze, and evaluate environmental, biological, and radiological materials (e.g., asbestos, bioaerosols, lead, radon, organics, microbials). Analytical and microbiological services shall be provided by an American Industrial Hygiene Association (AIHA) accredited laboratory or other industry accepted accreditations when a particular category is not listed by AIHA.
- k. Provide IH monitoring services to sample and analyze air contaminants (e.g., gases, vapors, dusts, fumes, mists, fibers, smoke) using recognized real-time measurement techniques and time-weighted sampling methodologies for contaminants that require subsequent laboratory analysis. All sampling shall be performed using a recognized method such as NIOSH, OSHA, etc. Provide IH monitoring of microbiological materials.
- l. Investigate reported indoor air quality complaints and perform monitoring/analysis and provide results to the Government within 2 working days of receipt of complaint.

- m. Implement an exhaust ventilation system testing program to include an inventory of all ventilation systems used to control hazardous air contaminants generated by hazardous operations and processes.
- n. Provide a documented program in accordance with NPR 1800.1 for each, but not limited to the following:
 - 1) Ergonomics
 - 2) Confined space entry
 - 3) Asbestos management
 - 4) Indoor air quality
 - 5) Radiation safety (ionizing and non-ionizing)
 - 6) Lead management
 - 7) Hexavalent Chrome
 - 8) Hearing Conservation
 - 9) Hazard Communication and Chemical Hygiene
 - 10) Automated External Defibrillators (AED)
- o. Review new and existing projects and facilities for industrial hygiene concerns, recommend appropriate controls, and work with the appropriate party for implementation.
- p. Provide centralized control over the procurement, use, storage, transportation, and disposition of ionizing and non-ionizing radiation sources in order to limit the exposure of personnel, facilities, and the environment to levels of radiation that are As Low as Reasonably Achievable (ALARA) and to administer a program that is in compliance with all applicable federal, state and local regulations.
- q. Ensure Nuclear Regulatory Commission (NRC) and State Material conditions are met for NASA licenses. NASA will maintain permit or license ownership.

2.2.3 Compliance

Scope:

The Contractor's OHS programs shall comply with the requirements of the latest versions of the following:

- NPD 1800.2, *Occupational Health Program Procedures*
- NPD 1810.2, *Occupational Medicine Program*
- NPD 1820.1, *Environmental Health Program*
- NPD 1830.1, *Employee Assistance Program*
- NPD 1840.1, *Workers' Compensation Program*
- NPD 1382.17, *Privacy Policy*
- NPR 1441.1, *Records Retention Schedules*
- NPR 1800.1, *Occupational Health Program Procedures*
- NPR 1820.1, *Hearing Conservation*

- NPR 1840.1, *Management of Workers Compensation, Injuries, and Illnesses*
- MPR 8715.1, *Marshall Safety, Health, and Environmental (SHE) Program*
- Occupational Safety and Health Act (OSHA) of 1970
- Executive Order 12196, *Occupational Safety and Health for Federal Employees* (dated February 26, 1980)
- Title 29 of the Code of Federal Regulations, Parts 1910, 1926, 1960
- U.S. Nuclear Regulatory Commission and the State of Louisiana Licenses which authorize handling of radioactive sources
- U.S. Nuclear Regulatory Commission Regulations
- U.S. Department of Transportation Regulations
- Privacy Act of 1974
- OSHA Record Keeping Regulations
- Health Insurance Portability and Accountability Act (HIPAA) Regulations

2.3 Emergency Management

Scope:

The Contractor shall provide and maintain services that support the NASA MAF Emergency Operations.

Work Requirements:

The Contractor shall:

1. Provide an emergency management preparedness program that includes policies, procedures, directives, and all hazard assessments that will prepare for, respond to, recover from, and mitigate the impacts of a wide variety of emergencies, including natural disasters, that could adversely affect the health and safety of personnel, continuity of mission essential operations and infrastructure, and the environment in accordance with:
 - a. NPR 8715.2, *Emergency Preparedness Plan Procedural Requirements*
 - b. MPD 1040.3, *MSFC Emergency Program*
 - c. MPR 1040.3, *MSFC Emergency Plan*
 - d. Homeland Security Presidential Directives 5, 8 and 12
2. Provide Emergency Operations Center (EOC) management and support, interoperable communication processes and systems, damage assessments, intercenter and interagency coordination, and mutual aid efforts.
3. Provide short and long term Continuity of Operations (COOP) planning to build in resilience for mission essential functions and infrastructure, support facilities, IT systems, Test, Training and Exercise (TT&E) activities and other essential interdependencies in accordance with:
 - a. NPD 1040.1, *NASA Continuity of Operations*

- b. NPR 1040.1, *NASA Continuity of Operations Planning Procedural Requirements*
 - c. MPR 1040.4, *Continuity of Operations Planning*
4. Prepare Emergency Preparedness and Continuity of Operations Plans (COOP) at MAF in accordance with DRD 1234MA-006, *Emergency Preparedness Plan* and DRD 1234MA-005, *Continuity of Operations Plan*.

2.3.1 Emergency Preparedness

Scope:

The Contractor shall provide and maintain services to support NASA MAF Emergency Preparedness.

Work Requirements:

The Contractor shall:

1. Provide Emergency Preparedness services to all MAF user(s)/tenant(s).
2. Designate a Contractor Emergency Coordinator responsible for supporting emergency preparedness planning and implementation and interface with the MAF Emergency Preparedness Officer.
3. Provide a response capability that can communicate and support any MI&O declared emergency, Presidential Declaration of Disaster or an Incident of National Significance in accordance with NPR 8715.2.
4. Develop, maintain, and conduct operational process verification reviews (of existing plans), to ensure an Emergency Management Plan (EMP) and other emergency plans adequately addresses evacuations; sheltering; post-disaster response and recovery; deployment of resources; interoperable communications; and warning systems.
5. Ensure emergency storm supplies are on-hand as required by NASA (Attachment J-12, Technical Exhibits). Conduct an annual inventory of storm supplies and provide to NASA no later than April 15th of each year.

2.3.2 Emergency Operations

NOTE: When the Contractor is providing support in a post emergency timeframe, the activities shall be authorized and costed on an IDIQ basis. All other Emergency Operations activities will be considered Mission Services.

Scope:

The Contractor shall provide and maintain services to support NASA MAF Emergency Operations.

Work Requirements:

The Contractor shall:

1. Provide EOC staff in accordance with EMP guidelines when major emergencies occur or are likely to occur, such as hurricanes, interagency emergency operations, and other emergency responses where an intra- or interagency response is required.
2. Provide support staff necessary to operate the EOC and related equipment (computer systems/software and communications equipment) as needed, in addition to being capable of staffing and maintaining an alternate facility under continuity of operations planning.
3. Support recovery operations to include physical inspection of buildings, structures, systems and equipment after a crisis has occurred.
4. Conduct emergency operations (whether NASA direct or interagency under plan or mutual aid agreement) consistent with the incident command structure identified in MPR 1040.3.

2.3.3 Continuity of Operations

NOTE: When the Contractor is providing support in a post emergency timeframe, the activities shall be authorized and costed on an IDIQ basis. All other Continuity of Operations activities will be considered Mission Services.

Scope:

The Contractor shall provide and maintain services to support NASA MAF Continuity of Operations (COOP).

Work Requirements:

The Contractor shall:

1. Support the development and implementation of an appropriate COOP.
2. Provide a high level of readiness that in the event of a declared emergency is capable of:
 - a. Implementation with and without warning.

- b. Achieving operational status within four (4) hours of activations.
 - c. Maintaining sustained mission essential operations for a minimum of thirty (30) days.
 - d. Utilizing existing and available field infrastructure where practical.
 - e. Assuring the continued operation of identified MAF mission essential infrastructure and operations.
- 3. Develop, maintain and administer a comprehensive TT&E program in accordance with NPD 8710.1 and other requirements as outlined in National Incident Management System (NIMS), Federal Continuity Directives 1&2 and the Homeland Security, Exercise and Evaluation Program (HSEEP).
- 4. Test the alert, notification and activation procedures and systems in accordance with Federal Continuity Directives 1&2.
- 5. Develop and administer a lessons learned and corrective actions program consistent with standards and requirements, to redress shortfalls and weaknesses identified during evaluation of TT&E activities.
- 6. Conduct annual exercises to demonstrate the capability to:
 - a. Execute emergency response plans using first response force
 - b. Mobilize a deliberate and pre-planned movement to activate and stand up the EOC (all hands) and the Alternate Facility (COOP Management, Support Team)
- 7. Provide a multi-year planning calendar that describes both NASA and external organization requirements for emergency management testing, training and exercises intended to demonstrate, evaluate, and ultimately improve the ability to execute the EMP capabilities.
- 8. Support and participate in biennial Agency national level exercise programs to evaluate Agency capabilities to execute emergency operating plans.
- 9. Coordinate activities with the emergency management officials of NASA, other MAF tenants, adjacent military installations, federal, state and local agencies.
- 10. Provide documentation of EMP activities such as training, response to emergencies, and accidents/incidents requiring emergency response, as requested.

3.0 Manufacturing Support

Scope:

The Contractor shall provide manufacturing support for NASA Flight Hardware and Software Projects and other user(s)/tenant(s) that are in production at MAF. This support consists primarily of the following functionalities:

- Integration of manufacturing operations
- Support of general manufacturing facilities
- Support for common manufacturing resources
- Support for dedicated manufacturing resources
- Implement Contamination and Foreign Object Debris Control Program

To successfully accomplish manufacturing support services, the Contractor will be required to coordinate, communicate and collaborate with the other entities who occupy the MAF manufacturing facilities in an independent manner that clearly and unequivocally demonstrates non-preferential treatment for all entities.

Within each of the above cited manufacturing functionalities, the Contractor will be responsible for various transition activities in support of NASA projects that are ending and beginning their respective production activities at MAF. These transition activities will require the Contractor to demonstrate the utmost flexibility in the assumption of its manufacturing support responsibilities during the transformation of MAF from a single project manufacturing environment to one that accommodates many projects and user(s)/tenant(s).

3.1 Integration of Manufacturing Operations

NOTE: Effort in this PWS section is not part of Mission Services, and if determined appropriate, will be authorized by an IDIQ task.

Scope:

The Contractor shall incorporate a Program Management and Systems Engineering (SE) approach to the integration of manufacturing operations. Basic SE principles will apply (e.g., development, integration, and implementation of requirements, master integrated schedule and critical path analysis, risk identification and mitigation, inter-system/discipline interaction.) The SE approach will give support for daily coordination, effective/timely communication and overall collaboration of information, issues, schedule, performance and development of consensus for NASA policy, programmatic direction and investment.

From a MAF manufacturing environment transition perspective, the Contractor will assume responsibility for integration of all manufacturing operations upon conclusion of the contract phase in period. Following the contract phase in period, the Contractor shall integrate manufacturing support operations in a manner that allows ET to have

priority access to perform critical processes, and continue daily management and operations of Manufacturing Support services as defined in J-1-C. The Contractor shall provide planning to allow other user(s)/tenant(s) to perform daily management and operations of critical manufacturing support services in accordance with the policies and priorities established by the governance structure at MAF.

Integration of shared manufacturing areas between NASA projects and new user(s)/tenant(s) includes but is not limited to:

1. Transportation and handling
2. Laboratories
3. Chemical clean facilities
4. Clean rooms
5. Paint shops
6. Storage areas
7. Heat Treat facilities
8. Machine shop(s)
9. Buildings 103, 110, 114, 130, 131, 318, 420, 451

Details of the transition and assumption of responsibility for manufacturing support requirements are defined in Attachment J-1-C, *Manufacturing Support Requirements & Timeline*.

Work Requirements:

The Contractor shall:

1. Formulate and collect facility user(s)/tenant(s) requirements to:
 - a. Collect and evaluate user(s)/tenant(s) needs, uses and requirements.
 - b. Identify MAF manufacturing capabilities that are available to user(s)/tenant(s) in performance of their requirements.
 - c. Identify basic requirements user(s)/tenant(s) must meet in order to operate in the MAF manufacturing environment (e.g. certification, training.)
 - d. Coordinate user(s)/tenant(s) requests for new services within pre-existing commitments to ensure compatibility and fulfillment with existing resources.
2. Implement user(s)/tenant(s) requirements:
 - a. Support user(s)/tenant(s) assessments and reviews (e.g. System Integration Reviews (SIR), Operational Readiness Reviews (ORR), and Production Readiness Reviews (PRR)).

- b. Coordinate, integrate and communicate with multiple user(s)/tenant(s) and facility/manufacturing support interfaces to:
 - 1) Maintain a digital planning and integrated manufacturing support schedule that will identify resource conflicts and inform all users of critical operations.
 - 2) Establish a baseline and control changes and/or updates to the integrated manufacturing support schedule.
 - 3) Maintain documentation designating space allocations for each user(s)/tenant(s).
 - 4) Maintain any and all infrastructure and software configurations of common manufacturing areas up to demarcation points with dedicated manufacturing areas.
 - 5) Provide an Interface Working Group (IWG) that incorporates representation from user(s)/tenant(s), Government service providers, security, safety, facilities management, property management and NASA management to assess integration planning for utilization of MAF resources.
 - 6) Communicate changes, assess impacts and ensure integration across all interfaces and potential affected parties.
 - 7) Utilize CMMS for documentation, fulfillment and coordination of user(s)/tenant(s) requirements.
- c. Provide SE support to MAF control boards and working groups to:
 - 1) Support and/or lead trades and analyses to support facility modification planning, operations and maintenance, risk assessments and development of user requirements/agreements.
 - 2) Coordinate operations, maintenance, industrial safety and integrated system safety assessments to support collection and evaluation of hazardous user(s)/tenant(s) manufacturing processes and procedures. These assessments will be used by NASA to evaluate and ultimately approve or disapprove implementation of operations that may negatively impact FSEU, tooling/equipment, and flight hardware or personnel safety.
 - 3) Provide engineering tools to evaluate user(s)/tenant(s) requests to MAF control boards and working groups.
 - 4) Review, assess and provide feedback to user(s)/tenant(s) "Change Packages" in support of the evaluation and subsequent approval/disapproval of user(s)/tenant(s) requests.

3.1.1 Integration Roles and Responsibilities:

Scope:

The Contractor shall provide personnel to fulfill the role and responsibilities of Production Support Lead Engineer (PSLE), Unit Operations Manager (UOM), and Facilities Area Engineer (FAE). These contractor roles are in support of and in conjunction with the NASA civil service role of Production Support Systems Manager (PSSM) who serve as the primary integration interface points with production user(s)/tenant(s). Figure 3.0 graphically portrays the relationship of the PSLE to other PSLE's, PSSM's, and other MAF entities.

MANUFACTURING INTEGRATION ROLES AND RESPONSIBILITIES

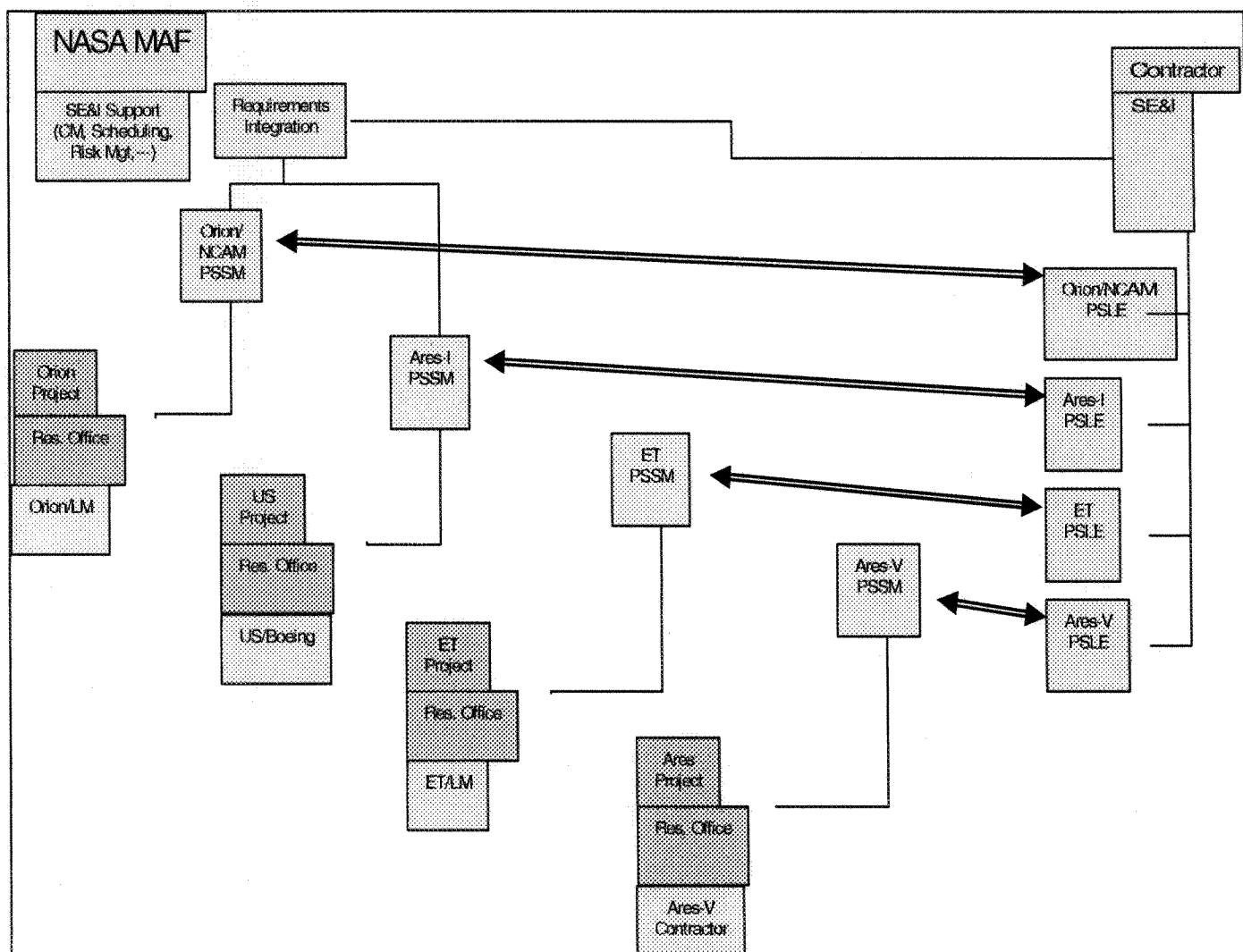


Figure 3.0

A) Production Support Lead Engineer (PSLE):

Work Requirements:

The Contractor shall:

1. Perform the role of PSLE. Contractor personnel assigned to fulfill the PSLE role shall have detailed engineering knowledge of the MAF manufacturing capabilities and resources. The primary function of the PSLE is to assist the PSSM and to serve as the contractor counterpart of the PSSM. As a rule, a PSLE will be assigned to support each PSSM.
2. Perform PSLE responsibilities that include serving as a advocate for the assigned user(s)/tenant(s) in the coordination of its MAF manufacturing resource requirements definition, management and implementation to include:
 - a. Assist the PSSM in collecting, analyzing and inputting user(s)/tenant(s) requirements (everything from office space to production and facility requirements) including requirements for shared capabilities.
 - b. Coordinate with other user(s)/tenant(s) personnel to ensure that the requesting user(s)/tenant(s) requirements can be accommodated.
 - c. Coordinate with other PSLE's to ensure that the "Integrated" manufacturing production plan and schedule identified in Section 3.1.2 continues to meet the needs of the entire user(s)/tenant(s) community. Identify and communicate impacts/conflicts to the PSSM and develop mitigation recommendations.
 - d. Coordinate with the PSSM, UOM and other affected parties to ensure user(s)/tenant(s) requirements are implemented and provide timely communication/resolution of issues/problems.
 - e. Coordinate changes in user(s)/tenant(s) requirements and advocate accommodation of changes into the integrated manufacturing support schedule.

B) Unit Operations Manager (UOM):

The Contractor shall:

1. Perform the role of UOM. Contractor personnel assigned to fulfill the UOM role shall have extensive experience in the assigned manufacturing area. UOM area(s) can consist of a single cell, multiple cells, or an entire building. UOM(s) may have other support personnel (e.g., engineers, operators, "cell control mechanics") that are assigned to assist in the performance of responsibilities.

2. Provide UOM support to the PSSM and/or PSLE in evaluation of new and/or changing user(s)/tenant(s) requirements impacting the assigned manufacturing area.
3. Ensure availability of day-to-day support needed for efficient operation of the assigned manufacturing area including:
 - a. Cell preparedness (e.g., configuration control, facility operational readiness, shared Computer Numerical Controlled (CNC) machine software verification/validation.)
 - b. Functional and/or institutional support is available when required.
 - c. Cell and/or building utilization schedule is current and executed.
 - d. Identification of issues to PSSM/PSLE.
 - e. Meeting support as required.

C) Facilities Area Engineer (FAE):

The Contractor shall:

1. Perform the role of FAE. Contractor personnel assigned to fulfill the FAE role shall have detailed experience in and be responsible for all aspects of facilities work being performed in a specific area or building. FAE is knowledgeable of all activities occurring in and the operational readiness of a specific area or building. The FAE is responsible for communicating this information to the UOM and/or PSLE and to work closely with the UOM to efficiently integrate facilities activities with production operations in a specific area or building.
2. The FAE is responsible for:
 - a. Ensuring performance of all facility maintenance and construction activities in assigned area or building is coordinated with the UOM to eliminate or minimize any impact to user(s)/tenant(s).
 - b. Supporting operational readiness and checkout of assigned area or building prior to user(s)/tenant(s) first use.
 - c. Providing for continuous facilities operational readiness of assigned area or building.
 - d. Identifying facilities issues to the UOM and/or PSLE.
 - e. Support meetings as required.

3.1.2 Integration Schedules

Scope:

The Contractor shall integrate schedules from all user(s)/tenant(s) and supporting activities into an integrated manufacturing support schedule in accordance with DRD 1234MS-001, *Integrated Manufacturing Support Schedule (IMSS)*. User(s)/tenant(s) will provide schedule information including updates for

work within the MAF manufacturing environment. These user(s)/tenant(s) schedules will contain the duration (e.g., show the time at each tool, station or cell) and interdependencies that represent the process flow of the components while they are in the MAF manufacturing environment. The Contractor shall ensure proprietary user(s)/tenant(s) schedule data is not transferred inappropriately to other user(s)/tenant(s) without consent.

The Contractor shall review user(s)/tenant(s) schedules and incorporate pertinent milestones into the integrated manufacturing support schedule. The Contractor shall identify schedule conflicts and work with affected user(s)/tenant(s) to identify alternatives and/or seek resolution. When resolution is not achieved, NASA control boards, beginning at the lowest level, will review conflicts and set priorities for operational use of manufacturing resources. The Contractor shall provide user(s)/tenant(s) continuous access to the Integrated Manufacturing Support Schedule and conduct operational schedule meetings with all user(s)/tenant(s) as needed to facilitate smooth operation of the manufacturing environment.

3.2 General Support of Manufacturing Facilities

Scope:

The Contractor shall provide facility operations support to the user(s)/tenant(s) operating within the MAF manufacturing environment in accordance with other WBS elements of this PWS. Facility operations support includes but is not limited to:

- Program management
- Safety, health and emergency management
- Maintenance
- Site services and operations
- Logistic services
- Property management
- Construction management
- Sustaining engineering
- Environmental management

From a MAF manufacturing environment transition perspective, the Contractor will assume responsibility for support of manufacturing general facilities upon contract award.

3.3 Support for Common Manufacturing Resources

NOTE: *Effort in this PWS section is not part of Mission Services, and if determined appropriate, will be authorized by an IDIQ task.*

Scope:

The Contractor shall manage, operate and maintain common manufacturing FSEU that multiple user(s)/tenant(s) are required to share. The Contractor shall schedule use of these resources and integrate into the user(s)/tenant(s) production activity plans.

The Contractor in conjunction with the governance structure at MAF, shall ensure that the ET Project has priority access to the common manufacturing resources, as well as the flexibility for continued management; operation and/or maintenance of certain common manufacturing resources until such time as the ET Project no longer needs a specific resource or ET Project use of all MAF resources are released.

The Contractor shall assume responsibility for support of common manufacturing areas on a case by case periodic basis in accordance with the schedule provided in Attachment J-1-C, Manufacturing Support Requirements and Timeline.

Work Requirements:

The Contractor shall:

1. Ensure the capabilities of the common manufacturing support facilities/services are:
 - a. Maintained at a minimum level of operational readiness
 - b. Preserved during production down time
2. Ensure Contractor personnel are made available to user(s)/tenant(s) upon request for operational activities.
3. Ensure all Contractor personnel performing operations are properly trained, certified and qualified for the work requirements including ability to recognize job hazards for equipment being used.
4. Provide recommendations with appropriate supporting analysis and rationale that result in optimal utilization of common manufacturing resources.

3.4 Support for Dedicated Manufacturing Areas

NOTE: Effort in this PWS section is not part of Mission Services, and if determined appropriate, will be authorized by an IDIQ task.

Scope:

The Contractor shall provide support, on an as requested basis, to user(s)/tenant(s) that are responsible for managing, operating and maintaining

assigned facilities, services and/or equipment within a dedicated manufacturing area.

The Contractor shall, on an as requested basis, provide resources necessary to support technology development activities.

The Contractor shall, on an as requested basis, assume responsibility for support of ET Project dedicated manufacturing areas on a case by case periodic basis in accordance with the schedule provided in Attachment J-1-C, Manufacturing Support Requirements and Timeline.

Work Requirements:

The Contractor shall:

1. Maintain all MAF infrastructures upstream of user(s)/tenant(s) dedicated manufacturing area equipment/tooling (e.g., general plant HVAC devices, factory lighting, electrical power up to and including distribution panel, etc.) as defined in Section 4.0.
2. Maintain certifications on all pressure vessel systems as defined in Section 4.7.
3. Establish minimum levels of training and certification for operators of general purpose equipment (e.g., cranes, forklifts.) as defined in Section 1.2.4.
4. Provide project management and execution for all facility construction requirements identified and funded by a user(s)/tenant(s) as defined in Section 8.0 and Section 10.0.
5. Support Operational Readiness Review (ORR) for activation of user(s)/tenant(s) equipment and/or facilities as defined in Section 2.1.
6. Provide site services as appropriate (e.g. custodial, grounds.) as defined in Section 5.0.

3.5 Contamination and Foreign Object Debris Program

Scope:

The Contractor shall establish and monitor an overall integrated facility Contamination and Foreign Object Debris (FOD) Program. The FOD Program shall contain clearly defined user(s)/tenant(s) roles and responsibilities for dealing with contamination and FOD control related items. The Contractor shall provide support on an as requested basis to user(s)/tenant(s) that are

responsible for implementing FOD control within assigned dedicated manufacturing areas.

The existing ET Project FOD Program will remain in effect for ET Project dedicated manufacturing areas and any common manufacturing areas operated and maintained by ET Project until use of MAF resources are released by ET Project.

Work Requirements:

The Contractor shall:

1. Submit a plan for Contamination and Foreign Object Debris Prevention in accordance with DRD 1234MS-002, *FOD Prevention Plan* that addresses but is not limited to:
 - a. Due consideration of the cleanliness requirements for the most sensitive hardware when evaluating processing use of common manufacturing areas/facilities, laboratories, ground support equipment, and handling hardware.
 - b. Establishment of a facility contamination and FOD council consisting of representation from all user(s)/tenant(s) to ensure communication of common concerns and lessons learned.
 - c. Designation of an individual responsible to act as an overall MAF facility contact.
 - d. Potential for cross contamination when multiple user(s)/tenant(s) use common manufacturing areas.
 - e. Cleanliness level acceptance limits and verification methods for fluids, internal surfaces and external surfaces in common manufacturing areas.
 - f. Cleaning, inspection and re-certification methodology and frequency for FOD areas.
 - g. Methodology for protecting hardware (e.g., bagging and packaging criteria for material during maintenance and construction activities.)
 - h. Establishment and monitoring of controls for cranes and transportation equipment.
 - i. Retention of FOD data.
 - j. Control of equipment capable of producing combustible products within a building.
 - k. Personnel training requirements including visitors/transients
 - l. Establishment and monitoring of controls for clean rooms including garments.

4.0 Maintenance

Scope:

The Contractor is responsible for implementing a planned, strategic approach to maintaining and improving the condition of the MAF infrastructure to execute current and future requirements.

These activities shall emphasize supporting the missions of MAF in a safe, reliable, and timely manner, with minimum disruptions to the facility user(s)/tenant(s), flight hardware production, systems and production processes. NPR 8831.2, Facilities Maintenance Management, shall be used as a performance guide. Maintenance functions shall be performed, by skilled craftsmen, technicians and/or engineers, for all MAF FSEU as described in Attachment J-7, Government Furnished Property and as described in Attachment J-8, Government Furnished Facilities.

The Contractor is responsible for planning and scheduling maintenance work to ensure all labor, equipment, and materials are available to complete work requirements within the specified time limits and within established standards Data submissions will be in accordance with DRD 1234OM-007, *Headquarters Metrics Data*.

Work Requirements:

The Contractor shall:

1. Perform standard facility maintenance functions to include:
 - a. Maintenance Planning
 - b. Preventive Maintenance
 - c. Corrective Maintenance
 - d. Reliability Centered Maintenance
 - e. Maintenance Projects
 - f. Maintenance Engineering
 - g. Pressure Vessels Systems Management
 - h. Other Maintenance Activities
2. Support the missions of MAF in a safe, reliable, and timely manner, with minimum disruptions to the facility user(s)/tenant(s).

4.1 Maintenance Planning

Scope:

The Contractor is responsible for:

- Maintenance task identification
- Annual work plan
- Five-year maintenance plan
- Facility condition assessments (FCA)

- Work order planning and scheduling

The Contractor shall follow a basic tenet for maintenance planning wherein implementation of maintenance plans will not cause interference with the normal occurrence of NASA Projects' performance. In those cases where some interference is unavoidable, the Contractor shall make every effort to minimize the impact of the interference and its effects on the user(s)/tenant(s). The intent of the Government is for the Contractor to develop an optimal maintenance schedule and plan in conjunction with the affected user(s)/tenant(s) rather than to impose a rigid fixed maintenance schedule and plan.

The Contractor shall utilize Industry standards and guides, past Government records and corporate experience when developing maintenance plans.

The Contractor shall develop a maintenance program which considers facilities with restricted entry, and that produces the most appropriate and effective availability of equipment and operational efficiency of buildings or utility systems when such are used for their intended purpose.

4.1.1 Annual Work Plan

Scope:

The Contractor is responsible for preparing a plan on an FY basis for all maintenance work in accordance with DRD 1234OM-001, *Annual Work Plan*. The basis of the plan will incorporate historical information, record of work performed analysis, emerging trend analysis, and the use of predictive testing and inspection (PT&I) results to help forecast maintenance schedules and assist in reducing overall maintenance costs to the Government. The plan will include:

- Budget estimates for maintenance to be accomplished
- Identification of incidental non-maintenance work necessary to efficiently accomplish the plan
- Trend identification and recommendations for any change to the maintenance approach
- All systems, equipment and real property under the Contractor's purview
- Schedule for reviewing all systems and accomplishing all planned maintenance
- Technical rationale supporting recommendations
- Identification of risks associated with recommended changes and with accomplishment of plan

Engineering assessment will address at a minimum probability of failure, potential effect on NASA mission success, potential effect on safety and mitigation plans.

Recommendations for changes to the maintenance approach will include Reliability Centered Maintenance (RCM) strategy as a basis.

4.1.2 Five Year Maintenance Plan

Scope:

The Contractor shall develop a five-year plan to forecast maintenance needs beyond the annual work plan. The plan shall be prepared in accordance with DRD 1234OM-003, *Five Year Maintenance Plan*.

4.1.3 Facility Condition Assessment

Scope:

The Contractor shall continuously conduct standardized Facility Condition Assessments (FCA) such that each MAF facility is assessed at least once within every three (3) year period. Results shall be documented in CMMS.

Work Requirements:

The Contractor shall:

1. Perform FCA surveys per DRD 1234OM-008, *Facility Condition Assessment Schedule and Reports* that will:
 - a. Assess the condition of each facility to determine the overall average condition of MAF.
 - b. Perform a physical observation and record findings to include the use of PM and PT&I data where applicable.
 - c. Include labor, material, and overhead costs in the backlog of maintenance and repair (BMAR).
 - d. Include recommendations for maintenance that is needed to support reliable facility performance at the least cost.
 - e. Encompass the different components of MAF facilities (e.g., roofs, pumps, air conditioning, interior finishes, electrical devices and systems, roads, storage tanks, grounds, sidewalks, drainage systems, and utility systems.)
 - f. Establish an FCA schedule that includes individual FCA report dates for all MAF facilities and associated BMAR data.

4.1.4 Work Order Planning and Scheduling

Scope:

The Contractor shall utilize Computerized Maintenance Management Systems (CMMS) to control, schedule and monitor operations, maintenance, trouble calls, service orders, and other maintenance activities.

The Contractor shall plan and schedule maintenance to ensure all labor, equipment, and materials are available to complete work order job requirements within specified time limits and established standards.

The Contractor shall make an initial assessment of work order requests when received to define the job scope to be performed. This assessment shall encompass a job breakdown to include detailing and sequencing of job steps, material take-offs and procurement requirements.

The Contractor shall assemble job packages that include job steps, materials and a schedule to accomplish the work. Work orders shall be scheduled to provide for efficient completion of the job requirements and to avoid conflicts with ongoing manufacturing processes and/or other MAF user(s)/tenant(s).

Work Requirements:

The Contractor shall:

1. Bring together in precise timing the following elements of a successful maintenance job:
 - a. Labor
 - b. Tools
 - c. Materials
 - d. Parts and supplies
 - e. Information
 - f. Engineering data
 - g. Reference drawings
2. Match each week's demand for service with available resources taking into consideration skill requirements, personnel leave and training, and other direct and indirect commitments. Planning and scheduling work orders for maintenance in critical production areas will require an increased focus on this aspect of the planning process.
3. Prepare a Weekly Work Order Schedule that portrays realistic expectations regarding accomplishment of planned work orders with available resources. Consideration should be given to alternative assignment strategies when specific work order jobs require specialized skills.
4. Assure all PM routines identified in the Weekly Work Order Schedule will be accomplished within the time limits established Attachment J-12, Technical Exhibits.
5. Distribute the Weekly Work Order Schedule to supervisors responsible for accomplishment of scheduled jobs and ensure supervisors understand the requirements contained in their assigned jobs.

6. Evaluate and assign priorities for the completion of all work orders. Work order backlog per craft skill shall be limited to no more than six months.
7. Work order closeout shall include documenting performance feedback and recommended enhancement to job steps in CMMS.

4.2 Preventive Maintenance (PM):

NOTE: When the Contractor is providing preventive maintenance to user(s)/tenant(s) in dedicated manufacturing areas, the activities shall be authorized and costed on an IDIQ basis. Preventive Maintenance activities associated with fluctuations in demand for manufacturing resources (e.g. PM's for equipment transitioning from a dedicated manufacturing area to another dedicated manufacturing area or to the common manufacturing area) may also be authorized on an IDIQ basis. All other Preventive Maintenance activities will be considered Mission Services.

Scope:

The Contractor shall provide all labor, equipment and materials to accomplish PM work order requirements within specified time limits and established standards per Attachment J-12, Technical Exhibits.

Work Requirements:

The Contractor shall:

1. Prepare a plan outlining the Contractor's approach to preventive maintenance at MAF in accordance with DRD 1234OM-002, Preventive Maintenance Plan.
2. Develop the PM procedures utilizing existing PM procedures available in CMMS (reference Technical Library), original equipment manufacturer (OEM) recommendations, Contractor knowledge of industry PM best practices, engineering rationale, RCM approaches and PT&I data as shown in Attachment J-12, Technical Exhibits.
3. Update the PM procedures as maintenance requirements are added, deleted or otherwise modified for assigned FSEU listed in Attachment J-7 and Attachment J-8.
4. Obtain Government approval prior to updating PM procedures for critical production and life safety items that result in reductions in the level of maintenance (e.g., lessening frequency of PM or rescheduling PM past the due date).

4.3 Corrective Maintenance:

Scope:

The Contractor shall restore to proper working condition, through performance of corrective maintenance, all assigned FSEU under the Contractor's purview.

Work Requirements:

The Contractor shall:

1. Respond to and complete all assigned CMMS work orders for Corrective Maintenance (CM).
2. Repair any incidental and related damage resulting from performance of initial work order (e.g. replace ceiling tiles damaged by a leaking roof).
3. Stabilize emergency CM call situations and take steps to assure similar emergencies do not recur.
4. Ensure completion of CM permanent repairs result in restoration to original design requirements or equivalent.
5. Submit "red line" drawings portraying the "as built" condition for CM work orders that change configuration of a system.
6. Maintain sufficient quantities of material on hand or have available an immediate source of supply to support CM work order calls.

4.3.1 Maintenance Workmanship and Materials

Scope:

The Contractor shall provide quality workmanship and materials in the performance of maintenance requirements.

Work Requirements:

The Contractor shall:

1. Ensure any item repaired under a CM work order:
 - a. Is free from missing components or defects
 - b. Enhances the safety, reliability, availability, pleasing appearance, and/or habitability of the facilities
 - c. Functions per the intended design or use
2. Carry to completion all corrected or repaired work to include:
 - a. Touch-up painting.
 - b. Operational checks.
 - c. Compatibility with adjacent surfaces or equipment.

- d. Matching existing dimensions, capacities, materials, quality of work, finish, color, design, and function, unless otherwise specified in the CM work order.
- e. Precluding debris from being spread unnecessarily into adjacent area, nor accumulate in the work area itself.
- f. Removal of excess material and/or parts upon completion of work or at the end of the workday, whichever occurs first.
- g. Removal of unsightly visual appearances (e.g. fingerprints, stains, surface degradations) caused during CM work order performance.

4.3.2 Corrective Maintenance Work Order Documentation

Scope:

The Contractor shall provide documentation of Corrective Maintenance Work Orders.

Work Requirements:

The Contractor shall:

- 1. Prepare an electronic work order for each CM call received.
- 2. Combine work order items that are duplicate requests.
- 3. Manage, update and maintain CM work orders in CMMS in a manner that supports providing current status on demand.
- 4. Ensure a work order is completely filled out upon job completion.

4.4 Reliability Centered Maintenance

Scope:

The Contractor shall establish Reliability Centered Maintenance (RCM) as an embedded process within the maintenance organization to include senior management involvement in the process. The Contractor shall integrate RCM strategies to utilize the strength of each technique, to achieve the maintenance goal of attaining building and system availability at the lowest life cycle cost while meeting all standards for security, environmental, health, safety and MAF mission requirements.

Work Requirements:

The Contractor shall:

- 1. Integrate RCM throughout the entire organization.
- 2. Establish the "fix as you find" philosophy within the RCM process and repair those items in a timely manner.
- 3. Utilize RCM to achieve the optimum mix of reactive, preventive, condition based, and proactive maintenance practices.

4. Establish Root Cause Failure Analysis (RCFA), Failure Modes and Effects Analysis (FMEA) and Age Exploration as proactive maintenance techniques.

4.4.1 Reliability Centered Maintenance Approach

Scope:

The Contractor shall provide all labor, equipment and materials to complete RCM requirements within the specified time limits and established standards. The Contractor shall maintain RCM routes as maintenance requirements are added, deleted, or modified for systems, equipment and property within the Contractor's purview.

Work Requirements:

The Contractor shall:

1. Utilize RCM philosophy to develop maintenance procedures.
2. Determine the type of maintenance (e.g., CM, PM, PdM, Alternative) appropriate for each system, item of equipment or real property.
3. Identify and evaluate for possible elimination of intrusive PM procedures.
4. Utilize the RCM strategy defined in NPR 8831.2, *Facilities Maintenance Management* to identify trends and to propose changes to maintenance approaches.
5. Provide technical rationale for systems recommendations and identify risk associated with proposed changes to include probability of failure and effect on NASA mission or safety.
6. Prepare an RCM implementation and RCM metrics report in accordance with DRD 1234OM-009, *Reliability Centered Maintenance Report*.

4.4.2 Reliability Centered Maintenance Engineering

Scope:

The Contractor shall establish a lead RCM Engineering function that will encompass the responsibilities contained in the following Specific Work Requirements.

Work Requirements:

The Contractor shall:

1. Review PT&I data to identify impending equipment failures.
2. Investigate all equipment failures and determine actions necessary to prevent or mitigate similar failures in the future.
3. Investigate multiple failures on individual pieces of equipment and perform root cause analyses.

4. Review the PM plan and make recommendations for continuous improvement based upon equipment history, PT&I data and industry best practices and emerging technologies.
5. Monitor equipment and system performance and initiate actions to resolve operational deficiencies, improve performance and increase reliability.
6. Monitor effectiveness of the PM and PT&I programs and recommend improvements (available in Technical Reference Library).
7. Review CMMS and PT&I data to identify key areas for improvement in maintenance programs to optimize quality and timeliness of service and system reliability.

4.5 Maintenance Projects

NOTE: When the Contractor is performing maintenance projects valued at less than \$50,000, the effort is considered Mission Services. Maintenance projects valued at \$50,000 or more will be authorized by an IDIQ task.

Scope:

The Contractor shall provide labor, materials, equipment and supplies to plan, manage and implement maintenance projects. Maintenance projects are typically below the \$500,000 CoF project limit and include replace or repair in-kind type activities.

The Contractor shall:

- Prepare replacement and/or repair instructions including sketches and detailed descriptions.
- Prepare cost estimates for maintenance projects.
- Perform critical path planning and scheduling.
- Perform necessary surveillance on each project including projects performed by subcontractors.

4.6 Maintenance Engineering

Scope:

The Contractor shall provide continuous engineering services that optimize FSEU availability in a cost effective manner and that meet existing and/or changing mission needs of user(s)/tenant(s).

The Contractor shall ensure assigned equipment and property is:

- Capable of fulfilling original design intent.
- Compatible with current operational use.
- Modified to upgrade operational performance.
- Redesigned to improvement safety, efficiency, or cost effective operations.

- Available to support other required engineering activities.

Work Requirements:

The Contractor shall:

1. Conduct engineering studies to define Local Project plans and requirements that include supporting justification and clear, accurate and complete project scope.
2. Review, assess, and validate project requirements on assigned work taking into consideration.
 - a. Safety
 - b. Reliability (redundancy and mean-time-between failures)
 - c. Performance specifications
 - d. Operational constraints
 - e. Site conditions
 - f. Life cycle cost (sustainability, maintainability, constructability)
3. Perform engineering analysis for out-of-family problems on assigned equipment and property that warrants proactive action to avoid a major outage or critical disruption to operations.
4. Perform root-cause analysis utilizing techniques consistent NPR 8621.1, *Procedural Requirements for Mishap and Close Call Reporting, Investigating and Recordkeeping*. Provide findings within thirty (30) days on in-service problems that result in disruption to critical operations, high-visibility anomalies or as requested by the Government.
5. Develop and maintain an engineering review process that utilizes peer review techniques and incorporates senior level review/approval of technical decisions. Utilize the review process to provide input on major design changes for assigned mission critical/essential equipment and property anomaly resolution and associated corrective actions as well as return-to-service following major modification or anomaly. The review process shall integrate Government participation.
6. Perform required incidental design changes (field changes) for assigned equipment and property to resolve operational, performance, maintainability, or safety related issues.
7. Participate in all engineering design reviews (e.g., Construction of Facilities, user(s)/tenant(s) local projects, NASA managed projects.) Review all facility design criteria statements, design drawings and design packages for compliance with Government standards and mission requirements. Provide comments as appropriate.

8. Attend construction inspections and submit findings to the Government.
9. Perform required engineering services in support of activation of newly constructed equipment and property being remanded to the Contractor's responsibility.
10. Maintain technical cognizance of proposed and implemented changes to all federal, state, and local laws, regulations, policies, directives and industry standards. Provide an impact assessment of any changes to the Government.
11. Provide Lifting Device Engineering personnel qualified in control systems to review CMMS lifting device work orders and to monitor and direct all maintenance, repair, modification, installation and certification of lifting equipment, including but not limited to cranes, hoists, derricks, and elevators. Provide elevator reports in accordance with DRD 1234OM-010, *Annual Elevator Inspection Report* and DRD 1234OM-011, *Five Year Elevator Inspection Report*.
12. Communicate effectively across a broad range of organizational levels, including managerial, supervisory, technical and craft personnel.
13. Make effective technical and managerial decisions in regard to the maintenance and operation of assigned system(s), based upon demonstrated knowledge of and experience with industry practices, tools, shops and training.
14. Perform System Engineering including but not limited to:
 - a. Maintain a broad knowledge of work related technical issues (e.g. environmental and safety requirements, systems integration, monitoring and metering concepts).
 - b. Maintain state-of-the-art technical expertise in assigned systems and maintain knowledge of current industry trends through:
 - 1) Review of technical publications
 - 2) Attending trade shows
 - 3) Manufacturer literature and product briefings
 - 4) Other continuing education methods
 - c. Ensure all maintenance work complies with configuration control requirements and provide documentation of configuration changes.
 - d. Update the Government on system(s) status and key events.
 - e. Provide assistance in troubleshooting and resolution of system(s) problems.
 - f. Develop scope, performance work statements, specifications and the technical component of bid packages for outsource procurement of technical consulting, system and equipment operation and/or repair and other maintenance engineering services.

- g. Monitor system(s) and equipment performance and initiate actions to resolve operational deficiencies, improve performance, increase reliability and improve energy efficiency.
- h. Monitor effectiveness of PM and PT&I programs and recommend improvements.
- i. Ensure engineering practices are followed by all craft personnel in all work performance.
- j. Ensure all applicable codes, standards, and other requirements are met in the performance of work.
- k. Provide the Government with recommendations for the disposition of failed equipment (i.e., repair or replace) with a value of over \$25,000.
- l. Provide specifications for replacement equipment when not specified by design.

4.7 Pressure Vessels Systems Management

NOTE: When the Contractor is providing Pressure Vessels Systems Management in dedicated manufacturing areas, the PWS scope will be authorized and costed on an IDIQ basis. All other Pressure Vessels Systems Management will be considered Mission Services.

Scope:

The Contractor shall manage a Pressure Vessel Systems (PV/S) certification program in accordance with NPD 8710.5C, *Policy for Pressure Vessels and Pressurized Systems* and MPR 8823.2, *Pressure Systems Certification Requirements*, for all fixed and mobile PV/S.

Work Requirements:

The Contractor shall:

- 1. Implement and maintain certification and in-service inspection (ISI) plans for fixed PV/S assigned to the Contractor.
- 2. Perform required PV/S ISI's, certifications and re-certifications for fired and unfired PV/S in accordance with:
 - a. Applicable ASME pressure vessel or piping standards.
 - b. NPR 8715.3, *NASA General Safety Program Requirements*.
 - c. Current national consensus codes, standards and guidelines.
 - d. PV/S schedules/inspection data shall be entered in CMMS.
- 3. Update configuration control drawings and documentation to reflect findings and changes noted during ISI's, certifications and re-certifications.
- 4. Perform PV/S procedures in accordance with NPR 8715.3:
 - a. Periodic inspections and tests

- b. Maintain operating records
 - c. Reevaluate certification status when changes occur
 - d. Maintain certification data packages as official quality records
 - e. Perform stress analysis
 - f. Perform material evaluation
 - g. Perform non-destructive tests including ultrasonic, penetrate, radiographic evaluation and acoustic emission
5. Annually report results of PV/S inspections, repairs, and all other data in electronic format.
6. Maintain the PV/S documentation in accordance with DRD 1234OM-012, *Annual Pressure Vessel Inspection Plan and Report*.

4.8 Other Maintenance Activities

Scope:

The Contractor shall provide other maintenance activities as defined below.

Work Requirements:

The Contractor shall:

1. Provide personnel trained and certified in asbestos removal/abatement. Some MAF infrastructure may contain asbestos and require special handling and disposal.
 - a. Eliminate the potential hazard of asbestos containing material (ACM), either by repair or removal of the damaged ACM, when performing maintenance activities in support of facility projects. Asbestos removal shall be under the direction of a State of Louisiana licensed Asbestos Consultant.
 - b. Perform all ACM work in accordance with the requirements of:
 - 1) 29 CFR 1926.11.1, *Asbestos in Construction*
 - 2) 40 CFR Subpart M, *National Emission Standard for Asbestos*
 - 3) Section 10.0 Environmental of this PWS
2. Begin maintenance and operations of new and replacement equipment as soon as placed into service:
 - a. Equipment may be replaced upon reaching "end of service life" or upon becoming uneconomical to repair per the PM plan.

- b. Equipment replaced in-kind (including upgrade to accommodate new technology) shall not relieve the Contractor of the responsibility of continued performance.
3. Number and tag equipment when placed into service to include subsequent entering of information into CMMS. The Contractor has ultimate responsibility for bar coding equipment, but must coordinate with other user(s)/tenant(s) at MAF to ensure all equipment information is reflected in CMMS.

5.0 Site Services

Scope:

The Contractor shall implement site services at MAF.

Work Requirements:

The Contractor shall:

1. Perform standard logistics operations functions to include:
 - a. Food Services
 - b. Mail Services
 - c. Custodial Services
 - d. Recycling Program
 - e. Multimedia Services
 - f. Reproduction Services
 - g. Roads and Grounds Services
 - h. Pest Control
 - i. Model Shop and Room
 - j. Special Events

5.1 Food Services

Scope:

The Contractor shall provide and deliver food services at MAF. The Contractor shall prepare and serve a variety of meals that are healthy, reasonably priced and of interest to a majority of residents at MAF so as to ensure a strong customer base.

Work Requirements:

The Contractor shall:

1. Provide food services in the Building 102 cafeteria, Building 351 cafeteria and one food truck serving lunch. The daily route for the food truck will be coordinated with the COTR.

2. Serve two meals per day, 5 days per week, and 52 weeks per year. Service may be reduced or eliminated on a case-by-case basis if coordinated with user(s)/tenant(s) based on their holiday schedules and communicated in advance. At a minimum, breakfast shall be served between the hours of 6:00 AM and 9:00 AM, and lunch shall be served between the hours of 11:00 AM and 1:00 PM in both cafeterias.
3. Provide a salad bar and sandwich line alternative in both cafeterias that include items that are health conscious, yet customer driven.
4. Develop menus on a cycle of no less than 6 weeks that reflect healthy, nutritionally balanced meals. Priced menus shall be prominently posted and distributed to all mail rooms for distribution to offices. Menus will be posted both electronically and hardcopy on Thursday prior to the Monday of a new week.
5. Utilize Government provided food service equipment as portrayed in Attachment J-7, Government Furnished Property and non-consumable materials (e.g. utensils) to operate the cafeterias. The Contractor shall be responsible for provision of consumable materials.
6. Perform quality control that adequately inspects, evaluates and complies with all applicable laws of the Louisiana State Board of Health, applicable sanitation requirements of NPR 1800.1, *NASA Occupational Health Program Procedures* and MPR 8715.1, *Marshall Safety, Health, and Environmental (SHE) Program*.
7. Provide food service sanitation training to all personnel (including management) who are involved with the handling and/or serving of food products.
8. Provide vending services at locations approved by the COTR. Net proceeds from vending services shall be offset against the costs for other Food Services.

5.2 Mail Services

Scope:

The Contractor shall provide mail service to the user(s)/tenant(s) at MAF. Operational hours for mail service shall be Monday through Friday, 7:30 AM to 4:00 PM. There may be exceptions that require mail services to be extended beyond the core duty hours. Mail services are largely customer oriented and will rely on the Contractor's ability to establish an efficient, courteous and quality customer service approach for pickup and delivery of mail.

The mailroom is currently located in Building 350 shall be the focal point (mailroom) for the receipt or dispatch of mail, internal distribution to customer office locations or entry into the U.S. Postal Services (USPS) mail system.

Work Requirements:

The Contractor shall:

1. Provide a full service mail operation that complies with the United States Postal Service (USPS) requirements for product offerings, mail meter use and management, mail sorting and bagging requirements and is in compliance with latest revisions of :
 - a. USPS Domestic Mail Manual (DMM)
 - b. USPS International Mail Manual (IMM)
 - c. USPS Rates, Fees and Calculators
 - d. USPS Postal Zone Charts
 - e. U.S. Publication 28, *Postal Addressing Standards*
 - f. NASA Mail Management Guide (NMMG)
 - g. NASA NPD 1490.1, *NASA Printing, Duplicating, and Copying Management*
2. Provide for expeditious handling and accurate delivery of external and internal mail (including express mail and small packages) in a cost effective manner. Processing steps shall be kept to a minimum; sound principles of work flow shall be applied; and equipment utilized should enhance the work flow.
3. Provide mail stop to mail stop courier service, maintenance of mailing and standard distribution lists, distribution of periodic documents, and a pickup location in the mailroom for user(s)/tenant(s).
4. Restrict access to mailroom, mail and meters to authorized mailroom personnel who are to maintain control of the mailroom at all times. Meter security shall be handled in accordance with NMMG.
5. Follow procedures established by USPS and NASA for handling any suspicious packages or mail in accordance with MPR 1551.1, *Mail Management and Distribution*. Scan all mail received from the USPS through X-ray equipment to identify any suspicious package contents.
6. Furnish Personal Protective Equipment (e.g. nitrile gloves, facemasks, aprons) to mailroom personnel as safety requirements dictate.

5.3 Custodial Services

NOTE: Effort in this PWS section consists of both Mission Services and IDIQ. Custodial Services for PWS scope authorized on an IDIQ basis will be authorized and costed as a function of the IDIQ task order.

Scope:

The Contractor shall provide custodial services to the user(s)/tenant(s) at MAF. Custodial services are not to be provided to the buildings or portions of buildings that house US Department of Agriculture. The Contractor shall perform custodial services using the standard cleaning practices defined in Attachment J-12, Technical Exhibits and in accordance with Attachment J-1-B, Performance Timetables.

Work Requirements:

The Contractor shall:

1. Provide personnel trained in the custodial tasks to be performed and the equipment to be utilized. All custodial tasks shall be accomplished in a safe and professional manner.
2. Provide personnel that are trained to be courteous, polite and that exhibit professional demeanor in the performance of custodial tasks.
3. Return any item that must be moved to perform a custodial task to its original place and position.
4. Emphasis shall be placed upon the protection of NASA property when performing custodial tasks.
5. Provide notice to the Work Control Center (WCC) of items requiring repairs no later than the work day following discovery, unless the item is deemed to be a critical, priority or emergency item in which case notification to the WCC will be immediately following discovery.
6. Clean and store all equipment used upon completion of daily custodial activities and prior to the conclusion of personnel work shift.
7. Perform all work at times and in a manner which least interferes with normal work function of user(s)/tenant(s).
8. Submit the initial work schedule for routine tasks to the COTR for approval within thirty (30) days after contract award. Once approved, all work will be performed in strict compliance with the schedule to facilitate Government's inspection of work.

5.4 Recycling Services

Scope:

The Contractor shall implement and operate a Recycling Program which includes but is not limited to: white paper, plastic and glass bottles, aluminum cans, telephone books and cardboard. The Contractor shall provide a comprehensive report on all affirmative procurement items purchased in accordance with DRD 1234LS-003, *Annual Affirmative Procurement Report*. The Contractor shall supply properly sized containers at numerous collection points throughout MAF. The contractor shall empty all recyclable materials containers on a weekly basis. The Contractor shall supply all proprietary material containers and coordinate pickup with both the user(s)/tenant(s) and Government provided security contractor. The Contractor shall shred all data in the presence of both user(s)/tenant(s), and Government provided security contractor.

5.5 Multimedia Services

Scope:

The Contractor shall provide media and publication services in support of NASA and this PWS including but not limited to editing, proofing, design and layout, desktop publishing, document scanning and production/coordination from initial concept to hard copy and/or electronic distribution.

5.5.1 Graphics Development

Scope:

The Contractor shall provide the capability to develop graphics in a variety of physical and electronic media adhering to all applicable NASA/MSFC procedural and regulatory guidance including 508 compliance as listed in Section J-11, *Compliance Documents*.

Work Requirements:

The Contractor shall:

1. Provide graphics illustrations (e.g., art renderings, cartooning, photo-retouching, technical drawings, etc.).
2. Provide presentation aides.
3. Provide displays and posters.
4. Provide graphics charts, graphs and diagrams.
5. Provide graphics support elements such as labels, lettering, name plates, laminating and scanning of graphic elements.
6. Provide desktop publishing services including scanning, composition and text processing.
7. Provide document file conversions to enable electronic publishing.

5.5.2 Content Development and Assembly:

Scope:

The Contractor shall provide the capability to create content in a variety of physical and electronic media.

Work Requirements:

The Contractor shall:

1. Provide still and motion picture photography and video graphics for documentation of MAF ceremonies, programs, special events, and other requirements.
2. Create graphics, videos, publications and web content including text, tables, charts, illustrations, still and motion images, photo research and caption, technical or creative writing, and animation adhering to all applicable NASA/MSFC procedural and regulatory guidance including 508 compliance.
3. Provide design, layout, editing and proofing capabilities for graphics/publications prepared for internal distribution and adhere to all applicable NASA/MSFC procedural and regulatory guidance including 508 compliance.
4. Provide editing, proofing and preparation of still and motion images for internal distribution.
5. Provide programming of video, audio, text animation and graphic elements for interactive multimedia products and internal distribution.

5.5.3 Content Distribution

Scope:

The Contractor shall provide various physical and electronic means of distributing audio-visual content.

Work Requirements:

The Contractor shall:

1. Provide videotape, CD-ROM, DVD, and other optical and magnetic media duplication of video, still and motion images, and interactive content.
2. Provide photographic prints and electronic files in a variety of sizes, resolutions, formats, and quantities. Any products produced such as ceremonies,

movement of flight hardware, dignitaries will be provided to the appropriate MSFC libraries.

3. Provide distribution of audio/video content to user(s)/tenant(s) as requested.

5.6 Reproduction Services

Scope:

The Contractor shall provide reproduction services, including but not limited to: printing/duplicating, micro imaging, color copying, engineering drawing reproduction, multicolor digital printing, aperture card plotting, document scanning and CD-ROM mastering and commercial printing procurement. The Contractor shall provide activity reporting in accordance with DRD 1234LS-002, *Reproduction and Printing Management Reports*.

Work Requirements:

The Contractor shall:

1. Manage and operate a multi-shift copy center in Building 103.
2. Determine the most economical, efficient reproduction method or process and source that meet the requester's requirement.
3. Conform all duplicating, reproduction and binding activities to Government Printing and Binding Regulations established by the U.S. Congress Joint Committee on Printing and applicable NASA and MSFC regulations.
4. Provide commercial printing procurement services in accordance with MPR 1490.1, *Printing, Reproduction, and Self-Service Copying Service* of Government Printing Office services. No commercial printing shall be procured from other sources than the GPO unless a waiver is issued from the MSFC Printing Officer.
5. Maintain a current inventory of all reproduction, duplicating and copying equipment per Attachment J-7.

5.7 Roads and Grounds Service

Scope:

The Contractor shall maintain all MAF exterior roads and grounds. The Contractor shall perform road and grounds services using the Roads and Grounds Services defined in Attachment J-12, Technical Exhibits and in accordance with Attachment J-1-B, Performance Timetables.

The Contractor shall provide 4 appearance levels of ground maintenance, each with a different performance standard:

- Area 1 – High visibility that shall be maintained to assure a manicured visually pleasing appearance.
- Area 2 – Medium/High visibility that shall be maintained to assure a well kept visually pleasing appearance.
- Area 3 – Moderate visibility that shall be maintained to assure a modestly maintained visual appearance that may degrade to an unkempt appearance.
- Area 4 – Low visibility that shall be maintained to avoid an unkempt appearance.

Work Requirements:

The Contractor shall:

1. Perform the following roads and grounds maintenance activities in accordance with the activity descriptions contained in Attachment J-12, Technical Exhibits:
 - a. Mowing
 - b. Line trimming and edging
 - c. Planting bed and tree rings
 - d. Trimming shrubbery and trees
 - e. Lawn fertilizing and weed control
 - f. Lawn sodding and seeding
 - g. Cleaning parking lots and roadways
 - h. Repairing cold patch potholes
 - i. Site cleanup, trash removal and policing areas
 - j. Tobacco debris removal

5.8 Pest Control

Scope:

The Contractor shall perform periodic inspections of all MAF facilities and grounds for evidence of rodents, pest and/or insect infestation and identification of problem areas. The Contractor shall prepare and apply insecticides, rodenticides, poisons, chemicals, oils, dust sprays and mixtures; dispose of reptiles; trap rodents and fur bearing animals; and apply bird repellents to buildings and structures in addition to other control measures.

Work Requirements:

The Contractor shall:

1. Assure all pest control chemical handling and disposal complies with NASA environmental management policies and requirements.

2. Maintain all pest control application records and make available for Government inspection upon request.
3. Provide a Pest Control Plan that in accordance with DRD 1234LS-005, *Integrated Pest Management Plan, Report and Work Schedules*. The plan should address pest control issues that cause damage to property, contribute to the discomfort of or is detrimental to the health of MAF personnel.

5.9 Model Shop and Room

Scope:

The Contractor shall manage, operate and maintain the MAF model shop and room.

Work Requirements:

1. Ensure the MAF Model room continuously reflects the current configuration of the site, buildings and equipment.
2. Develop and fabricate new models for MAF user(s)/tenant(s). Support NASA requirements in developing models on an as needed basis.

5.10 Special Events

NOTE: Effort in this PWS section is not part of Mission Services, and if determined appropriate, will be authorized by an IDIQ task.

Scope:

The Contractor shall coordinate special events in support of the MAF MI&O office (e.g., blood drives, United Way campaign, general assemblies, award presentations, project media events.)

Work Requirements:

The Contractor shall:

1. Provide special event planning and coordination.
2. Develop, define and coordinate facility requirements.
3. Provide a written plan delineating the support requirements for each special event.
4. Submit any CMMS Work order requests for efforts needed to accomplish the special event.

5. Make appropriate site occupants aware of the event.
6. Ensure the event area is returned to its original configuration upon event completion.

6.0 Site Operations

Scope:

The Contractor shall operate MAF in a safe and efficient manner.

Work Requirements:

The Contractor shall:

1. Perform standard logistics operations functions to include:
 - a. Operations Requirements
 - b. Port and Harbor Operations
 - c. Power Plant Operations
 - d. Industrial Waste Water Treatment
 - e. Energy Management Control System Operations
 - f. Other Operations Activities

6.1 Operations Requirements

Scope:

The Contractor shall operate MAF in accordance with the below requirements.

Work Requirements:

The Contractor shall:

1. Make available all systems for continuous operation.
2. Initiate corrective action in a timely manner.
3. Use CMMS to document corrective action taken.
4. Operate all systems in accordance with operational procedures and Original Equipment Manufacturer (OEM) recommendations.
5. Perform all electrical power systems switching in accordance with utility system procedures.
6. Provide operational support for all MAF maintenance, repair, inspection, and testing.

7. Perform operational checkout upon successful conclusion of CM.
8. Perform fuel offloading and transfers in accordance with DRD 1234EE-015, Spill Prevention, Control and Countermeasure (SPCC) Plan.
9. Provide operational procedures in accordance with DRD 1234OM-005, *Operational Procedures*.

6.2 Port and Harbor Operations

NOTE: The Contractor will receive authorization to provide barge support (e.g. cleaning, maintenance, dry docking, preparation for shipment, tug services, etc.) on an IDIQ basis. All other Port and Harbor Operations will be considered Mission Services.

Scope:

The Contractor shall provide for the safe and efficient operation of the MAF port and harbor.

Work Requirements:

The Contractor shall:

1. Provide a harbor master to manage the MAF harbor operations and NASA maritime operations.
2. Operate port and harbor in accordance with applicable maritime regulations.
3. Operate and maintain NASA barges stationed at MAF in accordance with timeline in J-1-C, Manufacturing Support Requirements and Timeline. Provide maintenance and repair services (excluding those activities which require dry docking) for assigned vessels, dock facilities and other NASA owned/contracted vessels while located at the MAF dock.
4. Provide support as necessary to the Government service provider responsible for security of the port and harbor.
5. Perform the following:
 - a. Maintain all necessary records and logs.
 - b. Load, unload, move and/or store cargo not under the purview of harbor user(s)/tenant(s).
 - c. Remove all unnecessary equipment and/or material from dockside in a timely manner.
 - d. Secure all vessels in port in accordance with the MAF EMP.

- e. Maintain, service and operate a Government furnished utility boat to provide surveillance of all floating equipment in port and all adjoining port facilities and to take soundings in Michoud Slip as required.
- f. Maintain docks, pilings, mooring dolphins, and buoys.
- g. Coordinate and facilitate user(s)/tenant(s) requirements for use of the MAF port, harbor and dock.

6.3 Power Plant Operations

Scope:

The Contractor shall operate, maintain, inspect and repair all steam boiler and chiller plant systems in accordance with federal, state and local regulations.

Work Requirements:

The Contractor shall:

1. Operate boilers at a minimum 80% efficiency and chillers at a minimum 70% load efficiency.
2. Perform boiler operations to include normal boiler operation equipment (e.g., fuel supply, condensate pump, feed water pump).
3. Inspect boiler operations periodically to ensure operational availability and safety oversight.
4. Prevent accumulation of boiler condensate, chiller deposits and corrosion through chemical treatment of boiler/chiller water.
5. Analyze boiler feed water, chilled water and cooling water, determine chemicals and components per formula and inject into the systems.
6. Provide operators that possess a current city of New Orleans First or Second Class Operating Engineers License with Boilers and Air Conditioning.
7. Provide roving operators on an as-needed basis for buildings that have equipment rooms, chilled water pumps, storm drainage, fan houses and other related processes.
8. Provide an independent inspector to perform annual boiler inspections in accordance with DRD 1234OM-004, *Annual Boiler Certification Plan*.
9. Ensure that power boilers without a valid annual inspection certificate cannot be operated.

10. Notify the Government if unsafe conditions are found following repair of a power boiler or after any authorized modification to boilers, control equipment or associated components.
11. Continuously update CMMS to reflect any and all equipment failures and corrective action taken.
12. Operate MAF storm drainage pumps.
13. Respond to emergency situations with correct repair to minimize impact to user(s)/tenant(s) requirements.

6.4 Industrial Waste Water Treatment

Scope:

The Contractor shall operate and maintain the Industrial Waste Water Treatment Facility (IWTF) in accordance with the provisions of this PWS.

Work Requirements:

The Contractor shall:

1. Operate and maintain all IWTF support equipment.
2. Maintain and update IWTF operating guidelines.
3. Maintain a current State of Louisiana waste water treatment license and comply with all Louisiana laws governing treatment of waste water.
4. Operate all demineralized (DM) water systems to produce sufficient quantity and quality to meet user(s)/tenant(s) needs.
5. Maintain primary storage vessels for DM water.

6.5 Energy Management Control System Operations

Scope:

The Contractor shall operate, maintain and manage the Energy Management Control System (EMCS), to include maintaining special environments for user(s)/tenant(s) dedicated production areas in accordance with DRD 1234OM-006, *Energy Management Control System Report*.

Work Requirements:

The Contractor shall:

1. Monitor and review all EMCS connected equipment and comfort parameters on a continuous basis.
2. Initiate trouble calls for Corrective Maintenance.
3. Ensure system integrity via daily backup of critical system data to include an archive containing one month of backups.
4. Ensure that latest firmware revisions are installed in EMCS connected hardware.
5. Validate the accuracy of all utility meters.
6. Provide all programming database backup of utility meters.
7. Control all EMCS connected devices as efficiently as allowable and in accordance with DRD 1234OM-006, Energy Management Control System Report . Emphasis shall be placed on utility savings during non-core hours.
8. Keep current on NASA and federal energy and water conservation policies.
9. Provide building energy and water utilization cost data, alarm data, utility outages, energy and water consumption, historical data, trends, operating demands, potential deficiencies.
10. Make temperature control program changes due to changes in building occupancy.
11. Establish with concurrence from NASA and implement a load-shedding plan.
12. Optimize/fine tune start/stop programs, equipment schedules, and temperature reset schemes.
13. Investigate new energy and water conservation measures and determine implementation procedures and control functions required.
14. Read and log all MAF energy and water consumption meters during the first five (5) days of each month.
15. Provide an energy and water conservation quarterly report in accordance with DRD 1234OM-013, *Energy and Water Conservation Reports*. All data shall be accurate and current for the quarter being reported.

16. Provide an annual energy and water conservation report and progress assessment. All data shall be accurate and current for the year being reported.
17. Provide monthly utility bill review and verification. The Contractor shall review all charges for utilities used and verify consumption as compared to past history. This verification report shall be provided to the Government within five (5) calendar days of utility bill receipt.
18. Support energy and water conservation meetings and projects.
19. Communicate with the designated utility provider on energy and water matters.
20. Provide an end of fiscal year building by building utilities cost and consumption report in accordance with DRD 1234OM-014, *Utilities Cost and Consumption Report*.
21. Provide planning support to the MAF Energy Conservation and Management Committee. This shall include providing support in the development of energy conservation ideas through a site-wide council involving all user(s)/tenant(s). Provide website support for energy inputs into the WCC and implementation of such items. The Contractor shall review engineering specifications for compliance with energy conservation practices. The Contractor shall review MAF energy practices and make short-term and long-term recommendations for needed energy conservation and management improvements.
22. Minimize personnel discomfort in administrative areas when HVAC/R conditions are impacted by events outside of the Contractor's control.
23. Operations shall include, but not be limited to, calibrations, resetting and restarting tripped equipment, regulator or thermostat adjustments, filter replacements and isolating and returning equipment to service as a result of planned or unplanned outages.
24. Respond to emergency situations with correct repair so scheduled wash/test programs will not be delayed.
25. Conform work practices to meet federal and state Codes, EPA standards, OSHA regulations, and ASHRAE requirements.
26. Maintain all critical and comfort environments within assigned set points.
27. Dispatch operators when zone environmental parameters are outside assigned guidelines per Energy Management System readings.

6.6 Other Operations Activities

Scope:

The Contractor shall provide other operations activities as defined below.

Work Requirements:

The Contractor shall operate or perform:

1. Special electrical and electronic controlled power distribution systems throughout MAF.
2. Fixed equipment such as bridge and derrick cranes, hoists, and air bearings and mobile equipment such as truck-mounted cranes, bull dozers, and lift trucks.
3. Loading, securing, off loading, hauling of heavy and oversized cargo.
4. All non-mobile equipment in compliance with appropriate ANSI and OSHA proof load testing requirements.
5. Rigging cranes and loads, fabricate wire rope slings, chokers, and rigging, load test lifting devices, and secure cargo on common and special conveyances.
6. Fabrication of rigging equipment and load testing lifting devices to meet requirements.

7.0 Logistics Operations Services

Scope:

The Contractor shall provide responsive logistics support and services with emphasis on customer service, streamlining operations to avoid duplication, achieving efficiencies through process improvements or the insertion of technology, and reducing costs.

Work Requirements:

The Contractor shall:

1. Perform standard logistics operations functions to include:
 - a. Property Management
 - b. Supply and Material Management
 - c. Redistribution, Utilization and Disposal
 - d. Receiving and Inspection
 - e. Packaging and Shipping

- f. Vehicle Management Operations
- g. Moving and Hauling Services

7.1 Property Management

Scope:

The Contractor shall manage the Government Furnished FSEU provided to perform this PWS.

Work Requirements:

The Contractor shall:

1. Prepare and submit a Government Property Management Plan in accordance with DRD 1234LS-001.
2. Utilize the NASA Plant, Property and Equipment (PP&E) system database for the purpose of accounting for and tracking of all Government property from receipt/loan to turn-in for disposal.
3. Utilize bar code scanners, NASA Equipment Control Number (ECN) tags, and decals required for property control. Continuously update PP&E system and provide full access to the Government.
4. Monitor Government Furnished Property (GFP) within PP&E database for low usage. Provide rationale for retention of GFP to the NASA Supply and Equipment Management Officer (SEMO) or initiate disposal action and discontinue asset records as appropriate.
5. Input property accountability data into the NASA Logistics Information Management System (LIMS) to support property reporting requirements.
6. Use PP&E to conduct an annual wall-to-wall inventory to ensure tagged property has been physically located and scanned to determine the completeness and accuracy of the PP&E data, in accordance with NPR 4200.1, *NASA Equipment Management Procedural Requirements*.
7. Perform Real Property inventories once every three years for all NASA facilities at MAF, in accordance with NPR 8800.15, *Real Estate Management Program Implementation Manual*.
8. Tag real property (collateral) equipment and input records into the CMMS.

7.2 Supply and Material Management

NOTE: *When the Contractor is providing support in a dedicated production area, the activities shall be authorized and costed on an IDIQ basis. All other Supply and Material Management activities will be considered Mission Services.*

Scope:

The Contractor shall provide a material management system compatible with or within the Contractor's MIS for the tracking, processing, management and issuing of spares, parts, supplies, materials and shipping containers which maximizes the use of technology to improve efficiency and data integrity.

Work Requirements:

The Contractor shall:

1. Perform supply and material management in accordance with NPR 4100.1, *NASA Materials Inventory Management Manual*.
2. Continuously update the material management system and provide full access (read only) to the Government.
3. Ensure adequate levels of operating materials and supplies in support of contract requirements. Maintain and replenish bench stocks in accordance with established minimum and maximum levels.
4. Manage shelf life items to ensure compliance with out-of-date usage requirements. Operating materials and supplies with a shelf life designation shall be tracked, maintained and updated in the Contractor's material management system.
5. Perform cataloging functions to ensure the identification and standardization of stock.
6. Assign and track a unique local stock number for Stock items that have no National Stock Number (NSN).
7. Manage, plan, schedule, assemble and deliver material requirements for work order kitting per the Contractor's integrated work control schedules.
8. Order and maintain adequate levels of propane, diesel and gasoline fuel for mobile/portable equipment and fixed tanks. Deliver fuel to site locations on user(s)/tenant(s) scheduled intervals.

9. Provide delivery service of materials and equipment to user(s)/tenant(s) to include transportation to required location and tracking through acceptance by the user(s)/tenant(s) at time of delivery.
10. Perform physical inventories and documentation to maintain accuracy of stock records. Ensure materials management system balances match the physical inventory counts. When discrepancies are identified, take corrective within 3 working days.
11. Provide all small tools, supplies, and consumable materials for accomplishing work under this PWS. Examples would include, but are not limited to, wrenches, work gloves, face shields, dusk mask, tyvek suits.
12. Maintain stock levels on all small tools and commodities at an optimum level to support MAF requirements.
13. Perform maintenance of small tools as required to ensure availability.
14. Operate and manage small tool and commodities cribs. Perform issue operations in support of MAF customers and projects.
15. Coordinate with customer and projects to confirm new requirements.

7.3 Redistribution, Utilization and Disposal

Scope:

The Contractor shall provide property management for the redistribution, utilization and disposal of Government property required to perform this PWS.

Work Requirements:

The Contractor shall:

1. Perform Redistribution, Utilization and Disposal functions in accordance with NPR 4300.1, *NASA Personal Property Disposal Procedural Requirements*; NPR 4310.1, *Identification and Disposition of NASA Artifacts*; 41 CFR 101, *Federal Property Management Regulation*; and 41 CFR 102, *Federal Management Regulation*.
2. Utilize the NASA PP&E/DSPL for the purpose of accounting for and tracking all disposal activities from initial receipt to final disposition. Continuously update PP&E/DSPL.
3. Screen and excess hazardous materials in compliance with all applicable Federal, State and Local laws, regulations, policies, procedures and directives. Transfer, donate or sell and remove from the in-place location.

4. Perform activities necessary to support Government sales contracts for scrap material pick ups.
5. Process General Services Administration (GSA) or NASA sales, and exchange sales for reutilization of property. Inventory all property scheduled for sale and provides resolution to all discrepancies prior to lotting. Reconcile all sales listings with the inventory to ensure all items are captured for the sale in PP&E/DSPL. Provide sales scheduling, advertising, pictures, staging, security, customer assistance, auctioneer, petty cash, loading out, financial reconciliation with MSFC Officer of Chief Financial Officer and support the Sales Contracting Officer. Capture and provide records of all costs associated with preparations of sales to the NASA Property Disposal Officer (PDO).

7.4 Receiving and Inspection

Scope:

The Contractor shall provide a receiving and inspection function at MAF.

Work Requirements:

The Contractor shall:

1. Receive all shipments addressed to MAF with the exception of those addressed to ET, USCG, and USDA.
2. Perform count and condition assessments of shipments for all NASA Projects' (except ET) or user(s)/tenant(s) (except USCG, and USDA). The Contractor is not responsible for resolving any discrepancies with ET Project, USCG or USDA shipments.
3. Deliver all items (except for Program Critical Hardware) to the appropriate MAF storage area. The NASA Project or user(s)/tenant(s) will be responsible for inspection and tracking of their item/hardware at their assigned MAF storage location. Each NASA Project or MAF user(s)/tenant(s) will also be responsible for delivery of their material, parts, equipment and Program Critical Hardware from the MAF storage area to site locations.
4. Notify the user(s)/tenant(s) to pick up Program Critical Hardware from the Building 220 receiving area.
5. Perform receiving operations for contract (MSFOC) items include the processing and inspection of inbound Government shipments (Except for USPS mail and medical supplies) and subsequent delivery to customers, notification for customer to pick-up items or movement to warehouse locations on-site. Inspection shall include: annotating and resolving any visible Overages,

Shortages, or Damages (OS&D); ensuring the number of pieces and information reflected on the delivery document matches the number actually received; processing all transportation documentation for routing received material to user(s)/tenant(s) or to inspection; and ensuring proper and expeditious disposition of received material.

- a. Verify count and condition of all goods received and process all visible shortages/damage findings and for inbound shipments, maintain all supporting Commercial Bill of Lading (CBL) documentation in accordance with, MWI 6220.1, *Lost or Damaged Freight*.
- b. Research inbound packages with incorrect or incomplete addresses to determine the customer.
- c. Follow procedures established by USPS and MPR 1551.1, Mail Management and Distribution for handling any suspicious packages or mail.
- d. Scan all received goods with x-ray equipment to identify any suspicious contents.
- e. Reconcile incoming material against the applicable documentation. All freight not identifiable to a document will be considered "incomplete" freight.
- f. Ensure that no medical supplies are received by the MSFOC shipping and receiving department. All medical items/supplies shall be shipped directly to Building 320 - Medical Clinic. The receipt of medical items or drugs shall be rigidly controlled.
- g. Physically segregate chemicals and caustic substances from other stock during the inspection process, additionally ensuring they are physically segregated for compatibility purposes.
- h. Follow proper procedures needed for receipt/storage of hazardous materials and ensure required Material Safety Data Sheet (MSDS) accompany the material. All hazardous materials shall be approved by Safety prior to receipt at MAF.
- i. Verify upon arrival, radioactive material with accompanying documentation. Store the material in an approved storage container designated for radioactive material, where it shall remain until pick up. Contact the Radiation Safety Officer (RSO) to notify the consignee to make arrangements for pick up.
- j. Verify upon arrival, explosive material with accompanying documentation. Store the material in an approved storage container designated for explosive material, where it shall remain until pick up. Contact the Explosive Officer to notify the consignee to make arrangements for pick up.
- k. Provide delivery service of materials and equipment to user(s)/tenant(s) to include transportation to required location and tracking through the acceptance by user at time of delivery (Except for Program Critical Hardware).
- l. Receive new (or returned) furniture and manage the satellite warehouse to ensure furniture is available for issue and is stored safely.

- m. Receive, issue and inventory gas cylinders including propane, acetylene, etc. Segregate empty cylinders and coordinate transportation. Segregate unserviceable cylinders from serviceable cylinders to ensure only serviceable cylinders are issued. Return vendor owned cylinders when no longer required.

7.5 Packaging and Shipping Operations

Scope:

The Contractor shall provide a packaging and shipping function at MAF.

Work Requirements:

The Contractor shall:

1. Perform packing and shipping; and accounting and shipment tracking services to ensure that all freight is processed and shipped to support NASA Projects and other user(s)/tenant(s).
2. Account and track all MAF shipments from receipt of items being shipped in accordance with NPR 6000.1, *Requirements for Packaging, Handling and Transportation for Aeronautical and Space Systems, Equipment, and Associated Components*, and NPR 6200.1, *NASA Transportation and General Traffic Management*.
3. Ensure packing and shipping operations for routine, priority, hazardous and critical types of shipments are accomplished safely, accurately and on time.
4. Process routine shipments within 3 work days of receipt of item or documentation. The Contractor shall pick up routine shipments from user(s)/tenant(s) locations upon request.
5. Process all priority shipments to meet the identified delivery date on the shipping documents, if the delivery date identified is within 3 work days of date shipping request is received. The Contractor shall pick up priority shipments from user(s)/tenant(s) locations upon request.
6. Process all hazardous materials shipments as a priority shipment. The Contractor shall pick up all hazardous materials shipments from user(s)/tenant(s) locations. The Contractor shall process hazardous material shipments per the shipping document and in compliance with the *Hazardous Materials Regulations* or Title 49 CFR; as applicable.
7. Process all critical shipments as a priority shipment. The Contractor shall pick up all critical shipments from user(s)/tenant(s) locations and process per the shipping document to ensure effective adherence to special handling and

shipping constraints. A critical shipment shall always be transported using an air-ride equipped vehicle.

8. Inspect all equipment, materials, and items to ensure that all NASA Control Numbers, part numbers, serial numbers, and other identification numbers correspond with the shipping document.
9. Select appropriate packaging for hardware, software, materials, and equipment to ensure safe delivery by all modes of transportation.
10. Maintain documentation for all shipments and activity reporting in accordance with DRD 1234MA-008, *Contract Performance Metrics and Workload Indicator Report*.
11. Verify the quantity and cost associated with each freight bill received at MAF.
12. Report cost associated with packaging and shipping in accordance with DRD 1234LS-008, *Packaging and Shipping Cost Report*.

7.6 Vehicle Management Operations

Scope:

The Contractor shall operate and maintain all vehicles identified in Attachment J - 7.

Work Requirements:

The Contractor shall:

1. Provide driver services and vehicle operations using Government-provided vehicles to ensure vehicle fleet management operations are provided safely, timely, effectively, and efficiently in accordance with NPR 6200.1, *Transportation and General Traffic Management*, NPD 6000.1, *Transportation Management*, and Executive Order 13423, *Strengthening Federal, Environmental, Energy and Transportation Management*.
2. Utilize the MAF on-site service and fueling stations for fueling general purpose vehicles and government furnished vehicles.
3. Maintain all general purpose vehicles in support of contract requirements. Provide justification of vehicle utilization in accordance with DRD 1234LS-007, *Vehicle Validation Report*.
4. Ensure that all drivers have proper licenses, with the applicable endorsements. Provide driver services on an as needed basis to drive buses, sedans, vans, building 103 trams or any vehicles appropriate to the required service.

5. Input the required data into the Federal Automotive Statistical Tool (FAST) for any contractor-acquired and NASA-owned vehicles annually, as scheduled by the NASA Fleet Manager.
6. Develop and maintain a vehicle maintenance program to comply with the vehicle manufacturer's normal service schedule for all NASA-owned vehicles and take full advantage of manufacturer warranty repairs when applicable. Notify GSA vehicle users that routine maintenance is due on vehicles assigned to them.
7. Record all vehicle use, maintenance, and fuel data in accordance with DRD 1234LS-006, *Cost and Motor Vehicle Data Report*.
8. Secure and maintain an extra set of ignition/entry keys for all Government vehicles to ensure backup keys are available if assigned keys are lost.
9. Manage GSA vehicle credit cards to ensure a valid credit card is assigned to all vehicles. GSA vehicle used off-site shall be fueled and maintained per GSA guidelines.
10. Notify the COTR and instruct the vehicle user to contact the GSA Accident Management Center (AMC), their supervisor, and official law enforcement authorities immediately after an accident to ensure effective reporting of all vehicle accidents.
11. Provide passenger shuttle service for MAF. The passenger shuttle service schedule, route, and times are determined by the COTR or his/her designee.

7.7 Moving and Hauling Services

NOTE: When a user(s)/tenant(s) has a requirement for moving or hauling a non-typical item (i.e. flight hardware, special tooling, special test equipment) located within or from/to their dedicated manufacturing area, office space, green space or warehouse space, the activity will be authorized and costed on an IDIQ basis. All other Moving and Hauling Services will be considered Mission Services.

Scope:

The Contractor shall provide moving and hauling services at MAF.

Work Requirements:

The Contractor shall:

1. Provide routine, non-core, priority, and quick dispatch moving and hauling services to ensure items are delivered to the correct location on the scheduled date.

2. Complete routine moving and hauling requests, having an identified need date of 2 work days or greater and are for bulk and/or non-bulk items, on the date identified by the user(s)/tenant(s) or within 5 work days if no date is identified; to ensure items are transported safely and timely from one location to another.
3. Complete COTR approved non-core moving and hauling requests on the scheduled date to ensure items are transported safely and timely from one location to another.
4. Complete priority moving and hauling requests for pick up and delivery of items within 24 hours to ensure items are transported safely and timely from one location to another. The majority of priority moving and hauling services are for non-bulk items.
5. Complete quick dispatch requests for pick up and delivery of items within 2 hours to ensure items are transported safely and timely from one location to another. Quick dispatch services are for non-bulk items.
6. Ensure proper control, protection, preservation, and disposition of move assets.
7. Ensure customer move activity is documented in CMMS

7.8 Explosive Operations

NOTE: Effort in this PWS section is not part of Mission Services, and if determined appropriate, will be authorized by an IDIQ task.

Scope:

The Contractor shall support the framework by which NASA Project user(s)/tenant(s) manage explosives, propellants and pressurants.

Work Requirements:

The Contractor shall:

1. Provide efficient, effective and obligatory services associated with receipt, storage, handling, delivery, and disposal of explosives, propellants, and pyrotechnics at MAF.
2. Comply with NPR 1441.1, *NASA Records and Retention Schedules*, MWI 5100.1, *Initiating Procurement Requisitions*, and MWI 8715.10, *Explosives, Propellant and Pyrotechnics Program*.
3. Consolidate estimates from all user(s)/tenant(s) and generate a total estimate of requirements for MAF.

4. Forecast, order and receive GFP pressurants and propellants in accordance with DRD 1234SE-001, *GFP Pressurants and Propellants Request and Forecast*.
5. Conduct long-range planning to ensure the availability of propellants and pressurants for all current and other NASA projects.
6. Receive and process any unforeseen requests for delivery from user(s)/tenant(s).
7. Off-load explosives at the consignee area.
8. Accompany explosive shipments to consignee area to process the close out receipt.
9. Store materials in an approved explosive container until delivered and stored at MAF in an approved area.

8.0 Sustaining Engineering

Scope:

The Contractor shall provide sustaining engineering that optimizes availability and costs for critical production facilities and infrastructure to meet both existing and changing mission needs. The Contractor is responsible for providing both professional and non-professional sustaining engineering. These engineering services include but not limited to facility planning, engineering support, and cost estimating.

8.1 Facility Planning

Scope:

The Contractor shall provide sustaining engineering resources to perform facility planning to include support to the A&E service provider who is responsible for performing all local and CoF facility construction design and inspection services at MAF. The Contractor shall verify the designs provided by conducting reviews with the A&E service provider and NASA at the 30/60/90% design milestones. The Contractor shall provide the A&E service provider with data (e.g. cost estimating, proposed cost, user(s)/tenant(s) requirements, etc.) when requested by the Government.

8.1.1 General Planning and Administration

Scope:

The Contractor shall provide facilities planning of site projects and requirements, funding requirements, CoF projects master scheduling, and resource planning. The planning will be utilized to support annual funding requests for CoF and Local Projects.

The Contractor shall perform project planning in accordance NPR 8820.E, NASA *Facilities Project Implementation Guide*.

Work Requirements:

The Contractor shall:

1. Develop and maintain a structured, risk-based, prioritization process for assessing project requirements.
2. Develop, prioritize, coordinate and integrate five year facility project plans. Submit these plans annually in accordance with DRD 1234SE-004, *CoF and Local Project 5 Year Plans*.
3. Coordinate project sequencing and cross-referencing of CoF and Local Projects to avoid duplication and rework.
4. Ensure projects requirements are aligned with the MAF Master Plan.
5. Define facility construction project requirements/scope in accordance with DRD 1234SE-002, *Facility Project Requirements Definition Document*.

8.1.2 Construction of Facilities

NOTE: Effort in this PWS section is not part of Mission Services, and if determined appropriate, will be authorized by an IDIQ task.

Scope:

The Contractor shall provide Sustaining Engineering resources to perform Construction of Facilities (CoF) planning.

Work Requirements:

The Contractor shall:

1. Develop and prepare CoF presentation data/briefing charts, supporting documentation (including NASA Form 1509, *Facility Project – Brief Project Document*).
2. Develop and prepare applicable data for MAF's demolition program.
3. Develop outfitting requirements.

4. Develop and maintain CoF projects master schedule. Obtain Government concurrence on schedule. Revisions to the CoF projects master schedule require approval of the Government.

8.1.3 Engineering Assessments

***NOTE:** Effort in this PWS section is not part of Mission Services, and if determined appropriate, will be authorized by an IDIQ task.*

Scope:

The Contractor shall ensure facilities and infrastructure continue to fulfill the design intent and are compatible with current operational use; performance capabilities are upgraded through product improvement; and, redesign activities result in a more safe, efficient or cost effective capability.

Work Requirements:

The Contractor shall:

1. Provide quick response (within 5-10 working days) engineering assessments/evaluations to include preliminary cost data and sketches, drawings, analyses, and narratives.
2. Perform timely field investigations and file research.
3. Coordinate requirements definition to include documented justification.
4. Perform trade analysis to validate requirements definition.
5. Prepare and provide engineering assessment data in the appropriate format.

8.1.4 Space Utilization

Scope:

The Contractor shall provide Sustaining Engineering resources to perform space utilization planning.

Work Requirements:

The Contractor shall:

1. Maintain and update Facilities Utilization Layout (FUL)/Floor Plans for all buildings/facilities at MAF to include identification of occupant/responsible

party. Floor plans shall address all types of space (office, manufacturing, warehouse, support facilities.)

2. Provide layout support for design and planning exercises. Analyze space utilization data in support of NASA space assignment studies in accordance with DRD 1234SE-003, MAF Square Footage Utilization Report.
3. Provide assistance in planning and coordination of major personnel relocations (to include long-range planning).
4. Develop layouts/schedules for facilities projects (CoF, major rehab, modification projects.)

8.1.5 Master Planning

NOTE: The Contractor will receive authorization to provide MAF site promotion and development support on an IDIQ basis. All other Master Planning will be considered Mission Services.

Scope:

The Contractor shall provide Sustaining Engineering resources to perform Master Planning for the MAF site.

Work Requirements:

The Contractor shall:

1. Provide site selection/evaluation field support for Government review and approval.
2. Prepare Master Plans that include sketches, drawings, maps, plans, analyses, reports, graphics, photographs, studies, and narratives.
3. Gather data / information required to update and maintain MAF's Facilities Master Plan.
4. Track, analyze, and process MAF site plans in compliance with the MAF Master Plan.
5. Provide support in the promotion and development of expansion opportunities for the growth of MAF to potentially include utilization of extended use lease authority.

8.2 Engineering Support Services

Scope:

The Contractor shall provide Sustaining Engineering resources for technical support activities.

8.2.1 Drawings and Software Configuration Control

Scope:

The Contractor shall provide Sustaining Engineering resources to perform configuration control of facility drawings and software as defined in Attachment J-12, Technical Exhibits.

Work Requirements:

The Contractor shall:

1. Analyze repairs, modifications, and new construction to determine the impacts to FSEU documentation.
2. Update FSEU drawings and documents for changes resulting from maintenance, repair or construction activities.
3. Maintain Configuration control of drawings/documents for all utilities and Manufacturing Support facilities and systems as identified in Attachment J-12, Technical Exhibits.
4. Update and maintain copies of software and FSEU drawings/documents specific to user(s)/tenant(s) configuration for shared manufacturing support facilities.
 - a. Configuration software and drawings/3D model for FSEU will be required for each user's specific needs.
 - b. Software will include PLC programs required to operate systems utilized by the multiple Users.

8.2.2 FSEU Drawing Maintenance and Distribution

Scope:

The Contractor shall provide Sustaining Engineering resources to perform FSEU drawing maintenance and distribution.

Work Requirements:

The Contractor shall:

1. Maintain electronic files of all drawings and any original hard copies. All hard copy originals and construction shop drawings shall be scanned and put into electronic database.
2. File/retrieve original hard copy drawings for pickup by authorized personnel. Maintain an accountability log for original drawings including the signature of the individual who issued drawings.
3. Provide for reproduction, distribution, tracking, and assembly of drawings for facilities work requests and projects (electronic and hard copy).
4. Search/study existing drawings and perform field investigations to verify as-built conditions and consolidate drawings as required.
5. Review requests for digging permits and related construction drawings for potential conflicts with existing underground/buried utility systems. Assist in field investigations to determine exact locations of known utilities and identifying unknown pipes, conduits, cables, etc. that are discovered unexpectedly in the field. Provide dig permit to the construction project manager and maintain log of issued permits.

8.3 Cost Estimating

Scope:

The Contractor shall provide Sustaining Engineering resources to perform cost estimating functions for facilities planning.

Work Requirements:

The Contractor shall:

1. Coordinate the review of budget estimates utilizing cost estimating input from the A&E service provider, for conceptual requirements and construction projects based upon requests from various user(s)/tenant(s).
2. Prepare construction bid estimates utilizing cost estimating input from the A&E service provider, for construction projects.
3. Provide support to the Government in evaluating cost estimates presented by the A&E service provider at each design review stage or when requirements change during the design.

4. Prepare cost estimates for change items and claims to on-going construction projects that are valued at less than \$100,000.
5. Evaluate change items and claims proposals submitted by construction contractors. A&E service provider input will be utilized for change items and claims valued at \$100,000 or greater.
6. Prepare various cost related studies for use in determining viability of future projects and comparisons of alternate concepts.
7. Utilize the Mean's database for estimating work.

8.3.1 Budgetary/Conceptual Cost Estimates

NOTE: Effort in this PWS section is not part of Mission Services, and if determined appropriate, will be authorized by an IDIQ task.

Scope:

The Contractor is generally given very little information concerning project specifics. Contractor will be required to gather what information may be needed through field inspection, drawing and/or document research, and personal contact with the user. The Contractor will also work with Government in developing technical requirements.

The Contractor in conjunction with the A&E service provider shall prepare budgetary/conceptual cost estimates based on requirements received from user(s)/tenant(s) for the purpose of planning future budget expenditures (including budget estimates prepared in support of construction projects).

The Contractor, utilizing information obtained from the A&E service provider shall provide support to the preparation of rough system designs and establishment of a set of assumptions on which to base an estimate of construction project cost. The Contractor shall document and maintain a file for each construction project to include at a minimum, user(s)/tenant(s) requirements, project assumptions, and A&E service provider designs.

8.3.2 Construction Cost Estimates

NOTE: Effort in this PWS section is not part of Mission Services, and if determined appropriate, will be authorized by an IDIQ task.

Scope:

The Contractor shall participate in reviewing construction cost estimates provided by the A&E service provider for consistency and completeness.

8.3.3 Design Estimate Validation

NOTE: Effort in this PWS section is not part of Mission Services, and if determined appropriate, will be authorized by an IDIQ task.

Scope:

At the various stages of design development, construction cost estimates will be provided by the A&E service provider based on the current level of project development (CoF design estimates required at the 30%, 60%, 90% and 100% design stages.) The Contractor shall participate in and provide support to the Government for reviews of A&E service provider project drawings, specifications, written reports and estimates. A function of this participation will be providing comments on unintended and/or incidental impacts to MAF Manufacturing and Facility Operations.

8.3.4 Change Items and Claims

NOTE: Effort in this PWS section is not part of Mission Services, and if determined appropriate, will be authorized by an IDIQ task.

Scope:

The Contractor shall provide a process to manage subcontract change items: During the course of any construction project, change items will be needed to enhance a facility's usefulness or correct a design error or omission. When a change item is issued to the construction contractor by the construction project manager, all related documents and drawings will be provided to the A&E service provider for use in preparing an estimate of the impact to planned construction cost. The A&E service provider cost estimate will be used for comparison and evaluation of the construction contractor's proposal. Construction cost estimates for change items are only required for changes over \$50,000 unless otherwise requested by the construction project manager or Government.

The Contractor shall provide a process to manage subcontract claims: When the construction contractor feels he is due compensation for work or conditions not covered by the original contract or a change item, he may submit a claim. Generally, claims are for small amounts and an estimate of the impact to planned construction cost is not required. As with change items, construction cost estimates for claims are only required for claims greater than \$50,000 unless otherwise requested by the construction project manager or Government.

8.3.5 Maintenance of Mean's Database

Scope:

The Contractor shall be responsible for maintaining the Mean's cost database. This work includes adding items of work that have been negotiated and put on contract or

other items which have been received as official quotes from vendors / contractors. The negotiated price for the additional items of work incorporated by modification shall remain in effect for that contract year.

8.3.6 Estimating Schedules

NOTE: Effort in this PWS section is not part of Mission Services, and if determined appropriate, will be authorized by an IDIQ task.

Scope:

The Contractor shall provide support to NASA in assessing the task completion schedule impact of reprioritizing estimating tasks. The Contractor shall identify within two working days:

- Affected tasks where schedule slips are projected
- Amount of schedule slip for affected tasks
- Recommendations for reprioritizing tasks to include supporting detail

9.0 Environmental Services

Scope:

The Contractor shall provide environmental services at MAF in compliance with all applicable federal, state, and local laws, permits and permit conditions, Presidential Executive Orders, National Aeronautics and Space Administration (NASA) Policy Directives, and MSFC/MAF Procedural Requirements.

Work Requirements:

The Contractor shall:

1. Ensure personnel conducting work have proper training certifications.
2. Maintain all legal and regulatory environmental documentation.
3. Maintain and operate environmental systems and equipment, including but not limited to: Treatment, Storage and Disposal Facility (TSDF) (Building 159), Industrial Wastewater Treatment Facility (IWTF), PCB Storage Facility (Building 221), Horizontal Well, Dense Non-Aqueous Phased Liquid (DNAPL) Trench, Air Stripper (Pump and Treat Facility), and Monitoring and Recovery Wells.
4. Submit documentation detailing the results of hazardous and controlled waste, pollution prevention, spill response, storm water management, and air management activities in accordance with DRD 1234EE-017, *Environmental Monthly Report*.

9.1 Environmental Management

Scope:

The Contractor shall perform environmental management in accordance with DRD 1234EE-002, *Environmental Operations Plan*. The MAF Environmental representative is the single point of contact with all regulatory agencies concerning NASA and tenant issues, respectively, such as: regulatory interpretation, compliance reporting, inspections and spills or releases. For all permits, the Government will be the site owner and the Contractor will be the site operator. The MAF Chief Operating Officer (COO) or his designee will approve all permit applications/modifications, reports, and documents prepared by the Contractor for submittal to federal, state, and local agencies.

Work Requirements:

The Contractor shall:

1. Support NASA environmental program requirements applicable to the Contractor, including response to environmental data calls; support to internal and external inspections and audits; providing support to required permit applications and environmental permits; and providing technical support to operations to meet environmental permits and regulatory requirements.
2. Provide expertise for environmental operations including hazardous and controlled waste management requirements.
3. Provide a single interface with MSFC Environmental Office on Resources Conservation & Recovery Act (RCRA) Corrective Action issues and MAF onsite support as required. MSFC Environmental Office will be responsible for managing and administering the RCRA Corrective Action Program (site remediation clean-up activities) at MAF.
4. Identify and interpret changes to existing and new environmental requirements applicable to MAF. If applicable, submit impacts and recommendations to MAF Environmental Representative for evaluation.
5. Develop, maintain, and implement work instructions, processes and procedures to ensure that all resources are operationally ready to perform scheduled support.
6. Ensure that all environmental samples collected as a requirement of this PWS are submitted to an accredited laboratory for analysis.
7. Provide environmental expertise in support of engineering design review packages. Provide guidance and monitoring of MAF construction projects for proper implementation of environmental requirements.

8. Identify environmental permit and implementation strategies for all MAF operations. This includes support for NASA's 141B exemption.
9. Promote environmental awareness within MAF community.
10. Support NASA HQ Air Compliance Working Group.
11. Maintain and provide updates to MAF Environmental Resource Document in accordance with DRD 1234EE-011, *Environmental Resource Document*.
12. Support NASA including but not limited to data calls and meetings as required.
13. Plan, participate, and conduct internal/external environmental audits as they relate to compliance of the MAF Environmental Program.

9.1.1 Environmental Management System (EMS)

Scope:

The Contractor shall develop, implement, and maintain an Environmental Management System (EMS), in accordance with NPR 8553.1, *NASA Environmental Management System* and MPR 8500.2, *MSFC EMS Manual*.

Work Requirements:

The Contractor shall:

1. The EMS shall specify aspects/impacts, environmental management programs (EMPs), corrective action program, internal audits, internal & external communication, and management reviews.
2. Comply with ISO14001, *Environmental Management Systems – Requirements* with guidance for use, and prepare and submit a plan in accordance with DRD 1234EE-001, *ISO 14001 Certification Plan*, for MAF to become registered to ISO 14001. Specific requirements are provided in MPR 8500.2, *MSFC Environmental Management System Manual*.
3. Perform work in a manner that conforms to all appropriate Environmental Management Programs and Operational Controls identified by agency, organization or facility EMS, and provide monitoring and measurement information as necessary for the organization to address environmental performance relative to the environmental, energy, and transportation management goals.
4. In the case of a nonconformance, the Contractor shall respond and take corrective action based on the time schedule established by the EMS Site Coordinator.

9.2 Air Emissions Management

Scope:

Air Emissions management involves overall coordination of the MAF air compliance program, which includes staying current with federal and state air regulations and trends, providing overall strategic guidance in the maintenance of current air permits and the acquisition of new air permits with a focus of maximum flexibility for MAF operations and programs.

Work Requirements:

The Contractor shall:

1. Provide input to NASA and regulatory officials on issues that could potentially affect NASA's ability to support current and future programs.
2. Compile data needed to document compliance with permit monitoring, recordkeeping and reporting requirements.
3. Prepare operating procedures addressing compliance requirements for each air emissions source; develop and implement written Operations and Maintenance (O&M) Plans for pollution control devices; provide annual emission inventory data for all emissions sources; develop and implement a Refrigerant Management Plan for any equipment maintained containing Ozone Depleting Chemicals (ODCs); track and compile HCFC 141b data in accordance with DRD 1234EE-010, *Ozone Depleting Substances (ODS) Report*.
4. Immediately report to MSFC/MAF Environmental Office any deviations from air permit requirements (i.e., estimated durations, estimated emissions, probable cause, corrective actions, and preventive measures).
5. Evaluate and recommend environmentally compliant facility designs, modifications, operations, activities, systems, and equipment for MAF programs.
6. Prepare and submit a report on toxic emissions data Inventory in accordance with DRD 1234EE-013, *Toxic Emission Data Inventory/EIS Report*.

9.3 Wastewater and Stormwater Management

Scope:

MAF Wastewater and Stormwater Management involve the overall coordination of wastewater and stormwater on-site at MAF. This effort includes staying current with federal and state water regulations and trends, provide overall strategic guidance in the maintenance of current and the acquisition of new water permits with a focus on

maximum flexibility for MAF operations and programs.

Work Requirements:

The Contractor shall:

1. Notify MSFC/MAF Environmental Office of any new or modified process wastewater discharges and ensure any process wastewater discharges to the sanitary sewer meet New Orleans Sewage and Water Board MAF Industrial Process wastewater discharge agreement.
2. Maintain and update MAF's Spill Prevention, Control, and Countermeasures (SPCC) & Facility Response Plan in accordance with DRD 1234EE-015, *Spill Prevention, Control, and Countermeasures (SPCC) Plan*, for all hazardous material or petroleum product tanks.
3. Notify MSFC/MAF Environmental Office of any new or modified hazardous materials or waste storage areas, storage yards, construction sites, sandblasting activities, materials handling areas, fueling areas, equipment parking areas, and equipment/vehicle washing activities.
4. Prepare and submit a discharge monitoring report in accordance with DRD 1234EE-014, *Discharge Monitoring Report*.

9.4 Waste Management

Scope:

MAF Waste Management involves staying current with federal and state regulations and trends and providing overall strategic guidance in the maintenance of current permits and the acquisition of new permits with a focus on maximum flexibility for MAF operations and programs. The Contractor shall be responsible for acquisition and implementation of the Hazardous Materials Management System (HMMS) software and related hardware for tracking of hazardous materials and waste at MAF.

Work Requirements:

The Contractor shall:

1. Properly characterize all hazardous waste that is generated on-site with an appropriate waste stream number.
2. Identify all new or modified hazardous or controlled waste producing activities and ensure that the Material Safety Data Sheet (MSDS) and waste profile documentation data is maintained.
3. Maintain the responsibility and control of all generated industrial and hazardous waste from initial generation to final disposal off-site.

4. Identify, approve, and manage site and program generated hazardous waste and petroleum, oil, and lubricant (POL) wastes year round for all "Less Than Ninety Day Storage Areas", numerous Satellite Accumulation Areas (SAAs), and transport to the Treatment, Storage, and Disposal Facility (Building 159), as appropriate.
5. Ensure proper records of types and quantities of hazardous and controlled waste are maintained. Hazardous and non-hazardous waste records will be maintained via HMMS.
6. Provide overall management of the permitted Treatment, Storage, and Disposal Facility (TSDF), Building 159.
7. Prepare and ship all hazardous and non-hazardous waste off-site for disposal.
8. Develop and sign the Hazardous Waste Manifest to ensure Department of Transportation (DOT) compliance for shipping of all waste off-site.
9. Provide support and technical consultation for spill response..
10. Prepare and submit a report on hazardous waste in accordance with DRD 1234EE-008, *Annual Hazardous Waste Report*, and on non-hazardous solid waste in accordance with DRD 1234EE-012, *Industrial Solid Waste Report*.
11. Conduct audits of off-site treatment, storage, and disposal facilities in accordance with DRD 1234EE-009, *Offsite Treatment, Storage and Disposal (TSD) Facility Audit Report*.

9.5 Hazardous Waste Operations

Scope:

The Contractor shall provide operation of the permitted hazardous waste storage facility (building 159). The Contractor shall remove waste from the point of generation and transport to building 159.

A) Hazardous Waste Operations – Treatment, Storage and Disposal Facility (Building 159)

Work Requirements:

The Contractor shall:

1. Deliver drums and containers to generator for accumulation of waste.
2. Maintain a hazardous waste inventory log of incoming drums, and containers.

3. Consolidate compatible waste streams.
4. Segregate drums into appropriate locations for storage in the Treatment, Storage, and Disposal Facility Building 159.
5. Crush empty containers, rags, and other approved items as applicable to support waste minimization efforts.
6. Coordinate and sample waste in drums for characterization.
7. Prepare lab packs (per DOT requirements) for transport and disposal.
8. Prepare waste for off-site shipment (per DOT requirements) and disposal which includes proper labeling, verifying contacts, and loading trucks.
9. Conduct weekly inventory of hazardous waste storage building (Building 159).

B) Hazardous Waste Operation – Storage Tank

Work Requirements:

The Contractor shall:

1. Coordinate and sample waste in storage tanks for characterization as required.
2. Inspect, drain, and clean tank containment systems.
3. Perform transfers of waste solvents, etc., from storage tanks to drums and/or tank trailers.
4. Clean chemical and petroleum storage tanks as required or prior to maintenance activities.

C) Hazardous Waste Operations - Miscellaneous

Work Requirements:

The Contractor shall:

1. Empty dust collectors, site wide.
2. Pick up photochemical and biomedical waste daily.
3. Perform minor maintenance on equipment used in job.

4. Demonstrate proficient use of hand tools, pumps, drum handlers, drum de-headers, drum compactors, and associated equipment necessary to perform assigned tasks safely.
5. Operate Forklift/Hand truck/drum dolly to move drums.

9.6 Spill Response and Clean-up

NOTE: Effort in this PWS section consists of both Mission Services and IDIQ. Custodial Services for PWS scope authorized on an IDIQ basis will be authorized and costed as a function of the IDIQ task order.

Scope:

The Contractor shall provide emergency response for chemical spills/releases of regulated hazardous wastes and materials at MAF.

Work Requirements:

The Contractor shall:

1. The Contractor shall be responsible for all aspects of spill response (i.e. clean up, removal, and disposal) except for the actual cleaning of any flight hardware adversely affected by the spill. The Contractor shall not clean flight hardware unless written permission is received from the responsible party.
2. Maintain a spill response capability at MAF 24 hours a day, 7 days a week, and 365 days per year. Response personnel shall mobilize immediately upon notification of a spill and begin conducting spill scene containment and response actions.
3. Provide properly trained on-site personnel capable of handling level B, C, and D type spill response and clean-up on-site. Spill cleanup includes any non-hazardous substance/material, hazardous substances/material and blood borne pathogens. In addition, the Contractor shall coordinate with the Fire Brigade for spill response requiring level A PPE.
4. Perform area and equipment decontamination.
5. Participate in spill response drills operations.

9.7 Other Environmental Activities

Scope:

The Contractor shall perform other environmental activities as defined below.

A. Hazardous Materials Management

Work Requirements:

The Contractor shall:

1. Track, control, manage, inventory, and report all hazardous materials used on-site at MAF.
2. Implement and maintain a hazardous material tracking system which utilizes Hazardous Materials Management System (HMMS).
3. Perform routine inspection of chemical storage areas at MAF to ensure compliance with chemical management requirements.
4. Prepare and submit annual Toxic Release Inventory and Tier II Reports in accordance with DRD 1234EE-006, *Toxic Release Inventory (TRI) Report*, and DRD 1234EE-005, *Superfund Amendments and Reauthorization Act (SARA)/Tier II Report*, respectively.

B. Pollution Prevention (P2) Program

Work Requirements:

The Contractor shall:

1. Develop, implement, and maintain a pollution prevention plan in accordance with DRD 1234EE-003, *Pollution Prevention Plan*, for MAF.
2. Identify, research, and seek to implement P2 projects.
3. Develop, implement, and manage a recycling and affirmative procurement program at MAF. Refer to PWS section 5.4 for details.
4. Provide administration for the NASA Environmental Tracking System (NETS) for P2, recycling, affirmative procurement, as well as other environmental media.
5. Represent MSFC/MAF in support of NASA wide working groups or workshops involving Pollution Prevention.

C. National Environmental Policy Act (NEPA)

Scope:

The Contractor shall provide guidance, direction, and support for NEPA programs as they specifically apply to and impact MAF, in accordance with NPR 8580.1 and shall maintain/update MAF's Environmental Resource Document in accordance with DRD 1234EE-011, *Environmental Resource Document*. The Contractor shall conduct assessments and document all new MAF construction projects or facility modifications to determine if a Categorical Exclusion, Environmental Assessment, or Environmental Impact Statement is required.

D. National Historic Preservation Act (NHPA)

Scope:

The Contractor shall provide guidance, direction, and support for natural and cultural resources assessment at MAF. The contractor shall be responsible for implementation of NHPA requirements for MAF buildings and structures that are determined to be potentially eligible for inclusion in the national register of historic places. The contractor shall ensure compliance with the National Historic Preservation Act and support NASA Cultural Resources Management Panel activities. The contractor shall maintain and update MAF's natural and cultural resources plan in accordance with DRD 1234EE-004, *Cultural and Historic Resources Management Plan*.

E. NASA Environmental Tracking System

Scope:

The Contractor shall be responsible for input of all data into NETS as defined, but not limited to Pollution Prevention activities; Spills, Inspection Activities, and Non-Compliance actions; Hazardous Waste data, Permit Status, Staffing data; Recycling, Affirmative Procurement, CFC/Halon consumption, Non-Hazardous Solid Waste, RCRA and NEPA activities; EMS information; and other environmental related activities.

F. Toxic Substance Control Act (TSCA)

Scope:

The Contractor shall ensure compliance with TSCA while providing guidance, direction, and management of all equipment and the storage and disposal of all waste containing Polychlorinated Biphenyls (PCBs) at MAF. The Contractor shall prepare and submit a report on the use of PCBs in accordance with DRD 1234EE-007, *Polychlorinated Biphenyl (PCB) Annual Report*.

G. Resource Conservation and Recovery Act (RCRA) Corrective Action

Scope:

The Contractor shall be responsible for providing the environmental oversight and interface functions as it relates to the RCRA Corrective Action at MAF. This includes, but is not limited to management and operations of the Air Stripper (Pump & Treat) facilities, Dense Non-Aqueous Phased Liquid (DNAPL) trench, and monitoring and recovery wells. The MSFC Environmental Office will be responsible for Management of the MAF Corrective Action Program.

10.0 Construction Management

NOTE: Effort in this PWS section is not part of Mission Services, and if determined appropriate, will be authorized by an IDIQ task.

Scope:

The Contractor shall provide overall construction project management (including scope, cost and schedule) and execution of local projects and CoF projects. Design and inspection effort for construction projects at MAF will be performed by other NASA contractor(s).

Work Requirements:

The Contractor shall:

1. Manage and implement facility projects in accordance with NPR 8820.2, *Facility Project Implementation Guide*.
2. Prepare and submit NASA Form 1509 (project approval document) to NASA and maintaining a copy of the approved NASA Form 1509 authorizing the project (required for projects greater than \$50K).
3. Develop project requirements documents
4. Prepare construction bid packages, conducting job walks/site visits with potential construction contractors, and awarding of subcontracts
5. Coordinate construction activities with user(s)/tenant(s) to minimize any potential impact to user(s)/tenant(s) activities.
6. The Contractor shall verify construction progress by conducting weekly meetings with the construction contractor and the A&E service provider.

10.1 Local Projects

Scope:

The Contractor shall provide management of local construction projects with an estimated value of less than \$500,000.

10.1.1 Construction Project Management

Scope:

The Contractor shall execute local construction projects utilizing either contractor in-house or subcontract personnel. The Contractor shall utilize subcontract personnel for 100% of local construction projects except for COTR approved deviations.

Work Requirements:

The Contractor shall:

1. Coordinate and conduct design reviews (minimum of one review for local projects).
2. Utilize latest MAF Facility Design Master Specifications.
3. Perform critical path planning and scheduling to ensure successful implementation with minimal impact to MAF site occupants.
4. Perform pre-solicitation and post award activities for subcontracted work.
5. Resolve Change Items and claims with construction subcontractor.
6. Review and approve subcontractor proposed construction schedule and evaluate and track construction progress.
7. Perform the necessary quality assurance/quality control on each project.
8. Collect and distribute all documentation related to completed construction effort.
9. Coordinate with the A&E service provider any deviations from the design drawings prior to moving forward with construction. Provide a copy of final redline drawings to the design lead in order to prepare final as-built drawings for distribution and perform any required modifications to configuration control drawings.
10. Implement facility activation plans to ensure new or modified facilities or equipment are coordinated, reviewed, and accepted by the Government.

10.1.2 Authorization

Scope:

The Contractor shall solicit inputs via FWR from Programs, tenants, and NASA before submitting a local projects plan for the Fiscal Year (FY). The FY Plan shall be submitted to NASA for approval prior to implementation. Subsequent modifications

require NASA approval prior to implementation. The Contractor shall integrate this plan with the 5-Year plan.

10.1.3 Change Items (CI), Request for Information (RFI) and Claims

Scope:

The Contractor shall manage and close all CI's and RFI's to include obtaining assistance from A&E service provider for resolution. The Contractor shall manage and close all subcontractor claims for additional compensation.

Work Requirements:

The Contractor shall:

1. Prepare construction cost estimates for all CIs and claims valued at less than \$100,000 (estimate shall be prepared in accordance with Section 8.3).
2. A&E service provider construction cost estimate input will be utilized for change items and claims valued at \$100,000 or greater. Provide the A&E service provider all necessary documents and drawings for preparing a change item and/or claim construction cost estimate.
3. Evaluate and negotiate CI and claims with and provide RFI responses to the construction subcontractor.

10.1.4 Project Execution

Scope:

The Contractor shall execute approved local construction projects consistent with approved budgets and schedules. When a project that required a design package is complete, the Contractor will notify the Government and the A&E service provider to schedule the final inspection. The Contractor in conjunction with NASA, the construction subcontractor, the A&E service provider and the cognizant user(s)/tenant(s) will conduct the final inspection and correct any discrepancies noted during the final inspection. When all discrepancies have been corrected and accepted by NASA. A completion statement will be submitted to NASA and filed by the Contractor to document project closure certificate of completion.

A) Administration:

Scope:

The Contractor shall be responsible for maintaining contract plans, specifications, field engineering change documents, test data, drawing files, submittals, vendor data, correspondence, status reports, progress schedules and contract reports as specified.

Work Requirements:

The Contractor shall:

1. Regularly review the construction subcontractor's construction progress schedules for sufficiency of detail, proper logic, time duration, milestone inclusion, and cost data, and provide comments/recommendations to affected MAF organizations.
2. Resolve comments and document the results of these resolutions.
3. Assure that revisions to the construction schedules are made by the construction contractor and that all affected MAF organizations are apprised of these changes.
4. Review construction contractor work plans to assure that all contract requirements are satisfied, and resolve discrepancies identified during reviews.
 - a. As a minimum, the Contractor shall review quality, safety, and verification testing plans.
 - b. The reviews shall include an analysis of the construction project control systems to assure documentation is complete and compatible with contract goals.
5. Maintain on-site contract drawings (including shop drawings), plans, procedures, submittals, specifications, test requirements, and project correspondence files to assure adequate documentation of all contractual agreements.
6. Be responsible, when required, for the following tasks in conjunction with GFE materials and equipment required by the construction contractor:
 - a. Document receipt of GFE.
 - b. Contact appropriate individual (design lead, systems engineer, NASA, etc.) for problems associated with GFE.
 - c. Expedite delivery of GFE to construction subcontractor.
 - d. Identify GFE shortages.
 - e. Track documentation to support GFE.
 - f. Inspection of GFE upon delivery.
7. Ensure all O&M documentation including vendor O&M manuals, vendor as-built drawings, software programs, and equipment parts list has been properly processed and distributed to Contractor assigned O&M organizations.

B) Field Surveillance, Inspection and Documentation:

Scope:

The Contractor in conjunction with the A&E service provider shall be responsible for conducting on-site surveillance and inspection, expediting and monitoring of all operations associated with assigned construction projects, and preparing / maintaining files, logs etc. to document project execution activities.

Work Requirements:

The Contractor shall:

1. Perform surveillance and inspections of all assigned construction projects utilizing inspection plans, current drawings, specifications, field change data, and all applicable documentation approved for incorporation into the construction subcontract.
 - a. Daily activity records, covering all disciplines and crafts, shall be prepared in order to provide a chronological history of task accomplishment.
 - b. Records and forms shall be prepared and maintained to record/reflect anomalies, unsatisfactory conditions, corrective actions, and final dispositions.
2. Maintain a set of contract drawings in a current condition, reflecting changes, deviations, and other pertinent information.
3. Verify all tests are performed by the construction subcontractor as required by the construction subcontract drawings and specifications.
4. Witness all testing required to be witnessed in the construction subcontract and specifications.
 - a. Tests performed by the construction subcontractor off-site need not be witnessed unless directed by NASA, but test results shall be reviewed as required.
 - b. Testing which is required for receiving inspection purposes (GFE, Construction Contractor-procured items) shall be performed by the construction subcontractor, witnessed by his Quality Control representative, and surveyed by the Contractor.
 - c. Assure that tests and test results are properly documented by the construction subcontractor, as required by the construction subcontract.
5. Inspect and evaluate the construction subcontractor's on-site plant and equipment for compliance with safety, compatibility, and serviceability requirements.

6. Prepare and maintain logs, files, etc. as required to document and track on-site project work, inspections, and corrective actions. As a minimum, this record system will record all technical support requests (on-site source), engineering Requests for Information (RFIs) and Change Items (CIs), engineering responses to RFIs and Claims.
7. Receive shop drawings/data submittals from the construction contractor, transmit the drawings for review, receive the drawings/data submittals after review, and return to the construction contractor (shop drawing log indicating progress of each step shall be kept used to track and expedite the shop drawings/data submittals to assure a timely response.
8. Ensure that all requests for support such as engineering identifications, requests for information, requests for special equipment support, etc., are logged and tracked to preclude impacts to planned schedules and provide for complete and accurate documentation.

C) Site Coordination:

Scope:

The Contractor shall interface/coordinate with NASA and appropriate NASA contractors to ensure daily and long term schedules, changes, problems, impacts, documentation, and other program/project matters are resolved. The Contractor shall schedule and chair weekly status meetings with construction subcontractors, A&E service provider, subcontractors, and all pertinent personnel throughout the construction phase for all on-going construction projects.

D) Special Requirements:

Scope:

Contractor shall be responsible for performing approved construction in various conditions, with qualified personnel, and in accordance with national/local codes and standards.

Work Requirements:

The Contractor shall:

1. Require some work to be performed under restrictive conditions (enclosures, pits, tunnels,) heights in excess of 200 feet, and severe weather conditions.
2. Perform all work in accordance with national/local building codes and standards, and NASA safety standards. High pressure system work will be performed in accordance with ASME Boiler Code and ANSI Standards.

3. Ensure welders are certified in accordance with ASME/ANSI/AWS. High pressure systems and other critical weld will be inspected by the appropriate Non-destructive Examination method and approved by a certified weld inspector.
4. Provide asbestos certified craft which are capable of performing "on-sheet" and "glove-bag" abatement of asbestos in support of construction projects.
5. Provide in-house craftsman that are fully qualified by technical craft/trade training and/or progressive experience within assigned work classification. Qualifications and position records for all craftsmen must be documented.

10.2 CoF Projects

Scope:

The Contractor shall provide management of construction of facilities projects which are those with an estimated value greater than \$500,000.

10.2.1 Construction Project Management

Scope:

The Contractor is responsible for furnishing the necessary management, labor, materials, subcontractors, equipment and supplies, except as specified to be furnished in accordance with Attachment J-7, to implement CoF projects at MAF. All CoF construction will be subcontracted.

Work Requirements:

In addition to the Local Project requirements in 10.1, the Contractor shall:

1. Coordinate design reviews (30%/60%/90% required for CoF). CoF funds are typically released by NASA Headquarters based on 60% design review. Long lead procurement items will be identified during the 30% or 60% design reviews as required supporting the construction schedule.
2. Perform construction contract award activities which include management and documentation of proposal opening process, development of cost worksheet/bid report, details bids, apparent low bidder, cost estimate and available funds, proposal summary, and technical evaluation.

10.2.2 Schedules**Scope:**

The Contractor shall prepare a CoF master schedule for authorized projects and obtain Government approval. The master schedule is a one line schedule for each project. For each individual project, the Contractor is responsible for preparing a more detailed/multi-bar schedule which identifies all aspects of the project, from solicitation through project completion. If any revisions to the completion date of any project schedule are required, a revised schedule shall be prepared by the Contractor and NASA approval obtained.

10.2.3 Change Items, Request for Information and Claims

See Section 10.1.3.

10.2.4 Project Execution

See Section 10.1.4.

11.0 Indefinite Delivery Indefinite Quantity Services**Scope:**

The Contractor shall provide the services identified in Table 11-1 as IDIQ or as Combined Mission Services and IDIQ, in accordance with Task Orders issued pursuant to Attachment J-14, IDIQ Process and Attachment J-15, IDIQ Task Order Procedure.

NOTE: The following table denotes those WBS elements which are Mission Services, IDIQ, and those that are both Mission Services and IDIQ. Mission Services work is priced in CLIN's 1, 4, 7, 10, and 13, which are the Mission Services lines of Clause B-2. IDIQ work is priced in CLIN's 2, 3, 5, 6, 8, 9, 11, 12, 14, and 15, which are the IDIQ lines of Clause B-2.

TABLE 11-1 (below)

		Combined				
		Mission				
Mission	IDIQ	Services				
Services	Services	& IDIQ				
				MSFOC PWS		
				1.0	Program Management	
				1.1	Business Management	
X					1.1.1 Business Administration and Financial Management	
X					1.1.2 Management Information Systems	
	X				1.1.3 Geographic Information System	
X					1.1.4 Information Technology Security	
		X			1.1.5 Procurement Management	

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X					1.1.6 Equipment Acquisition and Management
					1.1.7 Public Affairs
				1.2	Technical Management
X					1.2.1 Work Management
X					1.2.2 Documentation and Records Management
X					1.2.3 Configuration Management
		X			1.2.4 Training and Certification
X					1.2.5 Quality and Workmanship
				2.0	Safety, Health and Emergency Management
X				2.1	Industrial Safety Program
				2.2	Occupational Health Program
		X			2.2.1 Occupational Health Services
X					2.2.2 Industrial Hygiene Services
X					2.2.3 Compliance
X				2.3	Emergency Management
X					2.3.1 Emergency Preparedness
		X			2.3.2 Emergency Operations
		X			2.3.3 Continuity of Operations
				3.0	Manufacturing Support
				3.1	Integration of Manufacturing Operations
	X				3.1.1 Integration Roles and Responsibilities
	X				3.1.2 Integration Schedules
X				3.2	General Support of Manufacturing Facilities
	X			3.3	Support for Common Manufacturing Resources
	X			3.4	Support Dedicated Manufacturing Areas
X				3.5	Contamination and Foreign Object Debris Program
				4.0	Maintenance
				4.1	Maintenance Planning
X					4.1.1 Annual Work Plan
X					4.1.2 Five Year Maintenance Plan
X					4.1.3 Facility Condition Assessment
X					4.1.4 Work Order Planning and Scheduling
		X			
				4.2	Preventive Maintenance
				4.3	Corrective Maintenance
X					4.3.1 Maintenance Workmanship and Materials
X					4.3.2 Corrective Maintenance Work Order Documentation
				4.4	Reliability Centered Maintenance
X					4.4.1 Reliability Centered Maintenance Approach
X					4.4.2 Reliability Centered Maintenance Engineering
		X		4.5	Maintenance Projects
X				4.6	Maintenance Engineering
		X		4.7	Pressure Vessels Systems Management
X				4.8	Other Maintenance Activities
				5.0	Site Services
X				5.1	Food Services

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X				5.2	Mail Services
		X		5.3	Custodial Services
X				5.4	Recycling Services
				5.5	Multimedia Services
X					5.5.1 Graphics Development
X					5.5.2 Content Development and Assembly
X					5.5.3 Content Distribution
X				5.6	Reproduction Services
X				5.7	Roads and Grounds Services
X				5.8	Pest Control
X				5.9	Model Shop and Room
	X			5.10	Special Events
				6.0	Site Operations
X				6.1	Operations Requirements
		X		6.2	Port and Harbor Operations
X				6.3	Power Plant Operations
X				6.4	Industrial Waste Water Treatment
X				6.5	Energy Management Control System Operations
X				6.6	Other Operations Activities
				7.0	Logistics Operations Services
X				7.1	Property Management
		X		7.2	Supply and Material Management:
X				7.3	Redistribution, Utilization and Disposal:
X				7.4	Receiving and Inspection:
X				7.5	Packing and Shipping Operations:
X				7.6	Vehicle Management Operations:
		X		7.7	Moving and Hauling Services:
	X			7.8	Explosive Operations
				8.0	Sustaining Engineering
				8.1	Facility Planning
X					8.1.1 General Planning and Administration
	X				8.1.2 Construction of Facilities
	X				8.1.3 Engineering Assessments
X					8.1.4 Space Utilization
		X			8.1.5 Master Planning
				8.2	Engineering Support Services
X					8.2.1 Drawings and Software Configuration Control
X					8.2.2 FSU Drawing Maintenance and Distribution
				8.3	Cost Estimating
	X				8.3.1 Budgetary/Conceptual Cost Estimates
	X				8.3.2 Construction Cost Estimates
	X				8.3.3 Design Estimate Validation
	X				8.3.4 Change Items and Claims
X					8.3.5 Maintenance of Mean's Database
	X				8.3.6 Estimating Schedules

				9.0	Environmental Services
				9.1	Environmental Management
X					9.1.1 Environmental Management System
X				9.2	Air Emissions Management
X				9.3	Wastewater and Stormwater Management
X				9.4	Waste Management
X				9.5	Hazardous Waste Operations
		X		9.6	Spill Response and Clean-up
X				9.7	Other Environmental Activities
				10.0	Construction Management
				10.1	Local Projects
	X				10.1.1 Construction Project Management
	X				10.1.2 Authorization
	X				10.1.3 Change Items, Request for Information and Claims
	X				10.1.4 Project Execution
				10.2	Construction of Facilities Projects
	X				10.2.1 Construction Project Management
	X				10.2.2 Schedules
	X				10.2.3 Change Items, Request for Information and Claims
	X				10.2.4 Project Execution
				11.0	Indefinite Delivery Indefinite Quantity (IDIQ) Services
					MSFOC FACILITIES PWS (Non-Fee Bearing)
				1.0	Contractor Acquired Property
	X			2.0	Rehabilitation of Contractor Acquired Property
	X			3.0	Payment of Utilities
	X			4.0	Construction of Local Projects
	X			5.0	Environmental Compliance and Restoration
	X			6.0	Construction of Facilities
	X			7.0	Preliminary Engineering Report (PER)
	X			8.0	Facility Support Studies

TABLE 11-1 (above)

NOTE: As denoted in Table 11-1, several WBS elements contain both Mission Services and IDIQ scope. Those WBS elements that contain both Mission Services and IDIQ scope are identified below, and define the portion of the content that is IDIQ.

WBS 1.1.5 Procurement Management

When the Contractor is procuring subcontract support for PWS scope authorized on an IDIQ basis (e.g. subcontracting construction activities), Procurement

Management will be authorized and costed as a function of the IDIQ. All other Procurement Management (e.g. acquire spares, repair parts, materials, maintenance, etc.) will be considered Mission Services.

WBS 1.2.4 Training and Certification

When a user(s)/tenant(s) has a unique training or certification requirement, the activity will be authorized and costed on an IDIQ basis. All other Training and Certification activities will be considered Mission Services.

WBS 2.2.1 Occupational Health Services

When a non-NASA user(s)/tenant(s) has need to utilize the non-emergency aspects of Occupational Health Services, the activity (e.g. physical examinations) will be authorized and costed on an IDIQ basis. All other Occupational Health Services will be considered Mission Services.

WBS 2.3.2 Emergency Operations

When the Contractor is providing support in a post emergency timeframe, the activities shall be authorized and costed on an IDIQ basis. All other Emergency Operations activities will be considered Mission Services.

WBS 2.3.3 Continuity of Operations

When the Contractor is providing support in a post emergency timeframe, the activities shall be authorized and costed on an IDIQ basis. All other Continuity of Operations activities will be considered Mission Services.

WBS 4.2 Preventive Maintenance

When the Contractor is providing preventive maintenance to user(s)/tenant(s) in dedicated manufacturing areas, the activities shall be authorized and costed on an IDIQ basis. Preventive Maintenance activities associated with fluctuations in demand for manufacturing resources (e.g. PM's for equipment transitioning from a dedicated manufacturing area to another dedicated manufacturing area or to the common manufacturing area) may also be authorized on an IDIQ basis. All other Preventive Maintenance activities will be considered Mission Services.

WBS 4.5 Maintenance Projects

When the Contractor is performing maintenance projects valued at less than \$50,000, the effort is considered Mission Services. Maintenance projects valued at \$50,000 or more will be authorized by an IDIQ task.

WBS 4.7 Pressure Vessels Systems Management

When the Contractor is providing Pressure Vessels Systems Management for a user(s)/tenant(s), the PWS scope will be authorized and costed on an IDIQ basis. Pressure Vessels Systems Management performed in support of MSFOC activities will be considered Mission Services.

WBS 5.3 Custodial Services

When a user(s)/tenant(s) has a need to modify the level or type of custodial services being received, the adjustment will be authorized and costed on an IDIQ basis. All other Custodial Services will be considered Mission Services.

WBS 6.2 Port and Harbor Operations

The Contractor will receive authorization to provide barge support (e.g. cleaning, maintenance, dry docking, preparation for shipment, tug services) on an IDIQ basis. All other Port and Harbor Operations will be considered Mission Services.

WBS 7.2 Supply and Material Management

When a user(s)/tenant(s) has a requirement for tracking, processing, management and/or issuing of spares, parts, supplies, and materials, the activity will be authorized and costed on an IDIQ basis. All other Supply and Material Management will be considered Mission Services.

WBS 7.7 Moving and Hauling Services

When a user(s)/tenant(s) has a requirement for moving or hauling a non-typical item (e.g. flight hardware, special tooling, special test equipment) located within or from/to their dedicated manufacturing area, office space, green space or warehouse space, the activity will be authorized and costed on an IDIQ basis. All other Moving and Hauling Services will be considered Mission Services.

WBS 8.1.5 Master Planning

The Contractor will receive authorization to provide MAF site promotion and development support on an IDIQ basis. All other Master Planning will be considered Mission Services.

WBS 9.6 Spill Response and Clean-up

When a user(s)/tenant(s) has a spill response and clean-up requirement within their dedicated manufacturing area or warehouse space, the activity will be authorized and costed on an IDIQ basis. All other Spill Response and Clean-up activities will be considered Mission Services.

End of Provision

**MANUFACTURING SUPPORT AND FACILITIES OPERATIONS
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ATTACHMENT J-1-A

PERFORMANCE STANDARDS

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Section 1.0 PROGRAM MANAGEMENT				
SECTION	SECTION TITLE	WORK TOPIC	PERFORMANCE MEASURE	PERFORMANCE STANDARD
1.1.1	Financial Management	Cost Accrual Accuracy	Monthly Estimates for Accruals	Monthly accrual estimates shall be 95% accurate to actual reported costs for the same period
1.1.1	Financial Management	Billable cost report	Accuracy of billable contract cost	Report 100% of billable contract costs in the NF 533M within 1 month of when cost was incurred
1.2.1	Work Management	Emergency-type calls to the Work Control Center	Notify the appropriate responder	Within five minutes of notification of emergency
1.2.1	Work Management	Response to Emergency Trouble Calls	On site response to the emergency trouble call upon notification	Within fifteen (15) minutes following notification.
1.2.1	Work Management	Calls to Work Control Center (non-emergency, non-ETC)	Communicate the work requirement to the appropriate responder	Within thirty (30) minutes of notification of work requirement
1.2.1	Work Management	Response time for Routine Trouble Calls	Responding to call	Within 2 hours following notification of the call for both core and non-core working hours.
1.2.1	Work Management	Completion of Routine Trouble Calls	Closure of work order in CMMS to the Routine Trouble Call	Completed within thirty (30) working days following notification of the call.
1.2.1	Work Management	Status of Work	Timeliness of work status	Within 2 hours of notification of work requirement
1.2.1	Work Management	Work Control Center response to customer calls	Answering telephone calls in a timely and courteous manner	Within thirty (30) seconds of initiation of call to the WCC
1.2.1	Work Management	Work Records	Closure of work records in CMMS	Complete 100% closure of work records in CMMS within 3 week days after physical completion of work.
1.2.2	Documentation and Records Management	Contractor Developed Documentation	Release of documentation	Complete 100% of all Contractor developed documentation released to Electronic Documentation Control (EDC) within fifteen (15) days of completion
1.2.3	Configuration Management	Configuration Control	Accuracy of MAF property or equipment Drawings and Documents	Accurately complete 100% of configured documentation updated following changes to MAF property or equipment within thirty (30) days of work completion
1.2.4	Training and Certification	Training and Certification	Accuracy of Personnel Training and Certification	Ensure 100% compliance of required personnel training and certification prior to work performance.

Section 2.0 SAFETY, HEALTH AND EMERGENCY MANAGEMENT

SECTION	SECTION TITLE	WORK TOPIC	PERFORMANCE MEASURE	PERFORMANCE STANDARD
2.1	Industrial Safety Program	Annual Facility Inspections	Verify/sample at least 30% of the annual facility inspection findings and associated closure rationale	No more than 10 discrepancies between closure rationale and inspection findings per calendar year
2.1	Industrial Safety Program	MAF Construction Site Inspections	Periodic Inspections of Construction of Facilities (CoF) construction sites and other construction sites	No OSHA violations or findings.
2.1	Industrial Safety Program	Mishap Reporting	Mishap and close calls reported and trends established	Notify MAF Safety Office within 1 hour of Type A & B mishaps, high visibility mishaps, and high visibility or close calls.
2.2	Occupational Health Program	Medical/Ambulance Service	From time of call received to time arrived at the scene.	4-minute or less response time
2.2	Occupational Health Program	Employee Exposure Investigation	Timeliness of investigations	Initiate exposure investigation within 2 hours of receipt of notification.
2.2	Occupational Health Program	Investigation and reporting potentially life threatening workplace hazards	Timeliness of reporting employee complaints to the Government	No later than 12 hours of receipt of complaint.
2.2	Occupational Health Program	Investigation and reporting indoor air quality complaints	Timeliness of reporting indoor air quality complaints to the Government	Within 5 working days of receipt of complaint.
2.3.3	Continuity of Operations	COOP Plans	Plans are fully developed/tested and ready for implementation with and without warning	Operational within 24 hours of the "Weather Safe" call and maintain sustained mission essential operations for a minimum of thirty (30) days.

Section 3.0 MANUFACTURING SUPPORT

SECTION	SECTION TITLE	WORK TOPIC	PERFORMANCE MEASURE	PERFORMANCE STANDARD
3.1	Integration of Manufacturing Operations	Manage, Operate and Maintain	Timeliness	Perform all manufacturing support operations consistent with the Integrated Manufacturing Facilities Schedule.
3.1	Integration of Manufacturing Operations	Manage, Operate and Maintain	Quality	Perform all manufacturing support operations with no negative impact to User/customer operations
3.1	Integration of Manufacturing Operations	Satisfy Program/Customer requirements	Quality	No significant customer issues expressed at monthly interchange.
3.1.1	Integration of Roles and Responsibilities	Integrate Program/Customer requirements	Timeliness	Ensure that all customer requests for space or services are submitted to the Government at least thirty (30) working days prior to need date.
3.2	General Support of Manufacturing Facilities	Proof Load/Tag out	Timeliness	All equipment not proof loaded by the proof load expiration date shall be tagged out the day of expiration.
3.3	Support for Common Manufacturing Resources	Lab Database Update	Timeliness of Reports	Input Lab test data into the Materials & Processing Technical Information System (MPTIS) database within 5 working days of test report complete and delivery to customer.
3.3	Support for Common Manufacturing Resources	Non-validation Notification of Lab results	Timeliness	Notify within 24 hours of test validation assessment complete customer contact of any testing that can not be validated or correlated with test data from other sources.
3.3	Support for Common Manufacturing Resources	Analysis Reports Database Update	Timeliness	Update Analysis Reports database within 5 working days of analysis report complete.
3.3	Support for Common Manufacturing Resources	Metrology Calibration	Timeliness	Complete calibration of Inspection, Measuring, and Test Equipment (IMTE) within 30 working days of receipt of equipment
3.3	Support for Common Manufacturing Resources	Metrology Calibration	Quality	Upon completion of calibration and delivery to customer, no IMTE found to be out of tolerance by customer upon first use.
3.3	Support for Common Manufacturing Resources	Non Destructive Evaluation (NDE) Reports	Timeliness	NDE reports will be submitted to the Government within 2 working days of completion for review and concurrence.

Section 3.0 MANUFACTURING SUPPORT (cont)

SECTION	SECTION TITLE	WORK TOPIC	PERFORMANCE MEASURE	PERFORMANCE STANDARD
3.5	Contamination and Foreign Object Debris Program	FOD Incidents	Quantity of FOD Incidents	Zero FOD preventable incidents
3.5	Contamination and Foreign Object Debris Program	Reporting of FOD Incidents	Timeliness of reporting FOD Incidents	FOD incidents will be reported to the Government within 24 hours of incident being identified by the Contractor.
3.5	Contamination and Foreign Object Debris Program	Corrective Actions for FOD Incidents	Timeliness of presenting corrective actions for FOD Incidents	Corrective actions for any FOD incidents shall be presented to the Government within 10 working days of occurrence.
3.5	Contamination and Foreign Object Debris Program	FOD Team Meetings	Timeliness of meetings	Conducted monthly. Minutes will be published within 5 days of meeting.

Section 4.0 MAINTENANCE				
SECTION	SECTION TITLE	WORK TOPIC	PERFORMANCE MEASURE	PERFORMANCE STANDARD
4.2	Preventative Maintenance	Perform Preventive Maintenance plans on schedule	Completion of Preventative Maintenance Work Orders	Complete 98% of Planned Preventative schedules by due date in MAXIMO. Unplanned events such as parts availability, access, production windows account for 2% non performance by due date.
4.2	Preventative Maintenance	Maintain Job Plans in CMMS	Accuracy of PM Job Plans in CMMS	100% of all equipment in Attachment J-X is identified with a Job Plan or an engineering rationale as to why PM's are not performed
4.2	Preventative Maintenance	Preventive Maintenance Plans meet equipment specifications	Quality of the Preventative Maintenance Program	Satisfactory ratings on all government audits.
4.3	Corrective Maintenance	Emergency Trouble Calls	Completion of Emergency Trouble Call Work Orders in CMMS	Once emergency situation is arrested, Complete work and close out work order in CMMS within 5 days of call.
4.3.2	Corrective Maintenance Work Order Documentation	Closure of Work Orders in CMMS	Completion of Work Orders in CMMS by work classification by date indicated from notification	Audit Corrective Action.....1 month CM to Complete PM.....Next frequency PM issue date but not to exceed 3 months Customer Critical.....2 weeks Environmental Critical.....1 month Field Generated1 month Fire System Repair.....Dates provided by RAC Code/Safety management Material Only.....3 Months Normal.....6 Months Outage Required.....Set to next Holiday or outage specific date PT&I Repair.....3 Month Production Critical.....1 day CoF/Subcontract Support...6 months Referencing PM.....3 months Safety Critical.....Dates provided by Safety Management.....1 Month Security System Repair.....1 Month Subcontract.....3 Months

Section 4.0 MAINTENANCE (cont)

SECTION	SECTION TITLE	WORK TOPIC	PERFORMANCE MEASURE	PERFORMANCE STANDARD
4.3.2	Corrective Maintenance Work Order Documentation	Maintain Corrective Maintenance documentation in CMMS	Equipment is available to support mission of the Michoud Assembly Facility	Satisfactory ratings on all audits
4.3.2	Corrective Maintenance Work Order Documentation	Customer Service	Responsiveness to Customer Service calls	Provide personnel to immediately receive, schedule, coordinate and initiate work order responses to trouble calls and real-time support requirements 24 hours per day, 7 days per week.
4.3.2	Corrective Maintenance Work Order Documentation	Routine Trouble Calls	Responsiveness to Customers	Response time to RTCs shall be within two (2) hours following notification of the call for both core and non-core working hours
4.3.2	Corrective Maintenance Work Order Documentation	Customer Service	Responsiveness to Customers	Provide an informal response to questions within 2 hours of receipt from the customer as to the status of any CM work.
4.3.2	Corrective Maintenance Work Order Documentation	Customer Service	Responsiveness to Customers	Notify the CM requester by telephone or electronic mail of the work status within two working days from initial receipt for all emergency and urgent calls, and then shall provide automated notification to the CM requester upon completion of CM.
4.4.1	Reliability Centered Maintenance Approach	Evaluation of PM program utilizing RCM philosophy	Increased cost avoidance thru improved PM/CM Program Equipment downtime is minimized	Continuously update PM Plans MAF Missions are not impacted due to equipment availability. Production Critical Equipment availability is 100%.

Section 4.0 MAINTENANCE (cont)

4.6	Maintenance Engineering	Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping.	Develop and utilize root cause analysis techniques consistent with those identified in NPR 8621.1	Within thirty (30) days unless coordinated with the government.
4.7	Pressure Vessels Systems Management	Pressure Vessel Certification Program	Completion of pressure vessel inspections and certification	Complete 100% inspections and certification of pressure vessel systems per scheduled date verified through the CMMS. No pressure vessel failures.
4.8	Other Maintenance Activities	Emergency Response Support	Provide a Damage Assessment Review Team	Within 24 hours of the "Weather Safe" call.

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Section 5.0 SITE SERVICES				
SECTION	SECTION TITLE	WORK TOPIC	PERFORMANCE MEASURE	PERFORMANCE STANDARD
5.1	Food Services	Customer Service	Customer Service Complaints	No more than 5 complaints/month
5.1	Food Services	Audits and Compliance	NASA/MSFC/MAF and Louisiana Health Regulatory Compliance	90 percent or above compliance rating achieved monthly and immediate correction of deficiencies found during inspections.
5.1	Food Services	Customer Service	Diversity of menus	Minimum of quarterly rotation of 4 weekly menus (e.g., entrees).
5.1	Food Services	Food Service Operation	Develop a pricing schedule with respect to economy of scale and net margin goal	Maintain a net margin goal within +/- 5% of monthly gross sales and + 5.0 / - 1.5 % of annual sales.
5.2	Mail Services	Receive and deliver U.S. Postal and internal NASA mail	Receipt and delivery timeliness	<p>Process all outgoing mail designated for the United State Postal Service (USPS) daily before 2:45 p.m. except holidays and weekends.</p> <p>Deliver incoming USPS mail within 8 normal duty hours of receipt. Misdelsivered mail (wrong recipient or non-delivery) shall not exceed 2 customer complaints per month.</p> <p>Deliver incoming internal mail no later than the next normal duty day.</p>
5.2	Mail Services	Mail Processing	Quality of Service	Process all mail in accordance with USPS specifications.
5.2	Mail Services	Customer Service	Instances of lost or damaged mail	No instances of lost or damaged mail while in Contractor possession.
5.3	Custodial Services	Special Events	Schedule / Timeliness	Manage special events to ensure there are no impacts to event time/date.
5.8	Pest Control	Preventive Pest Control Methodology	Customer Complaints to WCC about pest complaints	No more than 10 pest complaints in a thirty (30) day period
5.8	Pest Control	Maintain compliance with applicable state and federal laws	Audits	No fines or penalties associated with Pest Control activities.

Section 6.0 SITE OPERATIONS

SECTION	SECTION TITLE	WORK TOPIC	PERFORMANCE MEASURE	PERFORMANCE STANDARD
6.3	Power Plant Operations	Equipment Operations	Timeliness of Operations Equipment Monitoring	Monitor equipment every four hours

Section 7.0 LOGISTICS OPERATIONS SERVICES

SECTION	SECTION TITLE	WORK TOPIC	PERFORMANCE MEASURE	PERFORMANCE STANDARD
7.2	Inventory and Material Management	Stock items	Timeliness/quality of Service	<p>For Critical spares, generate purchases when items are in reorder status within 2 working days of notice.</p> <p>For non-critical spares, generate purchases when items are in reorder status or new request within 5 working days of notice</p> <p>Stock numbers are assigned accurately.</p>
7.2	Supply and Material Management	Government Compliance	Audits	No major finding or discrepancies per NPR 4100
7.4	Receiving and Inspection	Receipt of overnight packages	Timeliness	<p>From receipt of package to delivery: Overnights - 100% same day delivery. All others - 95% within 3 normal duty days (Includes items properly stage for pick-up or delivery to customer location).</p>
7.4	Receiving and Inspection	Accuracy of customer documentation	Quality	<p>Incorrect/incomplete addressed items actively researched to identify customer and documented within 3 normal duty days of receipt and delivered within 5 normal duty days.</p> <ul style="list-style-type: none"> • All visible external damage detected and documented for packages of received goods. • Loss and damage claims prepared within 7 normal duty days of delivery.

Section 7.0 LOGISTICS OPERATIONS SERVICES (cont)

7.5	Packaging and Shipping Operations	Government Compliance	Meet Department of Transportation (State & Federal) requirements for shipping of goods and hazardous material.	Shipping Operations: <ul style="list-style-type: none"> 90% priority shipments requiring next day delivery service, received before 2:00 p.m. will be packaged & shipped the same day (excluding shipments containing hazardous materials, international shipments, or items that require extensive packaging). Less than 3% of items damaged or lost as result of packing and crating. 98% accuracy of documentation and data.
SECTION	SECTION TITLE	WORK TOPIC	PERFORMANCE MEASURE	PERFORMANCE STANDARD
7.6	Vehicle Management Operations	Passenger Shuttle Service Schedule	Timeliness	Ensure Shuttle Service depart no later than 2 minutes after the scheduled pick-up times along the identified route.
7.6	Vehicle Management Operations	Customer Service	Timeliness/quality of Personnel Transport Service	Waiting time shall not exceed fifteen (15) minutes with clean equipment operated by courteous, knowledgeable, uniformed personnel.
7.6	Vehicle Management Operations	Customer Service	Timeliness/quality of Group Transport Service	Meet customer's requirements with clean and correct size vehicle operated by courteous, knowledgeable, uniformed personnel.
7.6	Vehicle Management Operations	Customer Service	Timeliness/quality of Temporary Duty (TDY) Service	Meet customer's requirements with clean, correct size vehicle, fully fueled.
7.6	Vehicle Management Operations	Customer Service	Timeliness of fuel distribution	Waiting time shall not exceed ten minutes for fuel operations and support
7.6	Vehicle Management Operations	GSA responsiveness	Timeliness	Meet the GSA schedule for vehicle transport for warranty and maintenance work by others.
7.7	Moving and Hauling Services	Personnel moves	Timeliness	Complete 100% of personnel moves per coordinated schedule.
7.7	Moving and Hauling Services	Special event moves	Timeliness	Complete 100% of work (including set-up and breakdown) per agreed to schedule.
7.7	Moving and Hauling Services	Customer Property moves	Timeliness	Complete 100% of moves as follows: routine moves within 2 normal duty days of receipt of request; and expedited moves completed per request from customer.

Section 8.0 SUSTAINING ENGINEERING				
SECTION	SECTION TITLE	WORK TOPIC	PERFORMANCE MEASURE	PERFORMANCE STANDARD
8.1.2	Construction of Facilities	CoF Master Schedules	Timeliness	CoF Master Schedules shall be updated within 10 days of Government concurrence.
8.1.3	Engineering Assessments	Response to Engineering Assessments	Timeliness	Provide response to Government engineering assessment requests within 10 days. Response should include assessment and any cost data.
8.1.3	Engineering Assessments	Design Criteria Statements (DCSs) /Design Criteria Plans (DCPs)	Timeliness	Provide a revised DCS within seven days and DCP within sixty (60) days if construction costs increase over plan. Notify the Government and responsible construction project manager immediately by e-mail as to the new construction project cost-estimate and the reason for the change.
8.1.4	Space Utilization	Facilities Utilization Layout (FUL)	Timeliness	Update the Facilities Utilization Layout (FUL)/Floor Plans within 10 working days of office modifications/personnel moves and thirty (30) days for other (manufacturing, warehouse, support facilities) utilization changes.
8.2.1	Drawing and Software Configuration Control	Updates to Drawings and Software	Timeliness	Perform revisions to configuration drawings or documents within 180 days of physical change to facilities, systems, equipment, and utilities (FSEU). Maintain records to show date of physical change to FSEU and date associated changes incorporated into configuration control drawings.
8.2.1	Drawing and Software Configuration Control	User Configuration Support	Quality	Assure accurate copies of software and FSEU drawings/documents specific to User configuration for shared manufacturing support facilities are available to unit operations manager (UOM) for proper User configuration.
8.2.1	Drawing and Software Configuration Control	Local and CoF Final Construction Cost Estimates	Cost Control	Construction cost-estimates shall be within 15 percent (local projects greater than \$25,000) and 10% (CoF projects) of the final negotiated construction cost, as negotiated by the MSFOC with the construction contractor.

Section 8.0 SUSTAINING ENGINEERING (cont)

SECTION	SECTION TITLE	WORK TOPIC	PERFORMANCE MEASURE	PERFORMANCE STANDARD
8.3.2	Construction Cost Estimates	Design Support Estimates	Timeliness	Contractor will provide construction cost estimates for CoF (required at the 30%, 60%, 90% and 100% design stages) and local projects (minimum of one review). Construction cost estimates will be available for each scheduled design review.

Section 9.0 ENVIRONMENTAL SERVICES

SECTION	SECTION TITLE	WORK TOPIC	PERFORMANCE MEASURE	PERFORMANCE STANDARD
9.2	Air Emission Management	Manage Air Program to ensure compliance with applicable regulations	Quality/Timeless	All compliance documents are complete, accurate, maintained, and readily accessible. No Fines or Penalties. No notice of violations or other deficiencies.
9.3	Wastewater and Stormwater Management	Manage Water and Storm Water Program to ensure compliance with applicable regulations	Quality/Timeliness	All compliance documents are complete, accurate, maintained, and readily accessible. No Fines or Penalties. No notice of violations or other deficiencies.
9.4	Waste Management	Hazardous Waste Disposal – Building 159	Timeliness of disposal	Complete 100% of hazardous material disposal within 1 calendar year.
9.4	Waste Management	Manage Waste Program to ensure compliance with applicable regulations	Quality/Timeliness	All compliance documents are complete, accurate, maintained, and readily accessible. No Fines or Penalties. No notice of violations or other deficiencies.
9.4	Waste Management	Manage PCB Program to ensure compliance with applicable regulations	Quality/Timeliness	All compliance documents are complete, accurate, maintained, and readily accessible. No Fines or Penalties. No notice of violations or other deficiencies.
9.5	Hazardous Waste Operations	Hazardous Waste Storage Facility (HWSF) Operations	Timeliness of HWSF inspections	Every 7 calendar days
9.5	Hazardous Waste Operations	Hazardous Waste Storage	Timeliness of less than 90-day storage areas inspections	Every 7 calendar days.
9.5	Hazardous Waste Operations	Hazardous Waste Storage	Timeliness of Container pickup and issue	Within forty-eight (48) hours of request
9.5	Hazardous Waste Operations	Hazardous Waste Storage	Quality	No notice of violation or other deficiencies; properly labeled containers; materials segregated properly

Section 9.0 ENVIRONMENTAL SERVICES

SECTION	SECTION TITLE	WORK TOPIC	PERFORMANCE MEASURE	PERFORMANCE STANDARD
9.6	Spill Response and Clean-Up	Report/Respond to Non-Hazardous and Hazardous Material, Waste and Chemical Spills;	Timeliness	<p>Report Spill Incident immediately or within thirty (30) minutes of awareness to MAF Environmental Office.</p> <p>Upon Notification, immediately mobilize response team</p> <p>Provide data needed to the MAF Environmental Office, or designee, for NASA's official notification of EPA's National Response Center (NRC) and LDEQ, or appropriate State/Governmental Agencies of an incident</p> <p>Within 24 hours of Spill, provide copies of completed Spill Incident Report, which incorporates information from personnel responsible for the area of the spill.</p>

Section 10.0 CONSTRUCTION MANAGEMENT

SECTION	SECTION TITLE	WORK TOPIC	PERFORMANCE MEASURE	PERFORMANCE STANDARD
10.1.1	Construction Project Management	Manage project within schedule	Timeliness	Complete 100% of FY local projects within government approved schedules.
10.1.1	Construction Project Management	Manage project within budget	Actual Cost	Perform Local Project construction within annual budget allocations.
10.1.1	Construction Project Management	Manage project to satisfy customer	Quality	Local project meets or exceeds established project/user requirements.
10.1.2	Authorization	Obtain project authorization	Timeliness	Conformance with DR. Submittal/approval of local project 1509's prior to start of construction.
10.2.1	Construction Project Management	Manage project within schedule	Timeliness	"Flash Bid Report" submitted to the Government within 5 working days of receipt of bids. Complete all FY CoF projects within Government approved Master Schedules.
10.2.1	Construction Project Management	Manage project within budget	Cost	Complete approved project scope within 10% of NASA approved project budget.
10.2.1	Construction Project Management	Manage project to satisfy customer	Quality	C of F project meets or exceeds established project/user requirements.
10.2.2	Schedules	Obtain project authorization	Timeliness	Submittal of NASA forms 1509/1510 within 10 working days of 60% design complete.
10.1.4, 10.2.4	Project Execution	Final project inspection	Timeliness	Notify Government and other appropriate Government contractors of final job inspection readiness within 10 days of construction complete. Prepare and submit to Government discrepancy report within five working days of inspection.
10.1.4, 10.2.4	Project Execution	Project close-out	Timeliness	Project close-out documentation shall be prepared and a copy submitted to the Government within 5 working days of project acceptance by the Government.

**MANUFACTURING SUPPORT AND FACILITIES OPERATIONS
CONTRACT (MSFOC) NNM09AA20C**

ATTACHMENT J-1-B

Performance Timetables

Section 1.0 Management				
PWS SECTION	PWS TITLE	Work Topic	DOCUMENT	PERFORMANCE FREQUENCY
1.2.1	Work Management	Outage Coordination	Outage Approvals	Outage approvals obtained 2 weeks in advance of outage.
1.2.1	Work Management	Immediately receive, schedule, coordinate, and initiate MSFOC responses to trouble calls and real-time support	MSFOC PWS	Support is required 24 hours per day, 7 days per week

Section 2.0 Safety & Health				
PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
2.1	Industrial Safety Program	OSHA Safety Compliance Inspections	29 CFR Part 1960.25 (c), NPR 8715.3 MWI 8715.12,	Annually; Audit in accordance with Basic Program Elements for Federal Employee Occupational Safety and Health Program and Related Matters and, NASA General Safety Program Requirements, Chapter 1 and Safety, Health, and Environmental-Finding Tracking System (SHetrak) of all local NASA owned or occupied facilities.
2.1	Industrial Safety Program	Operations Safety Compliance of Operations	29 CFR Part 1960.25(c).	Semi-Annual inspection of test facilities, laboratories, industrial facilities and equipment
2.1	Industrial Safety Program	OSHA safety compliance inspections	29 CFR	Weekly inspections of areas assigned at MAF
2.2.1	Occupational Health Services	Hours of Operations for Physician Services	MSFOC PWS	6:00 a.m. To 3:00 p.m., Monday through Friday.
2.2.1	Occupational Health Services	Hours of Operations for EMT / Ambulance Services	MSFOC PWS	24 hours each day, 7 days a week
2.2.2	Occupational Health Services	Workplace Health Inspections	MSFOC PWS	Annual workplace inspections to address occupational issues in facilities; surveys, studies, investigations, and follow-up to identify, evaluate, and control chemical, physical, or biological agents. Determine compliance with applicable rules and regulations for personnel exposure to such agents
2.3	Emergency Management	Hurricane Inspections	Emergency Operating Plan	Conduct Monthly site inspections between May 1 and December 1 to determine hurricane readiness

Section 3.0 Manufacturing Support				
PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
3.1	Integration of Manufacturing Operations	Maintaining the Integrated Manufacturing Support Schedule	Integrated Manufacturing Support Schedule	Weekly - Support informal and formal meetings with representatives from all NASA Projects and MI&O.
3.3	Support of Common Manufacturing Resources	Chemical analysis data and evaluation findings	Findings Report	Weekly
3.3	Support of Common Manufacturing Resources	Managing and operating the Metrology Lab	Standards and Calibration Management Indicator Report	Monthly
3.3	Support of Common Manufacturing Resources	Managing and operating the machine Shop	Work order status, schedules, and estimates relative to the Customer Orders as requested	Monthly
3.3	Support of Common Manufacturing Resources	Review and acceptance of NDE reports by the Government	NDE reports	Submit within 30 days of NDE analysis completion, all examination reports, X-Ray film and film interpretation reports for government NDE-Level-II review and acceptance
3.5	Contamination and Foreign Object Debris (FOD) Program	Prevention Team meeting	Meeting Minutes	Conduct Contamination Control and FOD Prevention Team meetings on a monthly basis, and bi-weekly if FOD incident performance standards are exceeded

Section 4.0 Maintenance				
PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
4.3	Corrective Maintenance	Provide personnel to immediately receive, schedule, coordinate and initiate work order responses to trouble calls and real-time support requirements	CMMS Work Order	24 hours per day, 7 days per week

Section 5.0 Site Services				
PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.2	Mail Services	Mail Services	MSFOC PWS	Perform mail services during working hours of 7:00 a.m. – 4:00 p.m.
5.3	Custodial Services	Lobbies (Bldg. 101 & 350	Standard Cleaning Procedures	Daily- Vacuum entranceways and walk-off runners
				Daily - Vacuum carpeted areas
				Weekly- Dust desk and tables
				Daily- Empty trash containers and install new liners
				Daily- Dust mop and sweep floors
				As required daily- Clean all spillage or unsafe conditions
				See restroom details- Restrooms
				Monthly- Wet extraction clean and pile-lift carpet
				Quarterly- Strip, scrub, and apply new wax
				Quarterly- Clean windows inside and outside
				Daily- Clean glass doors inside and outside

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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.3	Custodial Services	Building Entry Points	Standard Cleaning Procedures	Daily- Sweep, wet mop and disinfect floors – including corners and areas around partition posts
				Weekly- Clean base boards
				Quarterly- Strip, scrub, and apply new sealer
5.3	Custodial Services	Main Traffic Hallways	Standard Cleaning Procedures	Daily- Vacuum carpet
				As required daily- Clean carpet stains
				Quarterly- Wet extraction cleaning and pile lift carpet *

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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.3	Custodial Services	Restroom Floors & Baseboards	Standard Cleaning Procedures	Daily- Sweep, wet mop and disinfect floors – including corners and areas around partition posts
				Weekly- Clean base boards
				Quarterly- Strip, scrub, and apply new sealer
	Custodial Services	Restroom Fixtures	Standard Cleaning Procedures	Daily- Clean washbasins, faucets and sinks
				Daily- Clean commodes and urinals
				Daily- Clean and restock dispensers
				Daily- Clean mirrors
	Custodial Services	Restroom Walls and Ceiling	Standard Cleaning Procedures	Weekly- Scrub and disinfect partitions and walls
				Weekly or as needed- Remove graffiti
	Custodial Services	Restroom Trash Containers	Standard Cleaning Procedures	Daily- Empty and install new liners
				Weekly- Clean and disinfect

PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.3	Custodial Services	Canteens	Standard Cleaning Procedures	Daily- Clean and sanitize all tables, counters and chairs
				As required daily- Clean food and drink spillage
				Daily- Damp mop and disinfect floors
				Daily- Sweep/vacuum floors
				Monthly- Buff and spray wax
				Quarterly- Strip and resurface
				Quarterly- Clean behind vending machines
			Standard Cleaning Procedures	Daily- Empty trash and change liners
				Weekly- Sanitize trash containers
	Custodial Services	General Meeting Areas	Standard Cleaning Procedures	As required weekly- Clean all tables and chairs
			Standard Cleaning Procedures	3 times a week or as needed- Vacuum floors
			Standard Cleaning Procedures	As required daily- Clean carpet stains
			Standard Cleaning Procedures	Quarterly- Wet extraction cleaning and pile lift carpet
			Standard Cleaning Procedures	Daily- Clean trash containers and replace liners

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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.3	Custodial Services	General Office Areas as Specified -Carpet	Standard Cleaning Procedures	Weekly- Vacuum carpet
			Standard Cleaning Procedures	As required daily- Clean carpet stains
			Standard Cleaning Procedures	Quarterly- Wet extraction cleaning and pile lift carpet
	Custodial Services	Hard Surface Floors	Standard Cleaning Procedures	3 times a week- Dust mop & Sweep
			Standard Cleaning Procedures	Weekly- Wet mop
			Standard Cleaning Procedures	As required daily- Clean spillage
			Standard Cleaning Procedures	Monthly- Buff and spray wax
			Standard Cleaning Procedures	Quarterly- Strip and resurface
	Custodial Services	Trash Containers	Standard Cleaning Procedures	Manufacturing Areas empty daily. All other areas empty twice per week.
			Standard Cleaning Procedures	Replace trash bags in the Manufacturing Areas daily. All other areas replace twice per week.
	Custodial Services	Stairwells	Standard Cleaning Procedures	Weekly- Vacuum/sweep and dust
			Standard Cleaning Procedures	Weekly- Mop
			Standard Cleaning Procedures	As required daily- Clean spillage
			Standard Cleaning Procedures	Weekly- Clean and disinfect handrails, doors, door frames, and door access hardware
	Custodial Services	Hallways/Traffic Areas	Standard Cleaning Procedures	Daily- Vacuum
			Standard Cleaning Procedures	Quarterly- Wet extraction clean and use pile lifter
	Custodial Services	Dust and Spider Web Removal	Standard Cleaning Procedures	Quarterly- Window ledges and blinds

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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.3	Custodial Services	Executive Areas - Bldgs. 101, 102, 320, and 350	Standard Cleaning Procedures	Quarterly- High and low surfaces (cabinet tops and partition top rails)
			Standard Cleaning Procedures	Once a year- Ceiling air supply diffusers
			Standard Cleaning Procedures	Twice a year- Wall air return diffusers
			Standard Cleaning Procedures	Once a year- Ceiling light fixtures
			Standard Cleaning Procedures	Daily- Clean executive coffee area
			Standard Cleaning Procedures	Daily- Clean offices and conference rooms
			Standard Cleaning Procedures	Daily- Dust desks and tables
			Standard Cleaning Procedures	Daily- Vacuum carpet
			Standard Cleaning Procedures	Daily- Empty trash containers
			Standard Cleaning Procedures	Daily- Provide additional services as requested
			Standard Cleaning Procedures	Quarterly- Wet extraction clean and pile lift carpet

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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.3	Custodial Services	Dining Areas and Serving Line Areas (102 and 351 Cafeteria) Tile Areas	Standard Cleaning Procedures	After each meal- Sweep and remove spills from tiled floors in serving line and dining areas
			Standard Cleaning Procedures	Daily- Sweep and mop tile floors after lunch
			Standard Cleaning Procedures	Weekly- Scrub tile floors to remove built up dirt and buff
			Standard Cleaning Procedures	Quarterly- Strip, scrub, and apply new sealer
	Custodial Services	Cafeteria -Carpeted Areas	Standard Cleaning Procedures	After each meal- Remove trash and spot clean spills from floors
			Standard Cleaning Procedures	Daily- Vacuum carpets
			Standard Cleaning Procedures	Quarterly- Wet extraction clean and pile lift carpet
	Custodial Services	Cafeteria - Walls	Standard Cleaning Procedures	Weekly- Clean walls around trash containers
			Standard Cleaning Procedures	Monthly- Spot clean walls to ceiling level and remove cobwebs
	Custodial Services	Cafeteria - Other	Standard Cleaning Procedures	Monthly or as needed- Clean, disinfect, and dust all other dining room furniture, including planters
	Custodial Services	Cafeteria - Offices	Standard Cleaning Procedures	Daily- Remove trash and install new liner
			Standard Cleaning Procedures	Weekly- Vacuum carpets
			Standard Cleaning Procedures	Quarterly- Wet extraction clean and pile lift carpet

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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.3	Custodial Services	Cafeteria - Windows	Standard Cleaning Procedures	Annually or as needed- Clean interior side of glass exterior glass wall windows. (Exterior to be cleaned in Roads & Grounds section of PWS) Bldg. 351 Cafeteria: Inside - 4,600 sq. ft. Outside - 4,800 sq. ft.
			Standard Cleaning Procedures	Weekly- Clean inside and outside of glass doors and windows in entry/exit doors. Bldg. 102 (total inside and out): 48 sq. ft. Bldg. 351 (total inside and out): 820 sq. ft

Contract NNM09AA20C

PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.3	Custodial Services	Bldg. 351 Executive Dining Room - Floors	Standard Cleaning Procedures	Daily or as needed- Vacuum and spot clean
			Standard Cleaning Procedures	Quarterly- Wet extraction clean and pile lift
	Custodial Services	Executive Dining Room - Walls and Ceilings	Standard Cleaning Procedures	As needed before scheduled events- Spot clean walls and remove cobwebs
	Custodial Services	Executive Dining Room - Windows	Standard Cleaning Procedures	Annually or as needed- Clean interior side of glass exterior glass wall windows. (Exterior to be cleaned by Roads & Grounds group or subcontractor) Bldg. 351 Cafeteria: Inside: - 4,600 sq. ft. Outside: - 4,800 sq. ft.
			Standard Cleaning Procedures	Weekly- Clean inside and outside of glass doors and windows in entry/exit doors. Bldg. 102 (total inside and out): 48 sq. ft. Bldg. 351 (total inside and out): 820 sq. ft
	Custodial Services	Executive Dining Room -Seating	Standard Cleaning Procedures	As needed- Clean upholstered chairs before scheduled event

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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.3	Custodial Services	351 East Side and Bldg & 102 Special Event Rooms and Storage Areas - Carpeted Areas	Standard Cleaning Procedures	Weekly or as needed- Vacuum and spot clean
			Standard Cleaning Procedures	Quarterly- Wet extraction clean an pile lift carpet
	Custodial Services	Tiled Areas	Standard Cleaning Procedures	Weekly or as needed- Sweep and wet mop
	Custodial Services	Walls and Ceilings	Standard Cleaning Procedures	Monthly or as needed- Spot clean walls and remove cobwebs
5.3	Custodial Services	Medical Clinic	Standard Cleaning Procedures	Daily- Vacuum carpet
			Standard Cleaning Procedures	Monthly- Wet extraction clean carpet and use pile lifter
			Standard Cleaning Procedures	Daily- Dust desks and tables
			Standard Cleaning Procedures	Daily- Wet mop and disinfect floors
			Standard Cleaning Procedures	Twice a month- Buff and spray wax floor
			Standard Cleaning Procedures	Quarterly- Strip, scrub, and resurface floors
			Standard Cleaning Procedures	Daily- Empty trash baskets
			Standard Cleaning Procedures	Weekly- Empty bio-medical trash
			Standard Cleaning Procedures	See restroom schedule- Clean restrooms

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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.3	Custodial Services	Fitness Training Facility –Weight Room	Standard Cleaning Procedures	3 times a week- Vacuum and disinfect carpet
			Standard Cleaning Procedures	Monthly- Wet extraction clean carpet and use pile lifter
			Standard Cleaning Procedures	Daily- Damp wipe and disinfect equipment
			Standard Cleaning Procedures	Daily- Empty trash baskets and install new liners
			Standard Cleaning Procedures	Daily- Clean mirror walls
5.3	Custodial Services	Showers and Locker Room – Floors and Baseboards	Standard Cleaning Procedures	Daily- Sweep, wet mop, and disinfect floors
			Standard Cleaning Procedures	Weekly- Clean baseboards
			Standard Cleaning Procedures	Monthly- Strip, scrub, and apply new sealer
	Custodial Services	Showers	Standard Cleaning Procedures	Daily- Clean faucets
			Standard Cleaning Procedures	Daily- Clean walls and floors
			Standard Cleaning Procedures	Weekly- Clean and sanitize shower curtains
	Custodial Services	Walls and Ceilings	Standard Cleaning Procedures	Twice a year- Replace shower curtains
			Standard Cleaning Procedures	Weekly- Damp wipe down and disinfect walls
	Custodial Services	Trash Containers	Standard Cleaning Procedures	Daily- Empty and install new liners
			Standard Cleaning Procedures	Weekly- Clean and disinfect
	Custodial Services	Lockers	Standard Cleaning Procedures	Weekly- Spray disinfect inside

Contract NNM09AA20C

PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.3	Custodial Services	Lockers	Standard Cleaning Procedures	Monthly- Damp wipe and disinfect inside
	Custodial Services	Restrooms	Standard Cleaning Procedures	See restroom schedule- Clean restrooms
5.3	Custodial Services	Vertical Assembly and High Bay Bldgs. 110 and 114 - Hard Surface Floors Sealed Concrete	Standard Cleaning Procedures	Daily- Dust mop
			Standard Cleaning Procedures	Daily- Remove debris
			Standard Cleaning Procedures	Weekly- Wet mop
			Standard Cleaning Procedures	Twice a year- Seal floors
	Custodial Services	Hard Surface Floors - New Epoxy Coated	Standard Cleaning Procedures	Daily- Remove debris
			Standard Cleaning Procedures	Daily- Wet mop aisleways (automatic scrubber - 1st shift)
	Custodial Services	Hard Surface Floors – Tiled	Standard Cleaning Procedures	Daily- Dust mop
			Standard Cleaning Procedures	Weekly- Wet mop
			Standard Cleaning Procedures	As required Daily- Clean any spillage
			Standard Cleaning Procedures	Twice a month- Buff and spray wax
			Standard Cleaning Procedures	Quarterly- Strip, scrub and resurface
	Custodial Services	Trash Containers	Standard Cleaning Procedures	Daily- Empty trash containers and install new liners
	Custodial Services	Building Entry Points	Standard Cleaning Procedures	Daily- Vacuum or sweep walk-off mats
			Standard Cleaning Procedures	Daily- Dust mop
			Standard Cleaning Procedures	Daily- Clean glass doors inside and outside

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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.3	Custodial Services	Major Traffic Walkways and Hallways (~ 28,000 sf)	Standard Cleaning Procedures	Daily- Dust mop (if concrete)
			Standard Cleaning Procedures	None- Dust mop (if new epoxy)
			Standard Cleaning Procedures	Daily- Remove debris
			Standard Cleaning Procedures	Weekly- Wet mop (if concrete)
			Standard Cleaning Procedures	Daily- Wet mop (if new epoxy floor)
			Standard Cleaning Procedures	Twice a year- Seal floors (if concrete)
	Custodial Services	Stairwell and Platforms (~7,900 sf)	Standard Cleaning Procedures	Weekly- Sweep and wet mop
	Custodial Services	Service Towers (27,000 sf)	Standard Cleaning Procedures	Weekly- Sweep and wet mop
	Custodial Services	Spillage	Standard Cleaning Procedures	As required daily- Remove spillage
	Custodial Services	Restrooms and Canteens	Standard Cleaning Procedures	See restroom details- Restrooms
			Standard Cleaning Procedures	See canteen details- Canteens
	Custodial Services	Dust and Spider Web Removal	Standard Cleaning Procedures	Quarterly- High and low surfaces (cabinet tops and partition top rails), aisle fencing, and barricades
			Standard Cleaning Procedures	Annually - Interior side of building exterior walls
			Standard Cleaning Procedures	As requested- Tops of interior structures
5.3	Custodial Services	Factory Production Areas as Specified in Section - Sealed Concrete	Standard Cleaning Procedures	Daily- Dust mop
			Standard Cleaning Procedures	Daily- Remove debris
			Standard Cleaning Procedures	Weekly- Wet mop
			Standard Cleaning Procedures	As required daily- Clean any spillage

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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.3	Custodial Services	Factory Production Areas as Specified in Section - Sealed Concrete	Standard Cleaning Procedures	Twice a year- Seal floors
	Custodial Services	New Epoxy Coated	Standard Cleaning Procedures	Daily- Dust mop
			Standard Cleaning Procedures	Daily- Remove debris
			Standard Cleaning Procedures	Weekly- Wet mop
			Standard Cleaning Procedures	As required daily- Wet mop
			Standard Cleaning Procedures	Twice a year- Seal floors
	Custodial Services	Tiled Areas	Standard Cleaning Procedures	Daily- Seal floors
			Standard Cleaning Procedures	Weekly- Wet mop
			Standard Cleaning Procedures	As required daily- Clean any spillage
			Standard Cleaning Procedures	Twice a month- Buff and spray wax
			Standard Cleaning Procedures	Quarterly- Strip, scrub and resurface
	Custodial Services	Trash Containers	Standard Cleaning Procedures	Daily- Empty trash containers and install new liners
			Standard Cleaning Procedures	Weekly- Clean large trash containers inside and outside
			Standard Cleaning Procedures	Monthly- Pressure wash and disinfect dumpsters (approximately 12) inside and out

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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.3	Custodial Services	Building Entry Points	Standard Cleaning Procedures	Daily- Vacuum or sweep walk-off mats
			Standard Cleaning Procedures	Daily- Dust mop
			Standard Cleaning Procedures	Weekly- Clean glass doors inside and outside
			Standard Cleaning Procedures	As required daily- Clean any spillage
	Custodial Services	Major Traffic Walkways and Hallways (~ 350,000sf)	Standard Cleaning Procedures	Daily- Dust mop
			Standard Cleaning Procedures	Daily- Dust mop
			Standard Cleaning Procedures	Weekly- Wet mop
			Standard Cleaning Procedures	As required daily- Clean any spillage
	Custodial Services	Stairwells	Standard Cleaning Procedures	Daily- Sweep
			Standard Cleaning Procedures	Weekly- Wet mop
	Custodial Services	Spillage	Standard Cleaning Procedures	As required daily- Remove spillage
	Custodial Services	Dust and Spider Web Removal	Standard Cleaning Procedures	Quarterly- High and low surfaces (cabinet tops and partition top rails), aisle fencing, and barricades
			Standard Cleaning Procedures	Annually - Interior side of building exterior walls
			Standard Cleaning Procedures	As requested- Tops of interior Mezzanines and other structures
	Custodial Services	Restroom & Canteens	Standard Cleaning Procedures	See restroom details- Restrooms
			Standard Cleaning Procedures	See canteen details- Canteens

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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.3	Custodial Services	General Office Areas in Factory Areas	Standard Cleaning Procedures	See Office Area Details- Carpet Hard Surface Floors Trash Containers Stairwells Hallways/Traffic Areas Dust and spider web removal Spillage
5.3	Custodial Services	Machine Shop (Bldg. 103) - Hard Surface Floors	Standard Cleaning Procedures	Daily- Sweep or dry mop and pick up shavings
			Standard Cleaning Procedures	Twice a year- Wet clean and resurface floors
	Custodial Services	Trash Containers	Standard Cleaning Procedures	Daily- Empty trash containers
	Custodial Services	Spillage	Standard Cleaning Procedures	As required daily- Clean all spillage
5.3	Custodial Services	Other Buildings as specified in PWS section - Sealed Concrete	Standard Cleaning Procedures	Weekly- Dust mop
			Standard Cleaning Procedures	Daily- Remove debris
			Standard Cleaning Procedures	Monthly- Wet mop
			Standard Cleaning Procedures	As required daily- Clean any spillage
			Standard Cleaning Procedures	Twice a year- Seal floors
	Custodial Services	Tiled Areas	Standard Cleaning Procedures	Weekly- Dust mop or sweep
			Standard Cleaning Procedures	Twice a month- Wet mop
			Standard Cleaning Procedures	As required daily- Clean any spillage

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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.3	Custodial Services	Tiled Areas	Standard Cleaning Procedures	Quarterly- Strip, scrub and resurface
	Custodial Services	Trash Containers	Standard Cleaning Procedures	Daily- Empty trash containers and install new liners
	Custodial Services	Building Entry Points	Standard Cleaning Procedures	Daily- Vacuum or sweep walk-off mats
			Standard Cleaning Procedures	Daily- Dust mop or sweep
			Standard Cleaning Procedures	As required daily- Clean spillage
			Standard Cleaning Procedures	Weekly- Clean glass doors inside and outside
			Standard Cleaning Procedures	Twice a year- Seal floors (if concrete)
	Custodial Services	Walkways and Hallways (~ 350,00 sf)	Standard Cleaning Procedures	Daily- Dust mop
			Standard Cleaning Procedures	Daily- Remove debris
			Standard Cleaning Procedures	Weekly- Wet mop
			Standard Cleaning Procedures	As required daily- Clean any spillage
			Standard Cleaning Procedures	Twice a year- Seal floors (if concrete)
			Standard Cleaning Procedures	Quarterly- Strip, scrub and resurface (if tile)
	Custodial Services	Stairwells	Standard Cleaning Procedures	Weekly- Sweep and wet mop
	Custodial Services	Spillage	Standard Cleaning Procedures	As required daily- Remove spillage
	Custodial Services	Dust and Spider Web Removal	Standard Cleaning Procedures	Quarterly- Window ledges and blinds

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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.3	Custodial Services	Dust and Spider Web Removal	Standard Cleaning Procedures	Quarterly- High and low surfaces (cabinet tops and railings)
			Standard Cleaning Procedures	Annually- Interior of building exterior walls
	Custodial Services	Restrooms and Canteens	Standard Cleaning Procedures	See restroom details- Restrooms
			Standard Cleaning Procedures	See canteen details- Canteens
	Custodial Services	General Office Areas Located Within a Buildings	Standard Cleaning Procedures	See Office Area Details-
				Carpet Hard Surface Floors Trash Containers Stairwells Hallways/Traffic Areas Dust and spider web removal Spillage
5.3	Custodial Services	Environmentally Controlled Areas (Daily Cleaning) - Final Clean Area	Standard Cleaning Procedures	Daily- Table Tops *
			Standard Cleaning Procedures	Daily- Work surfaces *
			Standard Cleaning Procedures	Daily- Cabinet tops, sides and shelves *
			Standard Cleaning Procedures	Daily- Pass through windows *
			Standard Cleaning Procedures	Daily- Empty trash can and vacuum
			Standard Cleaning Procedures	Daily- Vacuum floors

PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.3	Custodial Services	Test Area	Standard Cleaning Procedures	Daily- Table Tops *
			Standard Cleaning Procedures	Daily- Work surfaces *
			Standard Cleaning Procedures	Daily- Cabinet tops, sides and shelves *
			Standard Cleaning Procedures	Daily- Pass through windows *
			Standard Cleaning Procedures	Daily- Empty and vacuum trash cans**
			Standard Cleaning Procedures	Daily- Vacuum floors**
	Custodial Services	Hall and Air Shower	Standard Cleaning Procedures	Daily- Vacuum floors**
	Custodial Services	Labs	Standard Cleaning Procedures	Daily- Table Tops**
5.3	Custodial Services	Environmentally Controlled Areas (Weekly Cleaning) – Test Area	Standard Cleaning Procedures	Weekly- Wash table tops, work surfaces, benches and cabinets with Windex solution and lint free wiping cloth and rinse.
			Standard Cleaning Procedures	Weekly- Wash windows and floors
			Standard Cleaning Procedures	Weekly- Roll or vacuum walls and ceilings.
	Custodial Services	Lab Area	Standard Cleaning Procedures	Weekly- Wash table tops, work surfaces, benches and cabinets with Windex solution and rinse.
			Standard Cleaning Procedures	Weekly- Roll or vacuum walls and ceilings.
	Custodial Services	Entrance Dressing Room	Standard Cleaning Procedures	Weekly- Wash table tops, work surfaces, benches and cabinets with Windex solution and rinse.
			Standard Cleaning Procedures	Weekly- Wash windows

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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.3	Custodial Services	Entrance Dressing Room	Standard Cleaning Procedures	Weekly- Wash floors and rinse
5.3	Custodial Services	Coast Guard Exchange Building 358 - Building Area Hard Surface Floors	Standard Cleaning Procedures	Twice a week- Dust mop
			Standard Cleaning Procedures	Weekly- Damp mop
			Standard Cleaning Procedures	As needed- Clean spillage
			Standard Cleaning Procedures	Twice a month- Buff and spray wax
			Standard Cleaning Procedures	Quarterly- Strip and resurface (All vertical surfaces must be protected during this process – includes furniture, walls, etc.)
	Custodial Services	Building Carpeted Floor	Standard Cleaning Procedures	Twice a week- Vacuum
			Standard Cleaning Procedures	Monthly- Dry Compound Clean
			Standard Cleaning Procedures	As needed- Clean spillage
			Standard Cleaning Procedures	Annually- Hot Steam Extraction Clean
	Custodial Services	Building Waste Removal	Standard Cleaning Procedures	Daily- Empty Waste Containers and install new liners
			Standard Cleaning Procedures	Quarterly- Clean and disinfect waste containers
	Custodial Services	Window/Glass/Mirror and Counter Cleaning	Standard Cleaning Procedures	Daily- Clean inside and outside of glass entry doors and mirrored column
			Standard Cleaning Procedures	Daily- Clean exterior of glass doors and tops of display cabinets and counters

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			Standard Cleaning Procedures	Daily- Clean drink dispenser counter top area and cabinet fronts
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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.3	Custodial Services	Restrooms Fixtures	Standard Cleaning Procedures	Daily- Clean washbasins, faucets and sinks
			Standard Cleaning Procedures	Daily- Clean commodes and urinals
			Standard Cleaning Procedures	Daily- Clean and restock dispensers
			Standard Cleaning Procedures	Daily- Clean mirrors
	Custodial Services	Restroom Walls and Ceiling	Standard Cleaning Procedures	Weekly- Wet wipe and disinfect privacy partitions and walls
			Standard Cleaning Procedures	As needed- Remove graffiti
	Custodial Services	Restroom Trash Containers	Standard Cleaning Procedures	Daily- Clean and disinfect
			Standard Cleaning Procedures	Monthly- Clean and disinfect
5.7	Roads and Grounds Services	Grass Maintenance	Roads and Grounds Services	<p>Grass Cutting Schedule</p> <p>The standard grass cutting season for all areas is planned on a ten month schedule starting February 1st and ending November 30th.</p> <p>During the December and January grass cutting shall occur on an as needed basis. (This time period is good for mowing Area 3 locations.)</p>

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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.7	Roads and Grounds Services	Mowing	Roads and Grounds Services	Grass Cutting Requirements Areas 1 and 2 grass cutting levels shall not be lower than one and a-half (1 1/2) inches or higher than two and one half (2 1/2) inches. Area 3 grass cutting level shall not be lower than three (3) inches or higher than five (5) inches
5.7	Roads and Grounds Services	Line Trimming / Weed Eating	Roads and Grounds Services	Trimming Schedule Line trimming/weed-eating shall be performed in the approved areas each time mowing is taking place and preferably at the same time. (Not more the 24 hours later)
			Roads and Grounds Services	Trimming Requirement Line trimming/weed-eating shall be performed in a manner that cuts the grass blades at approximately the same height as the adjacent mowed area or area being mowed.

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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.7	Roads and Grounds Services	Line Trimming	Roads and Grounds Services	<p>Safety Requirement</p> <p>Safety has established a distance of 50' to 75' that an individual operating a weed eater needs to be from any vehicle while operating a weed-eater unit.</p>
5.7	Roads and Grounds Services	Edging	Roads and Grounds Services	<p>Edging Schedule</p> <p>Edging shall be performed in the approved areas each time mowing is taking place and preferably at the same time. (Not more the 24 hours later)</p>
			Roads and Grounds Services	<p>Edging Requirement</p> <p>The grass edge shall be neat, clean and provide an approximately one-half (½) inch groove that runs along the edge of concrete or pavement surface and is approximately 1 inch in depth.</p>

PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.7	Roads and Grounds Services	Plant Beds/Tree Rings	Roads and Grounds Services	<p>Planting Requirement</p> <p>Plant-beds shall be maintained with a combination of perennial and annual plantings that are colorful and aesthetically pleasing.</p> <p>New annual plantings shall be provided by the Contractor and planted in the spring and fall seasons to promote a colorful appearance to the bed.</p>
			Roads and Grounds Services	<p>Trimming Requirement</p> <p>Perennials shall be trimmed back annually allowing for new growth the following year.</p>
			Roads and Grounds Services	<p>Mulch Requirement</p> <p>Beds shall be receive either natural or rubber mulch either semi-annually or as needed to maintain their overall appearance.</p>
			Roads and Grounds Services	<p>Fertilizer Requirement</p> <p>Plant beds and trees shall receive fertilizer semi-annually.</p>

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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.7	Roads and Grounds Services	Shrubbery	Roads and Grounds Services	<p>Pruning Requirement</p> <p>Younger shrubs shall be pruned only to promote normal development and the removal of damaged or dead limbs.</p> <p>More mature shrubs shall receive annual pruning.</p>
5.7	Roads and Grounds Services	Trees	Roads and Grounds Services	<p>Pruning Requirement</p> <p>Younger trees shall be pruned only to promote normal development and the removal of damaged or dead limbs.</p> <p>More mature trees shall receive annual pruning.</p>
			Roads and Grounds Services	<p>Damage Limbs</p> <p>All broken limbs or debris resulting from strong winds, storms, or other natural causes shall be removed within 72 hours of occurrence. (An additional time period will be allowed for cleanup from damage that is the result of a hurricane.)</p>
5.7	Roads and Grounds Services	Lawn Fertilizer and Weed Control	Roads and Grounds Services	<p>Weed Control</p> <p>Weed control shall occur in all Area 1 and 2 locations as required. Treatment of Area 3 locations shall occur Quarterly (or as requested).</p>

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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.7	Roads and Grounds Services	Potholes	Roads and Grounds Services	Repair Requirement Repair all potholes greater than three inch (3") in diameter and less than twenty (20) square feet in size that are located in parking lots and roadways as they develop (repair with cold mix).
5.7	Roads and Grounds Services	Site Cleanup, Trash Removal, and Policing Areas	Roads and Grounds Services	Trash Can All exterior 55 gal. trash cans shall be emptied twice a week. All trash cans shall have new plastic bag liners installed when emptied. All trash containers shall be cleaned inside and outside and deodorized once a month.

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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.7	Roads and Grounds Services	Site Cleanup, Trash Removal, and Policing Areas	Roads and Grounds Services	<p><u>Debris Removal</u>-All loose debris shall be removed on a daily time period from all Area 1 and 2 locations and properly disposed of in approved disposal containers. (Debris includes paper products, plastic products, cloth products, large rocks, chunks of concrete, glass, wood, metal, tobacco usage remains, etc.)</p> <p>All loose debris shall be removed on an "as required" time period from all Area 3 locations and properly disposed in approved disposal containers. (Debris includes paper products, large rocks, chunks of concrete, plastic products, glass, wood, metal, tobacco usage remains, etc.)</p> <p>All culverts, catch basins, drains and ditches shall be inspected monthly and debris removed on an as required basis.</p> <p>Relocate all discarded wood and non-yellow pallets to Bldg. 409 for recycling weekly or when requested, i.e. hurricane preparation activities and tour preparation activities</p> <p>Relocate cardboard to Bldg. 409 for recycling when requested for hurricane or tour preparation activities.</p>

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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.7	Roads and Grounds Services	Tobacco Debris	Roads and Grounds Services	<p>Tobacco Requirement</p> <p>All exterior tobacco usage debris vessels shall be emptied twice a week. (Emptying units include the removal of any debris that might be lodged inside the neck portion of a smokeless unit.</p> <p>Exterior tobacco usage areas and building entrances shall be cleaned daily and all loose debris collected and removed from the area.</p> <p>All tobacco usage debris vessels shall be cleaned inside and outside and deodorized twice a week</p>
5.7	Roads and Grounds Services	Lawn Sodding and Seeding	Roads and Grounds Services	<p>Sod Requirement</p> <p>Install sod in designated areas within 48 hours of sod delivery.</p>

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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.7	Roads and Grounds Services	Roads and Grounds	Roads and Grounds Services	<p>Chemicals shall be applied as required to control fire ants with all Area 1 and Area 2 locations (Chemical to be used to control the ants shall be of sufficient strength to eliminate the existing mound and prevent future near term mound developments)</p> <p>Plant life pest shall be controlled on an as required basis. Landscape plants and trees in Area 1 and Area 2 locations shall be inspected weekly to identify any insect or disease situation that needs to be addressed in an expedited manner to prevent damage to infected plants and the spread of the infestation to other plantings.</p>

PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.7	Roads and Grounds Services	Roads and Grounds	Roads and Grounds Services	<p>During the time span of a year there will be multiple, 1-4 per month high-ranking personnel (NASA, NASA contractor, other Government, etc.) who visit the site for special meetings and tours. These visitations and tours can occur at any time and normally require special site preparation activities prior to the event.</p> <p>Once to four times a year there are on-site events that require special grounds preparations in support of the activity. (i.e. Earth Day, etc)</p>
		Roads and Grounds	Roads and Grounds Services	<p>Perform hurricane site preparation activities (specific site cleanup activities, sand bag preparation, sand bag distribution, building roof debris removal, etc.) during the site's annual hurricane season.</p> <p>Note 1: Provide a list of individuals who will volunteer to stay at the facility helping to prepare for a hurricane that is projected to come into the area. This group normally will be released for evacuation prior to a hurricane's arrival. This group shall also be available directly after a hurricane's passing to assist in cleanup activities.</p>

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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.7	Roads and Grounds Services	Roads and Grounds	Roads and Grounds Services	<p>All buildings exterior windows shall be cleaned once a year.</p> <p>Exterior windows around the Bldg. 350 Lobby and the Bldg. 351 Dining and Event Rooms shall be cleaned quarterly (These windows shall also be cleaned per special request for any high level event)</p> <p>Exterior windows around glass door entrances shall be cleaned quarterly Building 350: 32,000 sq. ft. of which 15,500 is on the 2nd floor Building 320: 5,600 sq. ft. of which 1,500 is on the 2nd floor Building 101/102: 60,000 sq. ft of which 30,000 is on the 2nd floor.</p>
		Roads and Grounds	Roads and Grounds Services	<p>All hurricane shutters shall have dust and spider webs remove from the area between the glass and the shutter by dry brush/broom methods once a year (mid to late fall) and per request for a special event.</p>

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PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
5.7	Roads and Grounds Services	Roads and Grounds	Roads and Grounds Services	All exterior turnstile canopies shall have spider webs removed once a year during the mid to late fall. There are ten exterior turnstile canopy locations.
		Roads and Grounds	Roads and Grounds Services	Provide a monthly activities report which will include a description of work accomplished during that work month. Items covered shall include: 1. Completed and in progress activities. 2. Safety issues/incidents/reported events 3. Significant accomplishments 4. Problems Encountered 5. Corrective Actions
5.10	Roads and Grounds Services	Roads and Grounds	Roads and Grounds Services	During the time span of a year there will occur off-site activities such as Family Day, Crescent City Classic, etc. that require Roads & Grounds personnel support both on-site and off-site. This type of activity support is normally limited to less than ten events per year.

Section 6.0 Site Operations				
PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
6.3	Power Plant Operations	Hours of Operations	MSFOC PWS	Operate all Power Plant Equipment 24 hours a day, 7 days a week, including holidays
6.5	Energy Management Control System Operations	Hours of Operations	MSFOC PWS	Operate the EMCS console and provide surveillance of all EMCS connected points 24 hours a day, 7 days a week, including holidays
6.5	Energy Management Control System Operations	Equipment Service after Unplanned Outages	MSFOC PWS	Return all required systems on-line within two hours of re-establishment of utility service.
6.5	Energy Management Control System Operations	Equipment Readiness	MSFOC PWS	Maintain operational readiness of backup host computer and perform a functional online test of the backup computer on a monthly basis

Section 7.0 Logistics Operations Services				
PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
7.2	Logistics Supply and Material Management	Managing and operating the commodity cribs	MSFOC PWS	Monthly - Inventory reports on commodity usage
7.6	Vehicle Management Operations	Passenger Shuttle Service throughout MAF. Utilize a scheduled route and not individual taxi service	MSFOC PWS	Provide driver service for the passenger shuttle service between the hours of 7:00 a.m. and 4:00 p.m. (Monday through Friday)

Section 9.0 Environmental Services

PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
9.0	Environmental Services	Coordinate and participate in the Environmental Functional Review with NASA HQ. Input the results of corrective and preventive actions into the NETS and track progress. Follow up with a Status Report until all CAR's are closed.	MSFOC PWS	Every (3) years or per HQ request
9.1.1	Environmental Management System	Plan and participate in Environmental Management System audits and assessments.	MSFOC PWS	Plan and conduct at a minimum one internal EMS conformance audit, one internal environmental compliance audit, and one external EMS conformance audit on a yearly basis.
	Environmental Management System	Provide EMS summary information to NASA HQ as required.	MSFOC PWS	Annually
9.1/9.3/9.4	Environmental Management System Wastewater and Stormwater Management Waste Management	Performing Compliance Inspections a. Hazardous Waste Handling Facility (Building 159) b. "less than 90 storage areas" c. Inspection of PCB Storage Building (Bldg.221) d. PCB Transformer Inspection e. Containment Area inspections	MSFOC PWS	Weekly ; Monthly ;Quarterly Inspections as required by specific Environmental projects

Section 10.0 Construction				
PWS REFERENCE	PWS TITLE	WORK TOPIC	DOCUMENT	PERFORMANCE FREQUENCY
10.1	Local Projects	Project Completion	Project completion summary	Update monthly to provide an account of all projects completed between contract award and completion of contract
10.1	Local Projects	Construction Project Status	Electronic overall construction project status, including schedule, project baseline changes and required corrective action plans submitted and reviewed with NASA	Monthly; provide status with monthly review
10.1.2	Authorization	CI and RFI Status	Meeting to review and status all RFIs and CIs with NASA and other NASA contractors	Monthly

**MANUFACTURING SUPPORT AND FACILITIES OPERATIONS
CONTRACT (MSFOC) NNM09AA20C**

ATTACHMENT J-1-C

Manufacturing Support Requirements & Timeline

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Section 3.0 MANUFACTURING SUPPORT					
PWS SECTION	WORK TITLE	WORK DESCRIPTION	MANAGE DATE	OPERATE DATE	MAINTAIN DATE
Section 3.2	General Support of Manufacturing Facilities – Transportation and Handling	<ol style="list-style-type: none"> 1. Manage, operate and maintain all mobile and fixed transportation and handling equipment such as bridge and derrick cranes, hoists, and air bearings and mobile equipment such as truck-mounted cranes, bull dozers, and lift trucks per Attachment J-7 and J-8. ET project will operate cranes and manage use thereof for ET flight hardware moves until last use. 2. Within dedicated production areas, Projects and /or Users will operate cranes and provide for the daily “management” of individual cranes and associated equipment 3. Support and coordinate Program Critical hardware (PCH) handling / moves or critical lifts. Coordinate with the Government and User requesting the move. 4. Provide certified forklift and crane operators for handling routine equipment and material moves in their areas of responsibility. 5. Proof-load all lifting slings and fixtures used in material and hardware handling operations in accordance with NASA-STD 8719.9 (Lifting Devices and Equipment). 6. Operate cranes compliant with NASA-STD 8719.9 (Lifting Devices and Equipment) and keep certified by load/proof testing and other applicable NASA and OSHA standards and codes. 	<div style="border: 1px solid black; padding: 5px;"> <p>The dates listed below are not intended to map to <u>any specific</u> Work Description Line item in this Attachment.</p> </div>		
			<p>12/1/2008 for all existing site-wide work scope presently performed by the FOC contractor.</p> <p>12/01/08 additional minimum User/Project support identified in PWS Section 3.0;</p> <p>10/01/2010 for all remaining PWS scope under ET Contract T&H. (except for ET moves)</p>	<p>12/1/2008 for all other sections of this PWS;</p> <p>12/01/08 additional minimum User/Project support identified in PWS Section 3.0;</p> <p>10/01/2010 for operating site-wide T&H. (except for ET moves)</p>	<p>12/1/2008 for all equipment in Section J-7 and J-8</p>

Section 3.0 MANUFACTURING SUPPORT					
PWS SECTION	WORK TITLE	WORK DESCRIPTION	MANAGE DATE	OPERATE DATE	MAINTAIN DATE
Section 3.3	Support for Common Manufacturing Resources- Laboratories	<ol style="list-style-type: none"> Overall Management and operate & maintain the Materials and Processes Laboratory, Analytical Chemistry Laboratory, and Metallurgy Laboratory - excluding Metrology. ET project will operate and perform scheduling of daily Laboratory activities until ET last use. Other Projects and / or Users may perform operations as agreed to by the Government Provide laboratory test planning and procedures, facility integration, engineering support for testing, data reduction, post-test data analysis and final test report, and problem resolution. Perform materials testing to support Government and Project and / or User objectives, and provide engineering oversight of these tests. Work with the Project and / or User to perform a complete analysis on each test sample received for testing to ensure that the information is complete and accurate. Verify that each sample sent for testing has all of the information needed for identification, and that all of the information is accurate (sometimes requires coordination with the test requester, the materials supplier, the manufacturer, and other sources). 	<div style="border: 1px solid black; padding: 5px;"> <p>The dates listed below are not intended to map to <u>any specific</u> Work Description Line item in this Attachment.</p> </div>		
			<p>12/1/2008 (except for ET management & operations)</p> <p>10/2010 Manage for multi-program environment</p>	<p>12/1/2008 (perform minimum operations to support User/Project except for ET operations)</p> <p>10/2010 Operate for multi-program environment</p>	<p>12/01/08 (Maintain facility related equipment per Section J-7 & J-8)</p> <p>(ET will maintain designated systems & equipment until last use)</p> <p>10/2010 (Maintain remaining ET systems)</p>

Section 3.0 MANUFACTURING SUPPORT					
PWS SECTION	WORK TITLE	WORK DESCRIPTION	MANAGE DATE	OPERATE DATE	MAINTAIN DATE
Section 3.3 Cont'd	Support for Common Manufacturing Resources- Laboratories (Cont.)	6. Prepare each required test sample in the form in which it is needed, including substrate preparation, sample curing and sample sizing. 7. Perform engineering analyses for the areas covered under this PWS element and any work requests developed including analysis of test setups, test procedures, and data generated by the testing operations. 8. Provide engineering analyses that ensures test data is generated using approved organizational instructions, and the data is either consistent with previous test data or valid explanations exist why anomalies have occurred. 9. Validate test data and ensure correlation with test data generated by other sources. 10. Input all test data and results into the Materials and Processes Technical Information System (MAPTIS) database 11. Immediately bring to the attention of the requestor or government contact, any test data that cannot be validated or correlated with test data from other sources.	The dates listed below are not intended to map to <u>any specific</u> Work Description Line item in this Attachment.		
			12/1/2008 (except for ET management & operations) 10/2010 Manage for multi-program environment	12/1/2008 (perform minimum operations to support User/Project except for ET operations) 10/2010 Operate for multi-program environment	12/01/08 (Maintain facility related equipment per Section J-7 & J-8) (ET will maintain designated systems & equipment until last use) 10/2010 (Maintain remaining ET systems)

Section 3.0 MANUFACTURING SUPPORT					
PWS SECTION	WORK TITLE	WORK DESCRIPTION	MANAGE DATE	OPERATE DATE	MAINTAIN DATE
Section 3.3 Cont'd	Support for Common Manufacturing Resources- Laboratories (Cont.)	Examples of testing and associated equipment includes: a. Mechanical Testing b. Weld Analysis c. Failure Analysis Chemical d. Mechanical e. Bonding f. Material Composition g. Thermal Protection Products Fabrication and Testing h. Composite Development Fabrication i. Chemical Testing Bench Chemistry j. Environmental Testing Gases k. Contamination l. Hazardous Material m. Spray On Foam Insulation (SOFI) Application and Testing n. Specimen Fabrication and Testing Machining, Bonding o. Large Scale Testing p. Instrumentation	<div style="border: 1px solid black; padding: 5px;"> <p>The dates listed below are not intended to map to <u>any specific</u> Work Description Line item in this Attachment.</p> </div>		
					12/1/2008

Section 3.0 MANUFACTURING SUPPORT					
PWS SECTION	WORK TITLE	WORK DESCRIPTION	MANAGE DATE	OPERATE DATE	MAINTAIN DATE
Section 3.3	Support for Common Manufacturing Resources- Chemical Analysis	<ol style="list-style-type: none"> 1. Perform chemical analyses in support of PWS. ET project will perform their Chemical Analysis until ET last use. Other Project and / or Users may perform chemical analyses as agreed to by the Government. 2. Perform sample collection, analysis, and reporting (types of analysis shall include chemical, crystallographic, thermal, thermo physical properties of materials and identify chemical contaminants) 3. Monitor by chemical analysis all chemical tanks and rinse tanks used in various plating, degreasing, etching, cleaning, and dye processes (tanks shall be strictly monitored to ensure that chemical parameters adhere to the requirements). Facilities Services Control Plan DRD-37883MS-FSCR. 4. Analyze the various solvents/fluids used in the precision cleaning facility for non-volatile residue and particle count to certify cleanliness 5. Provide sampling and analysis to ensure compliance with NASA environmental requirements 	<div> <p>The dates listed below are not intended to map to <u>any specific</u> Work Description Line item in this Attachment.</p> </div>		
				<p>12/01/08 - perform chemical analyses to support PWS and minimum support to User/Project; (except for ET)</p> <p>10/01/2010 perform all chemical analyses operations</p>	12/1/2008 (see above)

Section 3.0 MANUFACTURING SUPPORT					
PWS SECTION	WORK TITLE	WORK DESCRIPTION	MANAGE DATE	OPERATE DATE	MAINTAIN DATE
Section 3.3	Support for Common Manufacturing Resources- Chemical Analysis (Cont.)	6. Perform specifications analyses on propellants and other chemical commodities per the requirements of the Government, the Project and / or User or other referenced specifications	<div> The dates listed below are not intended to map to <u>any specific</u> Work Description Line item in this Attachment. </div>		
		7. Provide laboratory and in-field analytical tests including moisture, pH, conductivity, dissolved oxygen, temperature, airflow rate, particulate and fallout counts, and Non-Volatile Residue (NVR) determinations			
		8. Provide laboratory analysis reports documenting sample history, analytical results versus specification limits by sample control number and maintain records in accordance with regulatory and quality requirements			
		9. Verify/evaluate the cleanliness of hardware and / or facilities to prevent contamination of space flight hardware (facilities/hardware include clean rooms at all cleanliness levels, propellant lines/vessels, flow benches, small hardware / equipment, and large hardware and cross-country cryogenic liquid and gas lines)			
		10. Follow a scheduled sampling routine to check the clean rooms and propellant systems to determine contamination levels.		12/01/08 - perform chemical analyses to support PWS and minimum support to User/Project; (except for ET)	12/1/2008 (see above)
				10/01/2010 perform all chemical analyses operations	

Section 3.0 MANUFACTURING SUPPORT					
PWS SECTION	WORK TITLE	WORK DESCRIPTION	MANAGE DATE	OPERATE DATE	MAINTAIN DATE
Section 3.3	Support for Common Manufacturing Resources- Chemical Analysis (Cont.)	11. Track all data and evaluations for each Project and / or User, and provide a written monthly report of all findings 12. Inform the Project and / or User immediately if any test result is out of the tolerance levels established by the Projects	The dates listed below are not intended to map to <u>any specific</u> Work Description Line item in this Attachment.		
				12/01/08 - perform chemical analyses to support PWS and minimum support to User/Project; (except for ET)	12/1/2008 (see above)
				10/01/2010 perform all chemical analyses operations	

Section 3.0 MANUFACTURING SUPPORT					
PWS SECTION	WORK TITLE	WORK DESCRIPTION	MANAGE DATE	OPERATE DATE	MAINTAIN DATE
Section 3.3	Support for Common Manufacturing Resources- Metrology Lab (B103)	<ol style="list-style-type: none"> Overall Management, operation, and maintenance of the Metrology Laboratory. Perform timely and accurate (1) servicing, repair, and calibration of inspection, measuring, and test equipment (IM&TE) assigned for calibration as identified in Attachment J-12, Technical Exhibits; (2) standards maintenance and certifications; (3) calibration procedure preparation and maintenance; (4) maintain calibration data ensuring that the data stays current; and (5) resolution of measurement problems associated with the effort. Perform all calibrations per NPD 8730.1, "Metrology and Calibration". Maintain reference standards and provide working standard measurement data traceable to National Institute of Standards and Technology (NIST) or intrinsic standards for MAF, and procure NIST traceable standards and standard reference materials. Within 30 days of calibration due date, Inform the user of calibration via electronic means and perform timely and accurate servicing, repair, and calibration of inspection, measuring, and test equipment (IM&TE) assigned for calibration by authorized users. Maintain calibration standards. Establish and maintain calibration procedures and data in CMMS. 	<div style="border: 1px solid black; padding: 5px;"> <p>The dates listed below are not intended to map to <u>any specific</u> Work Description Line item in this Attachment.</p> </div>		
			12/1/2008	12/01/08	12/1/2008 (per attachment J-7 & J-8)

Section 3.0 MANUFACTURING SUPPORT					
PWS SECTION	WORK TITLE	WORK DESCRIPTION	MANAGE DATE	OPERATE DATE	MAINTAIN DATE
Section 3.3	Support for Common Manufacturing Resources-	7. Provide in-place calibration only for items embedded in systems too large to move or whose accuracy would be affected by movement after calibration.	<div> <p>The dates listed below are not intended to map to <u>any specific</u> Work Description Line item in this Attachment.</p> </div>		
	Metrology Lab (B103) (Cont.)	8. Provide equipment repair and incidental cleaning. 9. Provide NASA information found to be more than 30 days overdue for calibration and found to be out of tolerance when received for calibration. 10. Notify the customer when out-of-tolerance conditions are 200 percent or more. Provide calibration data sheets or charts for TMDE as a result of an out-of-tolerance condition or on other TMDE as required by the customer.	12/1/2008	12/01/08	12/1/2008 (per attachment J-7 & J-8)

Section 3.0 MANUFACTURING SUPPORT					
PWS SECTION	WORK TITLE	WORK DESCRIPTION	MANAGE DATE	OPERATE DATE	MAINTAIN DATE
Section 3.3	Support for Common Manufacturing Resources- Chemical Clean Facilities (B103 Chemical Clean Line (L-4) and Nine Precision Cleaning Areas)	<ol style="list-style-type: none"> Overall Management, operation, and maintenance of the Chemical Clean Facilities. ET will provide operators for critical ET needs. Perform cleaning and refurbishment services for fluid mechanical systems hardware and components including those used in both GSE and flight systems in accordance with MSFC - 123, <i>Specification for Surface Cleanliness of Fluid Systems</i> (Upon request, cleanliness shall be certified to levels specified in NASA, Military, or other contractor specifications that are comparable to MSFC-C-123) Establish and maintain operational procedures for Chemical Clean Facilities. Perform all cleaning and packaging operations using non-ozone depleting substances (CFC-113 (chlorofluorocarbon-113) is allowed where specifically called out in specifications and approved by NASA) Provide engineering services for existing non-CFC cleaning and verification processes Disassemble functional components to facilitate cleaning, to allow for the removal of standard replacement parts and soft goods, and to allow for inspection for damaged parts 	<div> <p>The dates listed below are not intended to map to <u>any specific</u> Work Description Line item in this Attachment.</p> </div>		
			12/1/2008	12/01/08 - provide minimum support to User/Project for cleaning operations (except for ET) 10/01/2010 perform all cleaning operations	12/1/2008

Section 3.0 MANUFACTURING SUPPORT					
PWS SECTION	WORK TITLE	WORK DESCRIPTION	MANAGE DATE	OPERATE DATE	MAINTAIN DATE
Section 3.3	Support for Common Manufacturing Resources-	<p>7. Perform decontamination of contaminated system components</p> <p>8. Perform rough cleaning to remove corrosion, dirt, grease, scale, or other contaminants from critical surfaces of systems and individual component parts</p> <p>9. Perform surface treatment such as passivation, pickling, and chemical coating.</p> <p>10. Perform precision cleaning in a clean room environment using approved fluids and testing to ensure particulate and NVR levels are in conformance with the cleanliness level specified by the User</p> <p>11. Functionally test components to ensure that performance standards are met as specified in Government, contractor or vendor drawings</p> <p>12. Hydrostatically and pneumatically test tubing, hoses, and compressed gas cylinders</p> <p>13. Before initiating field cleaning operations, establish a controlled area and coordinate with all personnel in the vicinity of the cleaning operations area.</p>	<p>The dates listed below are not intended to map to <u>any specific</u> Work Description Line item in this Attachment.</p>		
			12/1/2008	<p>12/01/08 - provide minimum support to User/Project for cleaning operations (except for ET)</p> <p>10/01/2010 perform all cleaning operations</p>	12/1/2008

Section 3.0 MANUFACTURING SUPPORT					
PWS SECTION	WORK TITLE	WORK DESCRIPTION	MANAGE DATE	OPERATE DATE	MAINTAIN DATE
Section 3.3	Support for Common Manufacturing Resources- Valve and Component Inspection (B 103)	1. Maintain equipment. ET to provide operators and analyst until last use. 2. Inspection and cleaning of hardware and tubing.	<div> <p>The dates listed below are not intended to map to <u>any specific Work Description Line item</u> in this Attachment.</p> </div>		
					12/1/2008
Section 3.3	Support for Common Manufacturing Resources- Thermal Protection System (TPS) Areas (B103 E-6/7, G-12, E-17, G-17), (B103 Intertank Area)	1. Maintain TPS equipment. All spray guns, proportioners, and other tooling will be managed, operated, and maintained by ET. Overall management will start upon ET last use.	07/2010	7/2010 (ET operations complete in 7/2010)	12/1/2008 (per attachment J-7 & J-8)
Section 3.3	Support for Common Manufacturing Resources- TPS Storage Areas (B103, B220)	1. Manage and maintain TPS storage areas and equipment (ET/Users to operate TPS storage within allocated storage areas).	07/2010	7/2010 (ET operations complete in 7/2010)	12/1/2008 (per attachment J-7 & J-8)

Section 3.0 MANUFACTURING SUPPORT					
PWS SECTION	WORK TITLE	WORK DESCRIPTION	MANAGE DATE	OPERATE DATE	MAINTAIN DATE
Section 3.3	Support for Common Manufacturing Resources- Electrical Harness Fabrication (B103)	1. Manage and maintain. Fabrication performed by ET.	<div style="border: 1px solid black; padding: 5px;"> The dates listed below are not intended to map to <u>any specific</u> Work Description Line item in this Attachment. </div>		
			12/1/2008	Fabrication performed by Project / User	12/1/2008
Section 3.3	Support for Common Manufacturing Resources- Heat Treating (B103 J-7)	1. Overall Management and operate & maintain the Heat Treat Facility. ET to provide Operators for ET hardware and tooling. 2. Maintain sufficient skill and knowledge of Heat treating capabilities, equipment testing and analysis to provide necessary technical guidance or expertise for future Projects and / or Users. 3. Capabilities include annealing, stress relieving, normalizing, hardening, solution treating, aging and tempering using electric and gas heated ovens and furnaces under controlled (vacuum and special gases) and non-controlled environments	12/01/08 (except ET daily management)	12/01/08 - perform minimum operations to support User/Project; (except for ET)	12/1/2008
			10/01/2010 (all management of Heat Treat Facility)	10/01/2010 perform all Heat Treat operations	

Section 3.0 MANUFACTURING SUPPORT					
PWS SECTION	WORK TITLE	WORK DESCRIPTION	MANAGE DATE	OPERATE DATE	MAINTAIN DATE
Section 3.3	Support for Common Manufacturing Resources- Heat Treat Facility and Machine Shop (B103)	<ol style="list-style-type: none"> Overall management and operate & maintain the Heat Treat Facility. ET to provide Operators for ET hardware and tooling. ET to manage day-to-day operations for the 27' and 40' Niles, and Century Detroit through ET last use. Fabricate and assemble R&D products, hardware and equipment, test fixtures, and prototype/mockup hardware or end items made from various materials that are within the MAF manufacturing capability (some fabrication operations require adhesive bonding technology) Refurbish (re-machine, reprocess, and/or clean) existing hardware Plan, schedule, track, and status manufacturing tasks through the fabrication shops Support design, fabrication, test equipment, test article, facilities, and tooling Perform manufacturing planning to accomplish the requirements of the Government and Project and / or User orders 	<div style="border: 1px solid black; padding: 5px;"> <p>The dates listed below are not intended to map to <u>any specific</u> Work Description Line item in this Attachment.</p> </div>		
			12/1/2008 (except for ET management & operations)	12/1/2008 (perform minimum operations to support User/Project except for ET operations)	12/01/08 (Maintain facility related equipment per Section J-7 & J-8)
			10/2010 Manage for multi-program environment	10/2010 Operate for multi-program environment	10/2010 (Maintain remaining ET systems)

Section 3.0 MANUFACTURING SUPPORT					
PWS SECTION	WORK TITLE	WORK DESCRIPTION	MANAGE DATE	OPERATE DATE	MAINTAIN DATE
Section 3.3	Support for Common Manufacturing Resources- Heat Treat Facility and Machine Shop (B103) (Cont.)	7. Manage, operate and maintain the storeroom/tool crib including inventory control, receipt, issue, storage and handling of hardware, parts, and materials	<div style="border: 1px solid black; padding: 5px;"> <p>The dates listed below are not intended to map to <u>any specific</u> Work Description Line item in this Attachment.</p> </div>		
		8. Support Project and / or User in the design and development of tooling, processes, procedures and techniques necessary to optimize the manufacture and assembly of demonstration, development, qualification and flight articles			
		9. Provide the ability to accept and read CAD models from a variety of CAD/Modeling systems.	12/1/2008 (except for ET management & operations)	12/1/2008 (perform minimum operations to support User/Project except for ET operations)	12/01/08 (Maintain facility related equipment per Section J-7 & J-8)
		10. Perform machining processes which include operations performed on lathes, mills, grinders, shapers, and electrostatic discharge machines (selected machines are computer numerically controlled (CNC) and can be programmed both off- and on-line)	10/2010 Manage for multi-program environment	10/2010 Operate for multi-program environment	10/2010 (Maintain remaining ET systems)
		11. Foam machining shall include operation of conventional or CNC equipment in the foam shop or controlled areas of the primary machine shop			
		12. Perform sheet metal processes including shearing, bending, punching, and fastening			
		13. Fabricate high and low-pressure metal tubing and flexible hose systems			

Section 3.0 MANUFACTURING SUPPORT					
PWS SECTION	WORK TITLE	WORK DESCRIPTION	MANAGE DATE	OPERATE DATE	MAINTAIN DATE
Section 3.4	Support for Dedicated Manufacturing Areas- Bldg 110 Vertical Assembly Building (Cells A, B, C, D, E, F) , Bldg 114 High Bay Building (Cells G, H, J, K, L), Bldg 113, and 190 Tank Farm	<ol style="list-style-type: none"> Overall management, operate, maintain. Contractor will manage for multi-program environment. ET will operate and manage use thereof until ET last use. ET will maintain production critical systems until ET last use. ET/Users/Projects operations may include assembly, hardware installation, vehicle stack/mate, SOFI (spray on foam insulation) application, SOFI machining, internal/external cleaning, hydrostatic testing, primer application, inspection, and TPS closeout activities associated with large/major flight hardware components. Provide engineering test conductor support Operate on a limited basis and maintain facilities, fixed and mobile equipment and associated testing and servicing systems. Desiccant/Thermal Oxidizer (services Bldg 110 cells A,B,C,D) and 190 Tank Farm will transition to the Contractor upon ET last use. 	<div style="border: 1px solid black; padding: 5px;"> <p>The dates listed below are not intended to map to <u>any specific Work Description</u> Line item in this Attachment.</p> </div>		
			12/1/2008 (except for ET management & operations including configuration control) 7/2010 Manage for multi-program environment (configuration control) (ET management & daily operations are expected to be complete as follows: Cell A 5/2010 Cell B 6/2009 Cell D/E 3/2010 Cell F 1/2010 Cell G 5/2009 Cell H 3/2010 Cell J 12/2010 Cell K 5/2010)	12/1/2008 (except for ET operations) 7/2010 Operate for multi-program environment (schedule/configuration control) ET management & daily operations are expected to be complete as follows:	12/01/08 (Maintain facility related equipment per Section J-7 & J-8) (ET will maintain designated critical systems & equipment until last use) 10/2010 (ET maintenance expected to be complete as follows: Cell A 5/2010 Cell B 6/2009 Cell D/E 3/2010 Cell F 1/2010 Cell G 5/2009 Cell H 3/2010 Cell J 12/2010 Cell K 5/2010)

Section 3.0 MANUFACTURING SUPPORT					
PWS SECTION	WORK TITLE	WORK DESCRIPTION	MANAGE DATE	OPERATE DATE	MAINTAIN DATE
Section 3.4	Support for Dedicated Manufacturing Areas- Bldg 420 Final Acceptance and Prep (Cells 1,2,3,4 and office space)	<ol style="list-style-type: none"> ET will manage and operate Cells 1 & 2 until ET last use. ET will maintain production critical systems until ET last use. Cells 1 & 2 will be dedicated ET production cells. Cells 3 & 4 will be dedicated production cells for new Users. 	<div> <p>The dates listed below are not intended to map to <u>any specific</u> Work Description Line item in this Attachment.</p> </div>		
					12/1/2008 (Maintain facility related equipment per Section J-7 & J-8; 10/1/2010 (Maintain of all property and equipment)
Section 3.4	Support for Dedicated Manufacturing Areas- Bldg 451 Pneumatic Test Facility	<ol style="list-style-type: none"> Manage, operate, maintain. Contractor will manage for multi-program environment. ET will manage and operate for ET operations until last use. ET will maintain production critical systems until ET last use. Operations include pneumatically proof testing under simulated loads. 	4/2010	4/2010	12/01/08 (Maintain facility related equipment per Section J-7 & J-8) 4/2010 (Maintain all property and equipment)
Section 3.4	Support for Dedicated Manufacturing Areas- TPS Mockup/Spray & Process Evaluation Room	<ol style="list-style-type: none"> Manage and maintain. Contractor will manage TPS infrastructure for multi-program environment (configuration control). ET will manage and operate for ET operations until last use. 	7/2010	7/2010	12/01/08 (Maintain facility related equipment per Section J-7 & J-8) 7/2010 (Maintain all property and equipment)

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Section 3.0 MANUFACTURING SUPPORT					
PWS SECTION	WORK TITLE	WORK DESCRIPTION	MANAGE DATE	OPERATE DATE	MAINTAIN DATE
Section 3.4	Support for Dedicated Manufacturing Areas-	<ol style="list-style-type: none"> 1. Manage, operate on a limited basis, and maintain. ET will manage and operate for ET operations until last use. 2. Perform all nondestructive examinations (NDE) and tests as required for fabrication, assembly and checkout where the contractor has performed fabrication and assembly of products 3. Perform all NDE efforts using approved written procedures 4. Submit to the COTR all NDE procedures for government NDE-Level-II review and acceptance before performing the examination 5. Conduct pre-inspection meetings with the Project and / or User when necessary to define the requirements and objectives of the inspection, the physical and design features of the item, the test acceptance criteria, and the NDE methods to be employed 6. Receive, inspect, and evaluate (or alternately, inspect in-place) individual items scheduled for NDE services 	<div> <p>The dates listed below are not intended to map to <u>any specific Work Description Line item</u> in this Attachment.</p> </div>		
	Non-Destructive Evaluation (NDE)		12/1/2008 (except for ET operations expected to be complete as follows: B103 H-8 7/2010 and X-ray booth 7/2009)	12/1/2008 (except for ET operations expected to be complete as follows: B103 H-8 7/2010 and X-ray booth 7/2009)	12/1/2008 (except for ET critical systems. ET last use 7/2010)

Section 3.0 MANUFACTURING SUPPORT					
PWS SECTION	WORK TITLE	WORK DESCRIPTION	MANAGE DATE	OPERATE DATE	MAINTAIN DATE
Section 3.4	Support for Dedicated Manufacturing Areas- Non-Destructive Evaluation (NDE) (Cont.)	7. Prepare a report presenting the inspection results and appropriate recommendations 8. Conduct NDE examinations in accordance with applicable American Society for Testing Materials (ASTM), American Welding Society (AWS), ASME, and NASA specifications, or contractor specifications where requirements are consistent with industry standards 9. Coordinate with the customer to inform them of required secondary support elements for access or safeing of the work area.	<div style="border: 1px solid black; padding: 5px;"> <p>The dates listed below are not intended to map to <u>any specific</u> Work Description Line item in this Attachment.</p> </div>		
			12/1/2008 (except for ET operations expected to be complete as follows: B103 H-8 7/2010 and X-ray booth 7/2009)	12/1/2008 (except for ET operations expected to be complete as follows: B103 H-8 7/2010 and X-ray booth 7/2009)	12/1/2008 (except for ET critical systems. ET last use 7/2010)
Section 3.4	Support for Dedicated Manufacturing Areas- Welding (Bldg 103 ET FSW at F-10 and FSW trainer in NCAM area) and (Bldg 103 Super Light Weight (SLWT) fusion weld development (Cont.)	1. Maintain. ET to manage and operate these systems until ET last use. 2. FSW operations include a FSW system used to perform longitudinal ET barrel welds and a self-reacting FSW process development system used to develop FSW processes. 3. SLWT fusion weld system used to develop SLWT processes and weld schedules.	7/1/2010	7/2010	7/1/2010 (Maintain FSW equipment post ET)

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Section 3.0 MANUFACTURING SUPPORT					
PWS SECTION	WORK TITLE	WORK DESCRIPTION	MANAGE DATE	OPERATE DATE	MAINTAIN DATE
Section 6.2	Port and Harbor Operations	1. Perform Barge Operations to support User(s)/Tenant(s) requirements	The dates listed below are not intended to map to <u>any specific</u> Work Description Line item in this Attachment.		
			12/1/2008 (except for Barges under USA control)	12/1/2008 (except for Barges under USA control)	12/1/2008 (except for Barges under USA control)
			10/1/2010 All Barge Management	10/1/2010 All Barge Management	10/1/2010 All Barge Management