

<b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>		1. CONTRACT ID CODE	PAGE OF PAGES 1   27
2. AMENDMENT/MODIFICATION NO. 02	3. EFFECTIVE DATE 06/16/2014	4. REQUISITION/PURCHASE REQ. NO. 4200478585	5. PROJECT NO. (If applicable)
6. ISSUED BY National Aeronautics & Space Administration NASA Office of Procurement Stennis Space Center, MS 39529-6000	CODE DA10	7. ADMINISTERED BY (If other than Item 6)	CODE

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)	<input checked="" type="checkbox"/> 9A. AMENDMENT OF SOLICITATION NO. NNS14478585R
	<input checked="" type="checkbox"/> 9B. DATED (SEE ITEM 11) 05/19/2014
	10A. MODIFICATION OF CONTRACT/ORDER NO.
	<input type="checkbox"/> 10B. DATED (SEE ITEM 13)
CODE	FACILITY CODE

**11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS**

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers  is extended,  is not extended.  
 Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:  
 (a) By completing items 8 and 15, and returning 2 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment your desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

**13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
<input type="checkbox"/>	
<input type="checkbox"/>	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
<input type="checkbox"/>	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
<input type="checkbox"/>	D. OTHER (Specify type of modification and authority)

**E. IMPORTANT:** Contractor  is not,  is required to sign this document and return 2 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

See Pages 2 through 27.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Marvin L. Horne
15B. CONTRACTOR/OFFEROR	16B. UNITED STATES OF AMERICA
(Signature of person authorized to sign)	(Signature of Contracting Officer)
15C. DATE SIGNED	16C. DATE SIGNED 6-16-2014

14. DESCRIPTION OF AMENDMENT/MODIFICATION (*Organized by UCF section headings, including solicitation/contract subject matter where feasible.*) continued:

The purposes of this amendment are to: (1-39) revise the RFP sections identified below; (40) provide change sheets of the revisions; (41) answer questions received. As noted in Item 11 (of SF-30), this action does NOT extend the due date for receipt of proposals.

1. Clause G.4, Installation Accountable Government Property (NFS 1852.245-71), paragraph (C)(7) on page 6 of 13 of Section is revised as follows:

FROM:

X (7) Installation service facilities: (Fuels, oils, & lubrications for vehicles and equipment) (Does not include Firm Fixed Price Services).

TO:

X (7) Installation service facilities: (Fuels, oils, & lubrications for vehicles and equipment) (Applicable to List 1, 2, & 3).

2. Clause I.1, Clause Number 52.237-7, Indemnification and Medical Liability Insurance, on page 5 of 38 of Section is revised as follows:

FROM:

52.237-7	INDEMNIFICATION AND MEDICAL LIABILITY INSURANCE (JAN 1997)
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TO:

52.237-7	INDEMNIFICATION AND MEDICAL LIABILITY INSURANCE (JAN 1997) Fill-In: \$1,000,000
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3. Provision L.I-2, Communications and Request for Information, paragraph (b) on page 2 of 58 of Section is revised as follows:

FROM:

L.I-2. COMMUNICATIONS AND REQUESTS FOR INFORMATION

- (a) Any communications in reference to this solicitation shall cite the solicitation number and be directed to the following Government representative:

Name: Marvin L. Horne  
Contracting Officer

Address: NASA/John C. Stennis Space Center  
Attn: Marvin L. Horne  
Building 1100, RM 253, Mail Code DA10  
Stennis Space Center, MS 39529-6000

Phone: (228) 688-3528

E-Mail: [Marvin.L.Horne@nasa.gov](mailto:Marvin.L.Horne@nasa.gov)

- (b) Answers in response to the questions and communications received is posted at:  
<https://prod.nais.nasa.gov/cgi-bin/eps/sol.cgi?acqid=159785>

(End of Provision)

TO:

L.I-2. COMMUNICATIONS AND REQUESTS FOR INFORMATION

- (a) Any communications in reference to this solicitation shall cite the solicitation number and be directed to the following Government representative:

Name: Marvin L. Horne  
Contracting Office

Address: NASA/John C. Stennis Space Center  
Attn: Marvin L. Horne  
Building 1100, RM 253, Mail Code DA10  
Stennis Space Center, MS 39529-6000

Phone/Email: (228) 688-3528 - [Marvin.L.Horne@nasa.gov](mailto:Marvin.L.Horne@nasa.gov)

- (b) COMMUNICATIONS (QUESTIONS/COMMENTS) REGARDING THIS SOLICITATION MUST BE SUBMITTED IN WRITING to the Government representative identified above not later than 3:00p.m. on June 18, 2014, for Volumes I, II, III, IV, Mission Suitability, Past Performance, Cost/Price and Model Contract, respectively.

(End of Provision)

4. Provision L.I-22, Synergy, Consolidation, Enhancement, and Innovation, on page 16 of 58 of Section is revised as follows:

FROM:

Throughout its proposal, the Offeror is encouraged to identify proposed synergies, consolidations, enhancements, and/or innovations that will enhance performance and reduce overall costs of acquired services without increasing risk of unsuccessful contract performance to the Government. Synergies, consolidations, enhancements, and/or innovations can be defined as

including, but are not limited to, the originality, soundness, and feasibility of ideas or processes as they relate to the way in which the Offeror's organization will manage and perform the entire contract throughout the contract term. Each proposed synergy, consolidation, enhancement, and/or innovation shall adhere to the following ground rules: PWS requirements shall not change; both sites (SSC & MAF) shall be operated; and there shall be no use of Enhanced Use Lease agreements or Space Act Agreements (agreements required to lease space on SSC or MAF) nor any upfront investment(s) or cost(s) by the Government. The Offeror is advised that nothing in the above instructions authorizes the submission of alternate proposals. If the Offeror identifies a synergy, Consolidation, Enhancement, and/or Innovation that affects IDIQ, the offeror shall provide all the descriptive information with the exception of the cost/price information. The Offeror is advised that the Government may incorporate some or all of the proposed synergies, consolidations, enhancements, and/or innovations identified into the resulting contract, depending upon whether or not the Government determines that implementation is adequately described and will benefit the Government. The synergies, consolidations, enhancements, and/or innovations accepted by the Government at the discretion of the Contracting Officer will become binding contractual requirements and will be incorporated in accordance with Clause H.26, Synergy, Consolidation, Enhancement, and Innovation.

(End of Provision)

TO:

Throughout its proposal, the Offeror is encouraged to identify proposed synergies, consolidations, enhancements, and/or innovations that will enhance performance and reduce overall costs of acquired services without increasing risk of unsuccessful contract performance to the Government. Synergies, consolidations, enhancements, and/or innovations can be defined as including, but are not limited to, the originality, soundness, and feasibility of ideas or processes as they relate to the way in which the Offeror's organization will manage and perform the entire contract throughout the contract term. Each proposed synergy, consolidation, enhancement, and/or innovation shall adhere to the following ground rules: PWS requirements shall not change; both sites (SSC & MAF) shall be operated; and there shall be no use of Enhanced Use Lease agreements or Space Act Agreements (agreements required to lease space on SSC or MAF) nor any upfront investment(s) or cost(s) by the Government. The Offeror is advised that nothing in the above instructions authorizes the submission of alternate proposals. The Offeror shall provide a thorough description of each identified synergy, consolidation, enhancement, or innovation under the appropriate Mission Suitability Subfactor. Any costs or savings associated with an identified synergy, consolidation, enhancement, or innovation should be reflected in the Offeror's proposed price. The Offeror is advised that the Government may incorporate some or all of the proposed synergies, consolidations, enhancements, and/or innovations identified into the resulting contract, depending upon whether or not the Government determines that implementation is adequately described and will benefit the Government. The synergies, consolidations, enhancements, and/or innovations accepted by the Government at the discretion of the Contracting Officer will become binding contractual requirements and will be incorporated in accordance with Clause H.26, Synergy, Consolidation, Enhancement, and Innovation.

(End of Provision)

5. Provision L.II-3, Additional Documentation, Introduction Paragraph on page 21 of 58 of Section is revised as follows:

FROM:

The Offeror shall submit the following additional required documentation as part of its Model Contract Proposal – Volume IV submission (NOTE: This documentation will not be evaluated as part of the Mission Suitability Factor):

TO:

The Offeror shall submit the following additional required documentation (NOTE: This documentation will not be evaluated as part of the Mission Suitability Factor):

6. Provision L.II-4, Proposal Page Limitations, Table 1 on page 22 of 58 of Section is revised as follows:

FROM:

Volume II – Past Performance Section

<b>VOLUME</b>	<b>VOLUME PROPOSAL PAGE LIMIT</b>
<b>VOLUME II - PAST PERFORMANCE</b>	
Factor 2 – Past Performance	NTE 40 pages (Exceptions to Page Count include OSHA Form 300 and 300A & Past Performance Questionnaire)
Past Performance Questionnaires	NTE 4 questionnaires for the Offeror and NTE 2 questionnaires for each Major Subcontractor
OSHA Form 300 & 300A	No Limit
Organizational Conflict of Interest (OCI) Plan (DRD PC06-1.1)	No Limit

TO:

Volume II -- Past Performance Section

<b>VOLUME</b>	<b>VOLUME PROPOSAL PAGE LIMIT</b>
<b>VOLUME II - PAST PERFORMANCE</b>	
Factor 2 – Past Performance	NTE 40 pages (Exceptions to Page Count include OSHA Form 300 and 300A & Past Performance Questionnaire)
Past Performance Questionnaires	NTE 4 questionnaires for the Offeror and NTE 2 questionnaires for each Major Subcontractor
OSHA Form 300 & 300A	No Limit
Organizational Conflict of Interest (OCI) Plan (DRD PC06-1.1)	No Limit (is not included in Past Performance Page Count)

7. Provision L.II-4, Proposal Page Limitations (NFS 1852.215-81), paragraph (b) on page 23 of 58 of Section is revised as follows:

FROM:

Foldouts count as an equivalent number of 8 ½" x 11" pages and shall be printed on one (1) side only

TO:

Foldouts (except foldouts for Cost/Price Volume III) count as an equivalent number of 8 ½" x 11" pages and shall be printed on one (1) side only.

8. Provision L.II-6, Past Performance (Volume II), paragraph (b) on page 35 of 58 of Section is revised as follows:

FROM:

(b) For newly formed businesses (including Joint Ventures) having little or no past performance as the new business entity, the Offeror may submit the past performance of a predecessor business entity (or, in the case of Joint Ventures, the past performance of each Joint Venture partner). The Offeror shall also submit a thorough and clear explanation of why such information should be considered predictive of the Offeror's performance under a contract resulting from this solicitation and, if applicable, the Offeror (i.e. Joint Venture Partners) shall demonstrate a history of successfully performing Joint Ventures.

TO:

- (b) For an Offeror that is a newly formed businesses (including Joint Ventures) having little or no relevant past performance as the new business entity, the Offeror may submit the relevant past performance of a predecessor business entity (or, in the case of Joint Ventures, of each Joint Venture partner)

9. Provision L.II-6, Past Performance (Volume II), paragraph (e) on page 35 of 58 of Section is revised as follows:

FROM:

- (e) Past Performance History. The Offeror shall provide, at a minimum, the following information as part of its Past Performance Volume to demonstrate the relevance of its recent past performance, and to facilitate the evaluation of past performance as a whole and as related to the requirements of the proposed contract. The Offeror shall provide the written consent of each proposed Major Subcontractor to allow NASA to discuss the Subcontractors' past performance with the Offeror.

TO:

- (e) Past Performance History. The Offeror shall provide, at a minimum, the following information as part of its Past Performance Volume to demonstrate the relevance of its recent past performance, and to facilitate the evaluation of past performance as a whole and as related to the requirements of the proposed contract. The Offeror shall provide the written consent of each proposed Major Subcontractor or predecessor business entity (including joint venture partners) to allow NASA to discuss the Subcontractors' or predecessor business entities' past performance with the Offeror.

10. Provision L.II-6, Past Performance (Volume II), paragraph (f) on page 36 of 58 of Section is revised as follows:

FROM:

- (f) For each reference contract identified in Section (e), the Offeror shall provide a brief description of contract work and how that work is relevant (similar in size, content, and complexity) to the proposed effort or portion of the effort to be performed by the Offeror, teaming partner or Major Subcontractor. It is not sufficient to state that it is comparable in size, content, and complexity. The Offeror shall provide rationale supporting its assertion of relevancy and demonstrating that the work is comparable to this procurement. The Offeror shall identify the portion of the effort that will be performed by the Offeror (including each Joint Venture partner, if applicable), each teaming partner, and each Major Subcontractor. In addition to this information, the Offeror shall input the past performance in the matrix provided in Section L.II-6, Table 1, Sample PWS Past Performance Matrix, in accordance with the instructions provided in paragraph (g) below.

The Offeror shall also provide the additional requested information for each reference contract:

TO:

- (f) For each reference contract identified in Section (e), the Offeror shall provide a brief description of contract work and how that work is relevant (similar in size, content, and complexity) to the proposed effort or portion of the effort to be performed by the Offeror (including each predecessor business entity or Joint Venture partner, if applicable), teaming partner, or Major Subcontractor. It is not sufficient to state that it is comparable in size, content, and complexity. The Offeror shall provide rationale supporting its assertion of relevancy. The Offeror shall identify the portion of the effort that will be performed by the Offeror (including each predecessor business entity or Joint Venture partner, if applicable), each teaming partner, and each Major Subcontractor. In addition to this information, the Offeror shall input the past performance in the matrix provided in Section L.II-6, Table 1, Sample PWS Past Performance Matrix, in accordance with the instructions provided in paragraph (g) below. The Offeror shall also provide the additional requested information for each reference contract:

11. Provision L.II-6, Past Performance (Volume II), paragraph (f)(2)(iv) on page 37 of 58 of Section is revised as follows:

FROM:

- (iv) Copies of a redacted version of the U. S. Department of Labor OSHA Log of Work Related Injuries and Illnesses – OSHA Form 300, and the Summary of Work Related Injuries and Illnesses-OSHA Form 300A. Provide a statement and explanation of all OSHA citations provided.

TO:

- (iv) Copies of a redacted version of the U. S. Department of Labor OSHA Log of Work Related Injuries and Illnesses – OSHA Form 300, and the Summary of Work Related Injuries and Illnesses-OSHA Form 300A for the last three (3) years of reference contract(s). Provide a statement and explanation of all OSHA citations provided.

12. Provision L.II-6, Past Performance (Volume II), paragraph (i)(1) on page 38 of 58 of Section is revised as follows:

FROM:

- (1) Termination. Provide a list of any contract(s) and major subcontract(s) held by the Offeror, joint venture partner, teaming partner, or Major Subcontractor that were terminated (partial or complete) for default. Include the contract number, name, address, and telephone number of the terminating officer. Include contracts that were “descoped” by the customer because of performance problems.

TO:

- (1) Termination. Provide a list of any contract(s) and major subcontract(s) held by the Offeror, joint venture partners, teaming partners, or Major Subcontractor that were terminated (partial or complete) for default. Include the contract number, name, address, and telephone number of the terminating officer. Include contracts that were “descoped” by the customer because of performance problems.

13. Provision L.II-6, Past Performance (Volume II), paragraph (i)(2) on page 39 of 58 of Section is revised as follows:

FROM:

- (2) Labor Relations. Provide examples of prior contracts held by the Offeror, joint venture partner, teaming partner, or Major Subcontractor that included requirements for labor relations activities such as contract negotiations, grievance levels, and strike mitigation. If applicable, the Offeror shall provide examples of situations where the Offeror has successfully maintained ongoing operations in the event of a work stoppage. If applicable, the Offeror shall identify and explain resolution of any strikes against it, any Service Contract Act violations, and any issues with CBA compliance, enforcement, and/or implementation.

TO:

- (2) Labor Relations. Provide examples of prior contracts held by the Offeror, joint venture partner, teaming partner, or Major Subcontractor that included requirements for labor relations activities such as contract negotiations, grievance levels, and strike mitigation. If applicable, the Offeror shall provide examples of situations where the Offeror has successfully maintained ongoing operations in the event of a work stoppage. If applicable, the Offeror shall identify and explain any Service Contract Act violations and any issues with CBA compliance, enforcement, and/or implementation.

14. Provision L.II-6, Past Performance (Volume II), paragraph (j) on page 39 of 58 of Section is revised as follows:

FROM:

- (j) Independent Past Performance Information. The SEB will consider relevant information provided by the Offeror including past performance information for Joint Ventures partners, teammates, and Major Subcontractors, and may consider independently obtained information from Government sources (e.g. Past Performance Information Retrieval System (PPIRS)), and non-Government sources, in assessing the Offeror’s Past Performance. While NASA may elect to consider data obtained from other sources, Offerors retain the burden of providing relevant references that NASA can readily contact

and for presenting information establishing the relevance of their past performance to NASA's requirements under this solicitation.

TO:

- (j) Independent Past Performance Information. The SEB will consider relevant information provided by the Offeror, including past performance information for Joint Venture partners, teaming partners, and Major Subcontractors, and may consider independently obtained information from Government sources (e.g. Past Performance Information Retrieval System (PPIRS)), and non-Government sources, in assessing the Offeror's Past Performance. While NASA may elect to consider data obtained from other sources, Offerors retain the burden of providing relevant references that NASA can readily contact and for presenting information establishing the relevance of their past performance to NASA's requirements under this solicitation.

15. Provision L.II-7, Cost/Price, Attachment 1 Electronic Pricing Model (EPM) is revised as follows:

Numerous workbook tabs have been revised to ensure the PWS number on the forms align to the PWS number identified in the PWS (Attachment J-1).

16. Provision M.5, Mission Suitability (Volume I), paragraph (b)(1) on page 6 of 17 of Section is revised as follows:

FROM:

- 1) SUBFACTOR 1 - Technical Performance (TECH): The Offeror's proposed approach to the Technical Performance Subfactor and the detail substantiating the proposed approach will be evaluated to determine the extent to which the Offeror has demonstrated a thorough and comprehensive understanding of technical requirements as specified in the PWS. For each proposed innovation, the Government will evaluate the appropriateness and its potential for effective and efficient implementation in the contract.

TO:

- 1) SUBFACTOR 1 - Technical Performance (TECH): The Offeror's proposed approach to the Technical Performance Subfactor and the detail substantiating the proposed approach will be evaluated to determine the extent to which the Offeror has demonstrated a thorough and comprehensive understanding of technical requirements as specified in the PWS. For each proposed synergy, consolidation, enhancement, or innovation, the Government will evaluate the appropriateness and its potential for effective and efficient implementation in the contract.

17. Provision M.5, Mission Suitability (Volume I), paragraph (b)(2) on page 7 of 17 of Section is revised as follows:

FROM:

- 2) SUBFACTOR 2 – Management Approach (MGMT): The Offeror’s response to the Management Approach Subfactors will be evaluated for the extent to which the Offeror has clearly demonstrated a thorough and comprehensive approach to managing the requirements specified in the PWS. For any proposed innovations, the Government will evaluate the appropriateness and its potential for effective and efficient implementation in the contract.

TO:

- 2) SUBFACTOR 2 – Management Approach (MGMT): The Offeror’s response to the Management Approach Subfactors will be evaluated for the extent to which the Offeror has clearly demonstrated a thorough and comprehensive approach to managing the requirements specified in the PWS. For each proposed synergy, consolidation, enhancement, or innovation, the Government will evaluate the appropriateness and its potential for effective and efficient implementation in the contract.
18. Provision M.6, Past Performance (Volume II), paragraph (a) on page 12 of 17 of Section is revised as follows:

FROM:

- (a) Under the Past Performance factor, NASA will evaluate each Offeror's current and recent record (including the record of any Teaming Partners, Joint Venture, and major subcontractors) of performing services or delivering products that are similar in size (magnitude), content (scope), and complexity (work performed at multiple sites & hybrid contract type) to the requirements of this solicitation. The Government will use past performance information from proposal data required by provision L.II-6, Volume II – Past Performance; information obtained by the SEB team based on communications with listed references; and data obtained from any other source available to the government, including, but not limited to, the NASA Past Performance Database, the Past Performance Information Retrieval System, the Federal Awardee Performance and Integrity Information System, or other databases; interviews with Program Managers, Contracting Officers, and Fee-Determining Officials; and the Defense Contract Management Agency. Offerors are to note that, in conducting this assessment, the Government reserves the right to use both data provided by the Offeror and data obtained from other sources. The Government will consider the number and severity of problems, the effectiveness of corrective actions taken and the overall record of past performance. It shall also consider the Offeror’s record for adherence to contract schedules and cost control. Offerors without a record of relevant past performance, or for whom information on past performance is not available, shall receive a “Neutral” rating.

The Offeror’s past performance record will be examined for recent and relevant past performance to determine its ability to perform the required work.

TO:

- (a) Under the Past Performance factor, NASA will evaluate each Offeror's recent record (including the record of any Teaming Partners, Joint Venture, and major subcontractors) of performing services or delivering products that are similar in size (magnitude), content (scope), and complexity (work performed at multiple sites & hybrid contract type) to the requirements of this solicitation. The past performance evaluation will also consider the relevant past performance of affiliated companies or operating divisions within the parent company, or of joint venture partners, when it is reasonable to attribute the performance of the past efforts to the proposed effort and when the proposal clearly demonstrates the resources (e.g. financial resources, overall oversight and management, or other resources) of the parent or affiliated division, predecessor entity, or joint venture partner, will meaningfully affect performance of the instant acquisition.

The Government will use past performance information from proposal data required by provision L.II-6, Volume II – Past Performance; information obtained by the SEB team based on communications with listed references; and data obtained from any other source available to the government, including, but not limited to, the NASA Past Performance Database, the Past Performance Information Retrieval System, the Federal Awardee Performance and Integrity Information System, or other databases; interviews with Program Managers, Contracting Officers, and Fee-Determining Officials; and the Defense Contract Management Agency. Offerors are to note that, in conducting this assessment, the Government reserves the right to use both data provided by the Offeror and data obtained from other sources. The Government will consider the number and severity of problems, the effectiveness of corrective actions taken and the overall record of past performance. It shall also consider the Offeror's record for adherence to contract schedules and cost control. Offerors without a record of relevant past performance, or for whom information on past performance is not available, shall receive a "Neutral" rating.

The Offeror's past performance record will be examined for recent and relevant past performance to determine its ability to perform the required work.

19. Provision M.6, Past Performance (Volume II), paragraph (c) on page 12/13 of 17 of Section is revised as follows:

FROM:

- (c) Relevancy: The SEB will evaluate the relevancy of the Offeror's (including subcontractors, joint ventures, and other team members) past performance. More relevant past performance will typically be a stronger predictor of future success and have more influence on the past performance confidence assessment than past performance of lesser relevance. In determining relevancy for individual contracts, consideration will be given to the effort, or portion of the effort, being proposed by the Offeror, teaming partner, or subcontractor whose contract is being reviewed and

evaluated. Higher relevancy will be assessed for contracts that are most similar to the effort, or portion of the effort, for which that contractor is being proposed. The Government is not bound by the Offeror's opinion of relevancy. For purposes of this procurement, relevancy will be assessed using the following definitions:

TO:

- (c) **Relevancy:** The SEB will evaluate the relevancy of the Offeror's (including subcontractors) and other teaming partners) past performance. More relevant past performance will typically be a stronger predictor of future success and have more influence on the past performance confidence assessment than past performance of lesser relevance. In determining relevancy for individual contracts, consideration will be given to the effort, or portion of the effort, being proposed by the Offeror, teaming partner, or subcontractor whose contract is being reviewed and evaluated. Higher relevancy will be assessed for contracts that are most similar in size, content and complexity to the effort, or portion of the effort, for which that contractor is being proposed. The Government is not bound by the Offeror's opinion of relevancy. For purposes of this procurement, relevancy will be assessed using the following definitions:

20. Provision M.6, Past Performance (Volume II), paragraph (d)(5) on page 14 of 17 of Section is revised as follows:

FROM:

- (5) The Offeror's last three years of Labor Relations past performance, including past performance related to working with collective bargaining agreements, settling disputes and/or strike mitigation. The SEB will also consider the Offeror's strike history, Service Contract Act violations, and issues with CBA compliance, enforcement and/or implementation.

TO:

- (5) The Offeror's last three years of Labor Relations past performance, including past performance related to working with collective bargaining agreements, settling disputes and/or strike mitigation will be considered. The SEB will also consider the Offeror's Service Contract Act violations, and issues with CBA compliance, enforcement and/or implementation.

21. Provision L.I-24C, Staffing Worksheet,

A. Column C is revised as follows:

FROM:

PWS area(s) assigned (PWS level 3 (level 2 when applicable)) AND Column C, Identifies the PWS paragraph number (PWS level 3 (level 2 when applicable)).

TO:

PWS area(s) assigned (Applicable PWS level) AND Column C, Identifies the PWS paragraph number (applicable PWS level).

- B. Additional worksheets have been provided to identify and correspond with the contract periods.

22. Attachment J-2, DRD PC18-1.1, Strike Plan, page 1, Section 7 is revised as follows:

FROM:

No later than 60 days preceding the phase-in start date

TO:

No later than 60 days after award of contract

23. Attachment J-2, DRD SA17-5.4, Wellness and Fitness Center Status, Section 11(2) is revised as follows:

FROM:

2. The report shall include an operating profit and loss statement to include utility and maintenance costs.

TO:

2. Reserved.

24. Performance Work Statement (PWS), section 1.3.2 Work Control Management, paragraph (f) on page 29 of 230 of Section is revised as follows:

FROM:

- (f) Utilize the Computerized Maintenance Management System (CMMS) to control, schedule, and monitor operations, maintenance, trouble calls, service requests, and all other operations and activities requested, as required in PWS Section 6.0.

**NOTE:** The Contractor shall utilize the Government-provided CMMS and Maximo to the maximum extent practicable when entering, managing, and tracking work requirements.

TO:

- (f) Utilize the Computerized Maintenance Management System (CMMS) to control, schedule, and monitor operations, maintenance, trouble calls, service requests, and all

other operations and activities requested, as required in PWS Section 6.0.

**NOTE:** The Contractor shall utilize the Government-provided CMMS (see Attachment J-9) to the maximum extent practicable when entering, managing, and tracking work requirements.

25. Performance Work Statement (PWS), section 1.3.3 on page 36 of 230 of Section is revised as follows:

FROM:

Davis-Bacon Act Work	All Davis-Bacon work over \$350,000 per project, including labor and materials, shall not be performed by prime contract employees except at the discretion of and specifically written direction by the CO/COR.	Sixty (60) projects	No instances of Prime Contractor employees performing construction work over \$350,000 per project unless approved in writing by CO/COR.
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TO:

Davis-Bacon Act Work	All Davis-Bacon work over \$350,000 per project, including labor and materials, shall not be performed by prime contract employees except at the discretion of and specifically written direction by the CO/COR.	Ten (10) projects	No instances of Prime Contractor employees performing construction work over \$350,000 per project unless approved in writing by CO/COR.
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26. Performance Work Statement (PWS), section 2.1.2 on page 45 of 230 of Section is revised as follows:

FROM:

Shipping and Packaging	Prepare all routine shipments of equipment and materials from SSC.	4460	Appropriate paperwork and cost data shall accompany freight through shipping process.
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TO:

Shipping and Packaging	Prepare all routine shipments of equipment and materials.	4460	Appropriate paperwork and cost data shall accompany freight through shipping process.
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27. Performance Work Statement (PWS), section 3.4 Environmental Services on page 90 of 230 of Section is revised as follows:

FROM:

Permits and Waivers	Develop/update permit applications for environmental media or waivers per DRD EN 26-3.4, <i>Permit and Wavier Report</i> .	Two (2) permit updates and one (1) wavier	In accordance with DRD
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TO:

Permits and Waivers	Develop/update permit applications for environmental media or waivers per DRD EN 26-3.4, <i>Permit and Waiver Report</i> .	SSC: 2 permits and 1 wavier; MAF 2 Permits and 1 wavier	In accordance with DRD
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28. Performance Work Statement (PWS), section 4.6.1 Management of Shared Manufacturing Area/Resources, on page 129 of 230 of Section is revised as follows:

FROM:

4.6.1 Management of Shared Manufacturing Areas/Resources

TO:

4.6.1 Management of Shared Manufacturing Areas/Resources (MAF Only)

29. Performance Work Statement (PWS), section 5.3 Grounds Maintenance and Integrated Pest Control, on page 153 of 230 of Section is revised as follows:

FROM:

PWS TITLE	REQUIREMENTS	ESTIMATED WORKLOAD DATA	PERFORMANCE STANDARD
<b>5.3 Grounds Maintenance and Integrated Pest Control</b>			
<b>Mowing</b>	Perform grass cutting/mowing during seasonal months.	SSC: Area I-101 acres; Area II-294 acres; Area III-372 acres; Area IV-500 acres	The Contractor shall maintain grass cutting in Area 1, Area 2, Area 3, and Area 4 per MAF Area Mowing Schedule and SSC Lawn/Road

PWS TITLE	REQUIREMENTS	ESTIMATED WORKLOAD DATA	PERFORMANCE STANDARD
		MAF: Area 1-160 acres; Area 2-280 acres; Area 3-250 acres	Maintenance Maps. Additionally, Area 1 shall be maintained to ensure grass levels are no lower than 1-1/2 inches and no higher than 2-1/2 inches.
	Perform grass cutting during non-seasonal months in Areas 1 & 2.	Three (3) cuts maximum	Nothing Additional.
<b>Line Trimming</b>	Line trimming/weed eating shall be performed each time mowing occurs. Grass and weeds shall be trimmed in areas and including, but not be limited to, landscape borders, flower beds, trees, shrubs, buildings, fences, poles, posts, fire hydrants, parking lot bumper blocks, and other fixed obstacles. 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.	As required	Within twenty (24) hours after grass cutting/mowing in same/adjacent areas.

TO:

PWS TITLE	REQUIREMENTS	ESTIMATED WORKLOAD DATA	PERFORMANCE STANDARD
<b>5.3 Grounds Maintenance and Integrated Pest Control</b>			
<b>Mowing</b>	Perform grass cutting/mowing during seasonal months.	Reference MAF Area Mowing Schedule & SSC Lawn/Road Maintenance Maps	The Contractor shall maintain grass cutting in Area 1, Area 2, Area 3, and Area 4 per MAF Area Mowing Schedule and SSC Lawn/Road Maintenance Maps. Additionally, Area 1 shall be maintained to ensure grass levels are no lower than 1-1/2 inches and no higher than 2-1/2 inches.

PWS TITLE	REQUIREMENTS	ESTIMATED WORKLOAD DATA	PERFORMANCE STANDARD
	Perform grass cutting during non-seasonal months in Areas 1 & 2.	Three (3) cuts maximum	Nothing Additional.
<b>Line Trimming</b>	Line trimming/weed eating shall be performed each time mowing occurs. Grass and weeds shall be trimmed in areas and including, but not be limited to, landscape borders, flower beds, trees, shrubs, buildings, fences, poles, posts, fire hydrants, parking lot bumper blocks, and other fixed obstacles. 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.	As required	Within twenty (24) hours after grass cutting/mowing in same/adjacent areas.

30. Performance Work Statement (PWS), section 5.3 Grounds Maintenance and Integrated Pest Control, on page 155 of 230 of Section is revised as follows:

FROM:

<b>Storm Clean-Up (Non-disaster)</b>	The Contractor shall provide post-storm clean-up, removing debris, such as fallen trees and branches, which present an immediate danger to customers.	<b>SSC:</b> Ten (10) occurrences <b>MAF:</b> Two (2) occurrences	Begin clean-up within one (1) hour of notification.
<b>Emergency Preparation and Clean-up (Disaster)</b>	Perform storm site preparation activities (i.e., tidying of grounds areas and removal of debris that poses a threat under high winds, sand bag preparation and distribution, building roof debris removal, etc.).  The Contractor shall be capable of providing emergency clean-up in accordance with PWS Section 1.1.4.	<b>SSC:</b> Two (2) <b>MAF:</b> Two (2)	Complete as required.

TO:

RESERVED			
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	RESERVED		

31. Performance Work Statement (PWS), section 5.3 Grounds Maintenance and Integrated Pest Control, on page 156 of 230 of Section is revised as follows:

FROM:

<b>Pruning – Hedges, Shrubs &amp; Trees</b>	Shrubs shall be pruned only to promote normal development and the removal of damaged or dead limbs.	Young Hedges/Shrubs - As required	No visual damage or dead limbs.
	Trimming shall be performed in a manner that maintains or enhances the plant’s natural growth patterns.	Mature Hedges/Shrubs - Annually	

TO:

<b>Pruning – Hedges, Shrubs &amp; Trees</b>	Shrubs shall be pruned only to promote normal development and the removal of damaged or dead limbs.	<b>MAF:</b> 2800LF mature shrubs/ hedges & 300 LF young shrubs/ hedges <b>SSC:</b> 2100 LF of shrubs/hedges & 300 LF young shrubs/hedges	No visual damage or dead limbs.
	Trimming shall be performed in a manner that maintains or enhances the plant’s natural growth patterns.		
	Mature Shrubs/hedges (Annually) Young Shrubs/Hedges (As Required)		

32. Performance Work Statement (PWS), section 5.7.2 Energy Management and Water Conservation, on page 177/178 of 230 of Section is revised as follows:

FROM:

Create and Maintain Energy Records	Create and maintain records on project proposals/developments, white papers, energy savings estimates, and onsite conservation project savings	Thirty-four (34) various submissions	Records shall be maintained in accordance with Section 1.1.2 of the
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	status/metrics.		PWS.
Support NASA Energy Manager	Contractor shall support the NASA Energy Manager in providing information and data upon request to include periodic (planned & ad hoc) Center, Agency, & Federal Data calls.	Twenty-two (22) times	Contractor shall provide response within suspense time stated on action request. Range is from one (1) week to forty-eight (48) hours.

Support Design Review	Support Design Reviews for onsite building construction and renovations.	Sixty (60) – 100 times	Respond in a timely manner, per specified review schedules.
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Consumption Records	Validate monthly utility meter readings; review and verify accuracy of monthly utility bills; and maintain and provide comprehensive energy monthly consumption records at the building or system level in accordance with DRD GA08-5.7 to fulfill data needs of Center, Agency and Federal reporting.	Eight (8) bills monthly	Record shall be submitted in accordance with DRD GS08-5.7.  Verified electronic copies of utility bills shall be submitted to the NASA Energy Manager, or designees, within ten (10) calendar days of receipt of invoice.
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TO:

Create and Maintain Energy Records	Create and maintain records on project proposals/developments, white papers, energy savings estimates, and onsite conservation project savings status/metrics.	Various submissions – SSC:22 MAF:12	Records shall be maintained in accordance with Section 1.1.2 of the PWS.
Support NASA Energy Manager	Contractor shall support the NASA Energy Manager in providing information and data upon request to include periodic (planned & ad hoc) Center, Agency, & Federal Data calls.	SSC: 11 Request  MAF:11 Request	Contractor shall provide response within suspense time stated on action request. Range is from one (1) week to forty-eight (48) hours.

Support Design Review	Support Design Reviews for onsite building construction and renovations.	Reviews SSC: 36-60 MAF: 24-40	Respond in a timely manner, per specified review schedules.
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Consumption Records	Validate monthly utility meter readings, review maintain and provide comprehensive energy monthly consumption records at the building or system level in accordance with DRD GA08-5.7 to fulfill data needs of Center, Agency, and Federal Reporting.	SSC: 5 Monthly  MAF: 3 Monthly	Record shall be submitted in accordance with DRD GS08-5.7.  Verified electronic copies of meter readings shall be submitted to the NASA Energy Manager, or designees, within ten (10) calendar days of receipt of invoice.
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33. Performance Work Statement (PWS), section 5.8, paragraph A and B, on page 180/181 of 230 of Section is revised as follows:

FROM:

A. Scope

The Contractor shall furnish all personnel, supervision, and management necessary to provide emergency response and fire protection services on a twenty-four (24) hour per day, seven (7) days per week, fifty-two (52) weeks per year basis, including holidays. Equipment provided by the Government is indicated in Attachment J-1, Appendix A, *Additional Workload Data* and Attachment J-9, *Government Furnished Property*. In accordance with PWS 5.8, the Government will provide the required and approved Equipment with the exception of the fire trucks identified as "Fire/ Rescue Vehicle" and "2009 E-one HP 78 78' AERIAL LADDER" on the Government depreciation list located in Attachment J-9, Historical and Reference Data folder. In accordance with RFP Section G.8, the Government will approve the SACOM Contractor to depreciate the fire trucks identified as "Fire/ Rescue Vehicle" and "2009 E-one HP 78 78' AERIAL LADDER" on the Government depreciation list. In the event additional equipment, material, tools or supplies are needed to accomplish the work described below in section B, General Requirements, the contractor shall submit the request to the NASA Fire Protection Manager.

B. General Requirements

The Contractor shall provide fire and ambulance service fully staffed with qualified personnel in accordance with National Fire Protection Association (NFPA) standards, NASA-STD-8719.11, *Safety Standard for Fire Protection*, SPR 8715.1, *Safety and Health Program Requirements* and the referenced requirements within these publications. The minimum staffing of qualified personnel shall be such that two engine companies, with the capability of a minimum of 2 EMTs, will respond to each alarm and safely

operate concurrently between the two (2) units as minimally required by NFPA standards. The ambulance service is for immediate response only. Upon assessment and initial stabilization treatments, the injured person should be transported to the clinic or to regional medical facilities offsite as the situation dictates.

The Contractor shall develop and operate a Breathing Air Program, including the test and maintenance of all related equipment, supplies, air quality, and filling of Self Contained Breathing Apparatus (SCBAs).

The Contractor shall maintain access to all documentation (i.e., drawings, floor plans, procedures, plans) for daily reference by fire protection personnel.

Maintenance of PPE/clothing (i.e., boots, pants, helmets, etc.) is requirements associated with this section of the PWS. The Contractor shall be responsible for maintaining this equipment in a safe, serviceable/operable condition and to repair, or identify for replacement, any equipment as required.

Maintenance requirements of all fire protection hydrants, facility systems/fixtures, vehicles/ mobile equipment, and repairs of Government-furnished fire-fighting equipment are addressed in PWS Section 6.2.

TO:

A. Scope

The Contractor shall furnish all personnel, supervision, and management necessary to provide emergency response and fire protection services on a twenty-four (24) hour per day, seven (7) days per week, fifty-two (52) weeks per year basis, including holidays. Equipment provided by the Government is indicated in Attachment J-1, Appendix A, *Additional Workload Data* and Attachment J-9, *Government Furnished Property*. In accordance with PWS 5.8, the Government will provide the required and approved Equipment with the exception of PPE/clothing (i.e., boots, pants, helmets, etc.) and the fire trucks identified as "Fire/ Rescue Vehicle" and "2009 E-one HP 78 78' AERIAL LADDER" on the Government depreciation list located in Attachment J-9, Historical and Reference Data folder. In accordance with RFP Section G.8, the Government will approve the SACOM Contractor to depreciate the fire trucks identified as "Fire/ Rescue Vehicle" and "2009 E-one HP 78 78' AERIAL LADDER" on the Government depreciation list. In the event additional equipment, material, tools or supplies are needed to accomplish the work described below in section B, General Requirements, the contractor shall submit the request to the NASA Fire Protection Manager.

B. General Requirements

The Contractor shall provide fire and ambulance service fully staffed with qualified personnel in accordance with National Fire Protection Association (NFPA) standards,

NASA-STD-8719.11, *Safety Standard for Fire Protection*, SPR 8715.1, *Safety and Health Program Requirements* and the referenced requirements within these publications. The minimum staffing of qualified personnel shall be such that two engine companies, with the capability of a minimum of 2 EMTs, will respond to each alarm and safely operate concurrently between the two (2) units as minimally required by NFPA standards. The ambulance service is for immediate response only. Upon assessment and initial stabilization treatments, the injured person should be transported to the clinic or to regional medical facilities offsite as the situation dictates.

The Contractor shall develop and operate a Breathing Air Program, including the test and maintenance of all related equipment, supplies, air quality, and filling of Self Contained Breathing Apparatus (SCBAs).

The Contractor shall maintain access to all documentation (i.e., drawings, floor plans, procedures, plans) for daily reference by fire protection personnel.

Maintenance of Contractor-provided PPE/clothing (i.e., boots, pants, helmets, etc.) is a requirement associated with this section of the PWS. The Contractor shall be responsible for maintaining this equipment in a safe, serviceable/operable condition and to repair, or identify for replacement, any equipment as required.

Maintenance requirements of all fire protection hydrants, facility systems/fixtures, vehicles/ mobile equipment, and repairs of Government-furnished fire-fighting equipment are addressed in PWS Section 6.2.

34. Performance Work Statement (PWS), section 6.0 Facility Operations and Maintenance, paragraph (D)(1) on page 202 of 230 of Section is revised as follows:

FROM:

O&M requirements shall be recorded in the CMMS for the purposes of identifying discrepancies and tracking the history of all O&M for FSEU. The CMMS shall have the following minimum capabilities:

TO:

O&M requirements shall be recorded in the CMMS for the purposes of identifying discrepancies and tracking the history of all O&M for FSEU. The CMMS shall have the following minimum capabilities (within 60 calendars days of Contract Start Date):

35. Performance Work Statement (PWS), section 6.1.7, paragraph 2, on page 209 of 230 of Section is revised as follows:

FROM:

2. Natural Gas Operations

The natural gas systems shall be operated to ensure a continuous flow of gas is available at all times and that systems are compliant with state requirements. The operation of the natural gas systems shall include, but is not limited to, reading meters and recording findings, maintaining natural gas logs, inspecting valves, inspecting distribution systems for leaks, providing operational support for gas curtailment, and identifying above ground markers.

TO:

2. Natural Gas Operations

The natural gas systems shall be operated to ensure a continuous flow of gas is available at all times and that systems are compliant with state requirements. The operation of the natural gas systems shall include, but is not limited to, reading meters and recording findings, maintaining natural gas logs, inspecting valves, inspecting distribution systems for leaks and providing operational support for gas curtailment.

36. Performance Work Statement (PWS), section Performance Requirement Summary (PRS), Item 1.3 and 1.4 on page 226 of 230 of Section is revised as follows:

FROM:

<b>1.3</b>	<b>BUSINESS MANAGEMENT</b>	<b>46%</b>	
	(a) Responsiveness to multiple customers; maintain flexibility in management operating systems and controls for changing service requirements and prioritizing tasks to accommodate competing demands.	42%	(a) No disrupted services to any customers; work management program accessible to customers and identifies work by PWS and work authorization; no instances of costs exceeding approved amount without approval; standards under 1.2.5.
	(b) Develop, implement and maintain a financial management process which complies with all requirements specified in Section 1.2.4 of this PWS.		(b) No instances of system or process non-compliance.
	(f) Provide notifications of unscheduled site outages, failures, and/or anomalies.		(f) Provide immediate notification per PWS section 1.2.5.
<b>1.4</b>	<b>BUSINESS DEVELOPMENT</b>	<b>4%</b>	

a) Provide new viable prospective tenants to NASA Site Development Lead for potential occupancy.	10%	(a1) 10 new prospective tenants per year submitted to NASA. (YEARLY)***
	90%	(a2) Total (new, does not include current extensions) potential revenue due to occupancy equal to or greater than \$1M/year. (YEALRY)****

TO:

<b>1.3</b>	<b>BUSINESS MANAGEMENT</b>	<b>46%</b>	
(a) Responsiveness to multiple customers; maintain flexibility in management operating systems and controls for changing service requirements and prioritizing tasks to accommodate competing demands	42%	(a) No disrupted services to any customers; work management program accessible to customers and identifies work by PWS and work authorization; no instances of costs exceeding approved amount without approval; standards under 1.3.2.	
(b) Develop, implement and maintain a financial management process which complies with all requirements specified in Section 1.3.1 of this PWS.		(b) No instances of system or process non-compliance.	
(f) Provide notifications of unscheduled site outages, failures, and/or anomalies.		(f) Provide immediate notification per PWS section 1.3.2.	

<b>1.4</b>	<b>BUSINESS DEVELOPMENT</b>	<b>4%</b>	
a) Provide new viable prospective tenants to NASA Site Development Lead for potential occupancy.	10%	(a1) 10 new prospective tenants per year submitted to NASA. (YEARLY)***	
	90%	(a2) Total (new, does not include current extensions) potential revenue due to occupancy equal to or greater than \$1M/year. (YEARLY)****	

37. Attachment J-9, GFP, List 3 Government Furnished IT Systems and Applications (SSC Worksheet) is revised as follows:

FROM:

<b>APPLICATION / SOFTWARE</b>	<b>DESCRIPTION / DETAILS</b>	<b>CONTRACT PROVIDING SOFTWARE SUPPORT</b>	<b>USE MANDATED BY NASA *</b>
NASA Incident Reporting Information System (IRIS)	NASA's Safety Database and Environmental Health and Safety Data Management System	ITS	Mandatory

TO:

<b>APPLICATION / SOFTWARE</b>	<b>DESCRIPTION / DETAILS</b>	<b>CONTRACT PROVIDING SOFTWARE SUPPORT**</b>	<b>USE MANDATED BY NASA *</b>
NASA Mishap Information System (NMIS)	NASA's Safety Database and Environmental Health and Safety Data Management System	ITS	Mandatory

\* NASA reserves the right to modify or replace any applications designated as "use mandated by NASA". The successful bidder would be required to use the modified or new application.

\*\* The - represents the applications / software that the SACOM contractor would be required to perform software support if utilized.

38. Attachment J-9, GFP, List 3 Government Furnished IT Systems and Applications (MAF Worksheet) is revised as follows:

FROM:

<b>APPLICATION / SOFTWARE</b>	<b>DESCRIPTION / DETAILS</b>	<b>CONTRACT PROVIDING SOFTWARE SUPPORT</b>	<b>USE MANDATED BY NASA *</b>
Maximo	Maximo Version 6.2, includes the following modules: Administration, Asset Management, Configuration, Contracts, Financial, Navigator, Integrator, Inventory, Planning, Preventive Maintenance, Purchasing, Reporting, Resources, Safety, Security, Self Service, Service Desk, Work orders.	-	Mandatory

TO:

APPLICATION / SOFTWARE	DESCRIPTION / DETAILS	CONTRACT PROVIDING SOFTWARE SUPPORT**	USE MANDATED BY NASA *
Maximo	CCMS System. Maximo Version 6.2, includes the following modules: Administration, Asset Management, Configuration, Contracts, Financial, Navigator, Integrator, Inventory, Planning, Preventive Maintenance, Purchasing, Reporting, Resources, Safety, Security, Self Service, Service Desk, Work orders.	-	Mandatory

\* NASA reserves the right to modify or replace any applications designated as "use mandated by NASA". The successful bidder would be required to use the modified or new application.

\*\* The - represents the applications / software that the SACOM contractor would be required to perform software support if utilized.

39. Attachment J-10, Reference Library is revised as follows:

The following additional documents or revisions are added:

- A. John C. Stennis Space Center Utility Billing is added to folder titled, "SACOM-5.0."
- B. John C. Stennis Space Center Rocket Propulsion Test Operational Support Plan & System Requirements is currently in SACOM 4.0 and is added to folder titled, "Maintenance Instructions and Operating Plans" subfolder in SACOM-6.0.
- C. Attachment J-1, Appendix A, SSC Lawn Road Maintenance Map (page 3) is added to folder titled, "SACOM-5.0" as an interactive map.
- D. MAF Solid and Hazardous Waste Disposal History document title is revised to MAF Environmental Monthly Report and new data is provided in folder titled, "Historical & Reference Data."
- E. Refuse Containers document is added to folder titled, "Historical & Reference Data."
- F. SSC Refuse / Industrial Solid Waste document is added to folder, "Historical & Reference Data"
- G. Design Engineering – Core Historical Data document is added to folder titled, "Historical & Reference Data"

40. Attached are Change Sheets (replacement pages) that identifies the changes and the amendment number.

41. Questions and Answers dated June 16, 2014 are attached.

42. All other terms and conditions remain unchanged.

(c) The following property and services are provided if checked:

- (1) Office space, work area space, and utilities. Government telephones are available for official purposes only.
- (2) Office furniture. (The type, quantity and configuration of office furnishings to include conference and training rooms will be determined by the NASA Supply and Equipment Management Officer or designee.)
- (3) Property listed in Attachment J-9.
  - i. List 1 – IAGP (No Class Exceptions, Controlled)
  - ii. List 2 – IAGP “As-Is” (Government Will Not Repair or Replace)
  - iii. List 3 – Government Provided IT Systems and Applications

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, in accordance with the Contractor Acquired Property Onsite requirements outlined above under User Responsibilities.

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 or duly authorized representative’s prior written approval. The Contractor shall provide on a quarterly basis, a listing of Contractor owned/leased property. This listing shall be provided to the Supply and Equipment Management Officer.

- (4) Supplies from stores stock.
- (5) Publications and blank forms stocked by the installation (not otherwise available in electronic format)
- (6) Safety and fire protection for Contractor personnel and facilities.
- (7) Installation service facilities: (Fuels, oils, & lubrications for vehicles and equipment) (**Applicable to List 1, 2, & 3**).
- (8) Medical treatment of a first-aid nature for Contractor personnel injuries or illnesses sustained during onsite duty.
- (9) Cafeteria privileges for Contractor employees during normal operating hours.
- (10) Building maintenance for facilities occupied by Contractor personnel.

	VEGETATION (APR 1984)
52.237-3	CONTINUITY OF SERVICES (JAN 1991)
52.237-7	INDEMNIFICATION AND MEDICAL LIABILITY INSURANCE (JAN 1997) Fill-In: \$1,000,000
52.237-11	ACCEPTING AND DISPENSING OF \$1 COIN (SEP 2008)
52.239-1	PRIVACY OR SECURITY SAFEGUARDS (AUG 1996)
52.242-1	NOTICE OF INTENT TO DISALLOW COSTS (APR 1984) (CLINS X02 & 902)
52.242-3	PENALTIES FOR UNALLOWABLE COSTS (MAY 2001)
52.242-4	CERTIFICATION OF FINAL INDIRECT COSTS (JAN 1997)
52.242-13	BANKRUPTCY (JUL 1995)
52.243-1	CHANGES-FIXED-PRICE (AUG 1987) (CLINS X01 & 901)
52.243-2	CHANGES-COST REIMBURSEMENT- WITH (ALTERNATE II (APR 1984)) (AUG 1987) (CLINS X02 & 902)
52.243-7	NOTIFICATION OF CHANGES (APR 1984)
52.244-2	SUBCONTRACTS (OCT 2010)
52.244-5	COMPETITION IN SUBCONTRACTING (DEC 1996) (CLINS X02, 901 & 902)
52.245-1	GOVERNMENT PROPERTY (APR 2012)
52.245-9	USE AND CHARGES (APR 2012)
52.246-23	LIMITATION OF LIABILITY (FEB 1997)
52.246-25	LIMITATION OF LIABILITY – SERVICES (FEB 1997)
52.247-1	COMMERCIAL BILL OF LADING NOTATIONS (FEB 2006)
52.247-63	PREFERENCE FOR U.S. FLAG AIR CARRIERS (JUN 2003)
52.247-64	PREFERENCE FOR PRIVATELY OWNED U.S. FLAG COMMERCIAL VESSELS (FEB 2006)
52.248-1	VALUE ENGINEERING (OCT 2010)
52.249-2	TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) (APR 2012) (CLINS X01 & 901)
52.249-6	TERMINATION (COST REIMBURSEMENT) (MAY 2004) (CLINS X02 & 902)
52.249-8	DEFAULT (FIXED-PRICE SUPPLY AND SERVICE) (APR 1984) (CLINS X01 & 901)
52.249-14	EXCUSABLE DELAYS (APR 1984) (CLINS X02 & 902)
52.251-1	GOVERNMENT SUPPLY SOURCES (APR 2012)
52.251-2	INTERAGENCY FLEET MANAGEMENT SYSTEM (IFMS) VEHICLES AND RELATED SERVICES (JAN 1991) (CLINS X02 & 902)
52.253-1	COMPUTER GENERATED FORMS (JAN 1991)

II. NASA FAR SUPPLEMENTS (48 CFR CHAPTER 18) PROVISIONS:

NUMBER	TITLE	DATE
1852.227-71	REQUESTS FOR WAIVER OF RIGHTS TO INVENTIONS	APR 1984
1852.227-84	PATENT RIGHTS CLAUSE	DEC 1989
1852.233-70	PROTESTS TO NASA	OCT 2002

**L.I-2. COMMUNICATIONS AND REQUESTS FOR INFORMATION**

- (a) Any communications in reference to this solicitation shall cite the solicitation number and be directed to the following Government representative:

Name: Marvin L. Horne  
Contracting Officer

Address: NASA/John C. Stennis Space Center  
Attn: Marvin L. Horne  
Building 1100, RM 253, Mail Code DA10  
Stennis Space Center, MS 39529-6000

Phone/Email: (228) 688-3528 - [Marvin.L.Horne@nasa.gov](mailto:Marvin.L.Horne@nasa.gov)

- (b) COMMUNICATIONS (QUESTIONS/COMMENTS) REGARDING THIS SOLICITATION MUST BE SUBMITTED IN WRITING to the Government representative identified above not later than 3:00p.m. on June 18, 2014, for Volumes I, II, III, IV, Mission Suitability, Past Performance, Cost/Price and Model Contract, respectively.

(End of Provision)

**L.I-3. TYPE OF ACQUISITION**

This Acquisition will be conducted with full and open competition.

(End of Provision)

**L.I-4. REQUIREMENTS FOR CERTIFIED COST OR PRICING DATA AND DATA OTHER THAN CERTIFIED COST OR PRICING DATA (FAR 52.215-20) (OCT 2010) ALTERNATE III (OCT 1997) ALTERNATE IV (OCT 2010)**

- (a) Submission of certified cost or pricing data is not required.
- (b) Provide information described in Section L.II-7, Cost/Price, and data pursuant to FAR 15.403-3.

- (g) Waiver. The agency reserves the right to waive the requirements of FAR 9.5, in accordance with FAR 9.503.
- (h) Resultant Contract.
  - 1) If determined by the Contracting Officer to be necessary to mitigate existing or anticipated conflicts of interest, the resultant contract will include the successful Offeror's Government-approved OCI Plan; and a clause, the same or substantially similar to Clause H.4, will be included in the resultant contract.
  - 2) If a limitation on future contracting is necessary to address an organizational conflict of interest, the resultant contract will include NFS clause 1852.209-71 entitled "Limitation of Future Contracting." (See Clause H.6).

(End of Provision)

#### **L.I-22. SYNERGY, CONSOLIDATION, ENHANCEMENT, AND INNOVATION**

Throughout its proposal, the Offeror is encouraged to identify proposed synergies, consolidations, enhancements, and/or innovations that will enhance performance and reduce overall costs of acquired services without increasing risk of unsuccessful contract performance to the Government. Synergies, consolidations, enhancements, and/or innovations can be defined as including, but are not limited to, the originality, soundness, and feasibility of ideas or processes as they relate to the way in which the Offeror's organization will manage and perform the entire contract throughout the contract term. Each proposed synergy, consolidation, enhancement, and/or innovation shall adhere to the following ground rules: PWS requirements shall not change; both sites (SSC & MAF) shall be operated; and there shall be no use of Enhanced Use Lease agreements or Space Act Agreements (agreements required to lease space on SSC or MAF) nor any upfront investment(s) or cost(s) by the Government. The Offeror is advised that nothing in the above instructions authorizes the submission of alternate proposals. The Offeror shall provide a thorough description of each identified synergy, consolidation, enhancement, or innovation under the appropriate Mission Suitability Subfactor. Any costs or savings associated with an identified synergy, consolidation, enhancement, or innovation should be reflected in the Offeror's proposed price. The Offeror is advised that the Government may incorporate some or all of the proposed synergies, consolidations, enhancements, and/or innovations identified into the resulting contract, depending upon whether or not the Government determines that implementation is adequately described and will benefit the Government. The synergies, consolidations, enhancements, and/or innovations accepted by the Government at the discretion of the Contracting Officer will become binding contractual requirements and will be incorporated in accordance with Clause H.26, Synergy, Consolidation, Enhancement, and Innovation.

(End of Provision)

RFP fill-ins. Electronic copies shall not contain hidden formulas, tables, be locked, be protected, or contain links to data not included in the electronic copy. Text, tables, and graphics shall allow for copy and paste into other applications.

- 2) Each volume must be stored on a separate CD-ROM/DVD or set of CD-ROMs/DVDs. Each CD-ROM/DVD must reside in an individual case. If a volume extends to multiple CD-ROMs/DVDs, the Offeror shall clearly indicate the sequence number. Each CD-ROM/DVD submitted shall include an external label with the Offeror's name, date of proposal, and the solicitation number and annotated "Source Selection Information - See FAR 2.101 and FAR 3.104." Labeling of each CD-ROM or DVD, as well as each case, is required. CD-ROM/DVD numbering shall correspond with that of the original and hardcopies identified in Section L.II-2. The CD-ROMs/DVDs shall be placed in the front of each corresponding binder.
- 3) CD-ROM/DVD information must be submitted on quality media that is virus-scanned, virus-free, and error free.
- 4) Text information shall be 100% searchable. File compression shall not be used.
- 5) The Offeror shall not embed sound or video files into the proposal files and shall keep embedded graphics as simple as possible.

(End of Provision)

### **L.II-3. ADDITIONAL DOCUMENTATION**

The Offeror shall submit the following additional required documentation (NOTE: This documentation will not be evaluated as part of the Mission Suitability Factor):

- (a) Government Property Management Information: The Offeror shall submit the information required by NFS 1852.245-80, Government Property Management Information and DRD LS07-2.2, Government Property Management Plan. The Government will review this information to determine whether or not the Offeror's proposed industry leading standards and practices and/or voluntary consensus standards are sufficient to manage property, from planning through disposition, under the circumstances of the contract. The Government will not accept risk under the Government Property clause until any findings from the Government review of the information have been adequately addressed by the Contractor. The successful Offeror shall have an approved Government Property Management Plan prior to the end of Phase-In.
- (b) Safety and Health Plan: The Offeror shall submit the information required by NFS 1852.223-73, Safety and Health Plan, and DRD SA01-3.0, Safety and Health Plan.

- (c) Although the Safety and Health Plan will not be evaluated under the Mission Suitability factor, the Government will review the submitted information to verify the Offeror's compliance with the applicable safety and health requirements. The successful Offeror shall have an approved Safety and Health Plan prior to end of Phase-In.
- (d) Organizational Conflict of Interest (OCI) Plan: The Offeror shall submit the information required by Provision L.I-21 and DRD PC06-1.1.

(End of provision)

**L.II-4. PROPOSAL PAGE LIMITATIONS (NFS 1852.215-81) (FEB 1998)**

- (a) Proposals shall adhere to the following proposal page limitation identified below:

**Section L.II-4, Table 1**

VOLUME	VOLUME PROPOSAL PAGE LIMIT
<b>VOLUME I - MISSION SUITABILITY</b>	
Factor 1 – Mission Suitability	Not-to-exceed (NTE) 250 Pages
<b>VOLUME II - PAST PERFORMANCE</b>	
Factor 2 – Past Performance	NTE 40 pages (Exceptions to Page Count include OSHA Form 300 and 300A & Past Performance Questionnaire)
Past Performance Questionnaires	NTE 4 questionnaires for the Offeror and NTE 2 questionnaires for each Major Subcontractor
OSHA Form 300 & 300A	No Limit
Organizational Conflict of Interest (OCI) Plan (DRD PC06-1.1)	No Limit (is not included in Past Performance Page Count)
<b>VOLUME III - COST/PRICE</b>	
Factor 3 – Cost/Price (includes information addressed in Section L.II-7)	No Limit
<b>VOLUME IV – MODEL CONTRACT</b>	
Model Contract (includes information identified at L.II-8)	No Limit

- (b) A page is defined as one side of a sheet, 8 ½" x 11", with a minimum of one (1) inch margins on all sides using not less than twelve (12)-point type Times New Roman font for standard text with normal kerning (spacing between individual characters). The proposal text shall be printed on non-glossy white paper. Non-standard text, including graphics, charts, tables, and callouts, shall be used to

supplement narrative text only and shall use no smaller than eight (8)-point type Times New Roman font. Non-standard text shall not be used to avoid the RFP page limitations (e.g., providing substantive narrative information in table format using eight (8)-point type). Illustrations, charts, other images, and pocket inserts are all included in the limitation total. All sheets (except foldouts and Model Contract, Volume IV contents to include the Government Property Management Plan, and the Safety and Health Plan) shall be two-sided; each side counts as one page. Foldouts (except foldouts for Cost/Price Volume III) count as an equivalent number of 8 ½" x 11" pages and shall be printed on one (1) side only. The front of the foldout shall have a page number for each equivalent 8 ½" x 11" page and the backs shall be blank and not be numbered. Foldouts shall be limited to organizational charts or cost volume. Include in the numbering: Cover Pages, Table(s) of Contents, RFP Reference Matrix, and Key Term/Acronyms. All pages within volumes (attached or in pockets, full, half-full, or blank) will be counted, except for items in paragraph (f) below. All pages shall be submitted on at least 20 lb bond (non-glossy) paper.

- (c) Each volume shall contain a page numbering convention. For all volumes of the proposal, the Offeror shall consecutively number the pages, starting with "1." A partially filled page shall count as one (1) page, and shall be numbered as such.
- (d) If final proposal revisions are requested, separate page limitations will be specified in the subsequent Government request.
- (e) Pages submitted in excess of the limitations specified in this Provision will not be evaluated by the Government and will be returned to the Offeror immediately upon discovery (See NFS 1815.204-70(b)).
- (f) No exclusions are provided from page limitations in section L.II-4 Table 1 above, except for section dividers, Past Performance Interview/Questionnaire Forms submitted by the Offeror's customer references directly to the Contracting Officer and OSHA Form 300 and 300A. Section dividers are not considered a page and will not be evaluated; therefore, Offerors shall not include substantive proposal information on section dividers.
- (g) Material deemed to belong in other volumes will be treated as such and placed at the end of the appropriate volume for purposes of Paragraph (e) above.

(End of Provision)

*This space intentionally left blank.*

recent past performance information for contracts relevant (similar in size, content, and complexity) to the requirements of this acquisition involving facility services, manufacturing support, and test support services. Each Major Subcontractor shall submit relevant past performance comparable to the portion of the proposed effort it will perform. Recency is defined as performance occurring within the last three (3) years of the date of the issuance of the solicitation, except the ongoing programs must have begun no less than six (6) months from issuance of the solicitation.

- (b) For an Offeror that is a newly formed businesses (including Joint Ventures) having little or no relevant past performance as the new business entity, the Offeror may submit the relevant past performance of a predecessor business entity (or, in the case of Joint Ventures, of each Joint Venture partner).
- (c) Offerors which are subsidiaries or affiliates of other business entities may submit the past performance of such other business entities for consideration but such past performance shall only be considered to the extent that the proposal clearly demonstrates that the resources (e.g. financial resources, overall oversight and management, or other resources) of the other companies will meaningfully affect the performance of the proposed contract.
- (d) Offeror shall layout the contents of this Volume to follow the organization of the sections, which follow, and the content shall be described in those sections.
- (e) Past Performance History. The Offeror shall provide, at a minimum, the following information as part of its Past Performance Volume to demonstrate the relevance of its recent past performance, and to facilitate the evaluation of past performance as a whole and as related to the requirements of the proposed contract. The Offeror shall provide the written consent of each proposed Major Subcontractor or predecessor business entity (including joint venture partners) to allow NASA to discuss the Subcontractors' or predecessor business entities' past performance with the Offeror.
  - 1) The Offeror shall provide a description of its team's relevant past performance history in meeting the requirements of Attachment J-1 PWS. The combined total of the Offeror's and proposed major subcontractors' past prime/subcontract experience shall be limited to no more than four (4) reference contracts for the Offeror and no more than two (2) reference contracts for each Major Subcontractor for which performance occurred within the last three (3) years. Past Performance with Government contracts is preferred, but not required.

- 2) The Offeror shall consider the following similarities to the SACOM effort in making their assessment of relevance:
  - i. Types of services provided (Content). Emphasis should be placed on the following technical and management areas that are similar to the requirements identified in Attachment J-1 PWS (the below shall not be construed as an indication of the order of importance):
    - a) Engineering Services
    - b) Institutional Services
    - c) Site Operations and Maintenance
    - d) Logistics and Transportation
    - e) Manufacturing Support
    - f) Test Support and Implementation
    - g) Contract Management
  - ii. Size (e.g., dollar value per year, total dollar value and number of WYEs).
  - iii. Complexity of the contract (e.g., work performed at multiple sites & hybrid contract type).

3) The Offeror, shall provide contract general information for all references.

- i. Customer's name, address, email, and telephone number of both the lead contractual and technical personnel. Please verify the telephone numbers provided are current and correct.
- ii. Contract number, type, and total original and present or final contract value.
- iii. Date of contract, place(s) of performance, and delivery dates or period of performance.
- iv. Method of acquisition: Competitive or Noncompetitive.
- v. Nature of award: Initial or Follow-on.
- vi. Number of subcontractors.

(f) **For each reference contract identified in Section (e)**, the Offeror shall provide a brief description of contract work and how that work is relevant (similar in size, content, and complexity) to the proposed effort or portion of the effort to be performed by the Offeror (including each predecessor business entity or Joint Venture partner, if applicable), teaming partner, or Major Subcontractor. It is not sufficient to state that it is comparable in size, content, and complexity. The Offeror shall provide rationale supporting its assertion of relevancy. The Offeror shall identify the portion of the effort that will be performed by the Offeror (including each predecessor business entity or Joint Venture partner, if applicable), each teaming partner, and each Major Subcontractor. In addition to this information, the Offeror shall input the past performance in the matrix provided in Section L.II-6, Table 1, Sample PWS Past Performance Matrix, in accordance with the instructions provided in paragraph (g) below. The Offeror shall also provide the additional requested information for each reference contract:

- 1) Subcontracting Plan. A statement of the Offeror' small business participation (e.g. targets, record) (e.g. Electronic Subcontracting Reporting System (ESRS)).
  - 2) Safety.
    - i. List all safety and health insurance carriers that have underwritten each referenced contract.
    - ii. Provide an Experience Modification Factor (EMF), a current point of contact and a current telephone number for each of the insurance carriers listed. The Offeror shall authorize the listed insurance carriers to respond to Government inquiries recording the Offeror's past safety performance.
    - iii. Provide the Days Away Restricted Transfer Rate (DART) and Total Reportable Injury Rate (TRIR) including the associated Standard Industrial Classification (SIC) Code or North American Industry Classification System (NAICS) Code.
    - iv. Copies of a redacted version of the U. S. Department of Labor OSHA Log of Work Related Injuries and Illnesses – OSHA Form 300, and the Summary of Work Related Injuries and Illnesses-OSHA Form 300A for the last three (3) years of reference contract(s). Provide a statement and explanation of all OSHA citations provided.
  - 3) Environmental. Provide a statement and explanation of all Federal, state, and local environmental violations. Give specific location(s), agency or company, point of contact, and current phone numbers related to each citation.
- (g) Offerors shall present a summary of relevant past performance information in matrix form as described by the Section L.II-6, Table 1, Sample PWS Past Performance Matrix, below in order to match past performance information with the sections of the PWS. Offerors are advised that the matrix is a summation of the reference contracts identified in Section (e) above. The required matrix information below is only provided as an example. In the first column of this matrix, insert the Contract Identifier – either a contract number, customer name, or other unique identifier that clearly identifies the contract and matches it with the past performance information submitted pursuant to the above instructions in Section (e). In the other columns of the matrix, indicate the work the Offeror has performed that is similar or related to each element of the current requirement as presented in the matrix (if applicable, please identify the appropriate PWS level, e.g. 5.4). If the Prime or its subcontractor references performed as a prime Contractor, insert a “P” in the appropriate block. If the Prime or its subcontractor references performed as a subcontractor, insert an “S” accompanied by a subscript number to indicate the subcontract tier.

**Section L.II-6, Table 1, Sample PWS Past Performance Matrix**

SACOM Performance Work Statement (PWS)							
Contract Identifier	ENTIRE PWS	PWS Sec. XX	PWS Sec. XX				
USAF/DD46329-13-D-0219		P			P	P	
NASA/JAS5-019865			P		P	P	
EPA/S-95632			S <sub>1</sub>	S <sub>1</sub>	S <sub>1</sub>		
DOT/M-649845		S <sub>2</sub>		S <sub>2</sub>		S <sub>2</sub>	

(h) Past Performance References: A Past Performance Questionnaire is provided as Form L.I-24A, Past Performance Questionnaire, and attached to this solicitation. The Offeror shall complete the Offeror fill-in sections of the questionnaire and forward this questionnaire to the contracting and technical representatives of the appropriate customer for final completion in accordance with the directions on the questionnaire. The Offeror's Past Performance Volume shall include a summary of all customers to whom it has provided a Past Performance Questionnaire Form. This summary shall match the responses identified in (e) of this provision. The Offeror shall request the customer references to fully complete the questionnaire and return it as identified on the questionnaire by the date and time that Volume II submittals are due. Ensuring that questionnaires are completed and provided to the proposal delivery address on time is the sole responsibility of the Offeror. The Offeror may permit its customers to transmit the Questionnaire responses via email, directly to the Contracting Officer. However, the Government cannot guarantee security of email submissions. Additional instructions for completing the Past Performance Questionnaires are contained on the form. NASA may verify the information submitted with the references provided.

(i) The Offeror shall provide the additional below information that has occurred in the last three (3) years for **both referenced (in Section (e)) and non-referenced contracts:**

- 1) Termination. Provide a list of any contract(s) and major subcontract(s) held by the Offeror, joint venture partners, teaming partners, or Major Subcontractor that were terminated (partial or complete) for default. Include the contract number, name, address, and telephone number of the terminating officer. Include contracts that were "descoped" by the customer because of performance problems.

- 2) Labor Relations. Provide examples of prior contracts held by the Offeror, joint venture partners, teaming partners, or Major Subcontractor that included requirements for labor relations activities such as contract negotiations, grievance levels, and strike mitigation. If applicable, the Offeror shall provide examples of situations where the Offeror has successfully maintained ongoing operations in the event of a work stoppage. If applicable, the Offeror shall identify and explain any Service Contract Act violations and any issues with CBA compliance, enforcement, and/or implementation.
  
- (j) Independent Past Performance Information. The SEB will consider relevant information provided by the Offeror, including past performance information for Joint Venture partners, teaming partners, and Major Subcontractors, and may consider independently obtained information from Government sources (e.g. Past Performance Information Retrieval System (PPIRS)), and non-Government sources, in assessing the Offeror's Past Performance. While NASA may elect to consider data obtained from other sources, Offerors retain the burden of providing relevant references that NASA can readily contact and for presenting information establishing the relevance of their past performance to NASA's requirements under this solicitation.

(End of provision)

#### **L.II-7 COST/PRICE (VOLUME III)**

Instruction for Preparation of the Cost/Price Proposal:

Note: The Offeror shall demonstrate in the cost/price proposal that an adequate accounting system is in place.

#### **FACTOR 3 – COST/PRICE**

The intention of this solicitation is to obtain the work described in the PWS by means of a Firm-Fixed-Price (FFP) Phase-In; FFP PWS 5.0\*; Cost Plus Incentive Fee (CPIF) PWS 1, 2,3,4, and 6;\* an IDIQ with FFP or CPIF work/task orders; and all potential options to include Award Term Options and the Option to Extend under FAR clause 52.217-8.

\*PWS subset areas identified as "IDIQ only" are not included in the core CLINS.

#### (a) Part 1 – General Information.

- 1) Supporting Data for Information Other Than Cost and Pricing Data. The Contracting Officer has determined there is a potential for adequate price competition in this procurement. The proposals are not required to have certified cost or pricing data however, the proposals must provide sufficient detail to allow direct and indirect rate verification. Comprehensive audits of the Offeror and any of the subcontractor's proposals may occur as part of the cost realism analysis. The decision to perform comprehensive audits will be made

1) **SUBFACTOR 1 - Technical Performance (TECH):** The Offeror's proposed approach to the Technical Performance Subfactor and the detail substantiating the proposed approach will be evaluated to determine the extent to which the Offeror has demonstrated a thorough and comprehensive understanding of technical requirements as specified in the PWS. For each proposed synergy, consolidation, enhancement, or innovation, the Government will evaluate the appropriateness and its potential for effective and efficient implementation in the contract.

i. **TECH 1 – Technical Approach:**

- a) The Technical Approach to satisfying the contract requirements to the third level (e.g. 1.1.4 "Emergency Management") or the second level if there is no third level (e.g. 3.1 "Safety and Risk Management") will be evaluated for overall demonstrated comprehensive understanding, effectiveness, feasibility, and efficiency. The Offeror's approach to provide a "no cost" food service operation will be evaluated for demonstrated understanding, feasibility, efficiency, and effectiveness.
- b) The Offeror's approach for interface and exchange of information with NASA and numerous users/tenants located at SSC and MAF and how the Offeror will assess and plan for short and long-range NASA and user/tenants requirements will be evaluated for overall demonstrated comprehensive understanding, feasibility, efficiency, and effectiveness.
- c) The Offeror's assessment of technical approach risks and its approach to mitigating the impact of the identified risks will be evaluated for overall demonstrated comprehensive understanding, feasibility, efficiency and effectiveness.

ii. **TECH 2 – Staffing Plan:**

- a) The Offeror's proposed labor classification, PWS area assigned, qualifications, and number of WYEs for each site for the total workforce using the Form L.I-24C, Staffing Worksheet will be evaluated for the overall demonstrated comprehensive understanding, feasibility, efficiency and effectiveness.
- b) The proposed Staffing Plan, including the Offeror's approach and the approach of team members, and/or major subcontractors for recruiting, utilizing, and retaining a qualified workforce will be evaluated for overall demonstrated comprehensive understanding, feasibility, efficiency, and effectiveness. The approach for retaining current personnel, including target capture rate, the skills identified as critical to successful contract performance, and the table delineating sources of staffing, will be evaluated for overall demonstrated comprehensive understanding,

feasibility, efficiency, and effectiveness. The Offeror's approach to retaining and managing attrition of critical skills will be evaluated for effectiveness and facilitation of continuous high-quality services.

- c) The Offeror's approach to providing workforce flexibility (i.e., resources) necessary to accommodate short-term and long-term workload adjustments and fluctuations (increases and decreases), and changes in priority assignments in Core and IDIQ requirements at both sites will be evaluated for overall demonstrated comprehensive understanding, feasibility, efficiency and effectiveness.
- d) The Offeror's assessment of staffing plan risks and its approach to mitigating the impact of the identified risks will be evaluated for overall demonstrated comprehensive understanding, feasibility, efficiency, and effectiveness.

2) **SUBFACTOR 2 – Management Approach (MGMT)**: The Offeror's response to the Management Approach Subfactors will be evaluated for the extent to which the Offeror has clearly demonstrated a thorough and comprehensive approach to managing the requirements specified in the PWS. For each proposed synergy, consolidation, enhancement, or innovation, the Government will evaluate the appropriateness and its potential for effective and efficient implementation in the contract.

i. **MGMT 1 – Management Plan:**

- a) The Offeror's proposed management, organizational, and supervisory structure, including teaming arrangements and major subcontracts, that will be employed to perform the SACOM requirements will be evaluated for overall demonstrated comprehensive understanding, feasibility, efficiency, and effectiveness. The Offeror's reporting structure and chain of command will be evaluated for will be evaluated for overall demonstrated comprehensive understanding, feasibility, efficiency and effectiveness.
- b) The Offeror's overall management approach to planning, maintaining schedules, providing early notifications of problems, and maintaining ongoing operations (Core & IDIQ) will be will be evaluated for overall demonstrated comprehensive understanding, feasibility, efficiency and effectiveness.
- c) The Offeror's teaming approach, including its process for integrating personnel, policies, and managerial procedures to allow the Offeror to function as a seamless single entity regarding how work is controlled, reported, and reviewed will be evaluated for overall demonstrated comprehensive understanding, feasibility, efficiency and effectiveness.

The evaluation of Past Performance will be conducted in accordance with the FAR 15.305(a)(2), Proposal Evaluation, and NFS 1815.304-70, NASA Evaluation Factors. The Past Performance evaluation is an assessment of NASA's confidence in the Offeror's ability to perform the solicitation requirements, based upon the Offeror's relevant performance under previously awarded contracts.

- (a) Under the Past Performance factor, NASA will evaluate each Offeror's recent record (including the record of any Teaming Partners, Joint Venture, and major subcontractors) of performing services or delivering products that are similar in size (magnitude), content (scope), and complexity (work performed at multiple sites & hybrid contract type) to the requirements of this solicitation. The past performance evaluation will also consider the relevant past performance of affiliated companies or operating divisions within the parent company, or of joint venture partners, when it is reasonable to attribute the performance of the past efforts to the proposed effort and when the proposal clearly demonstrates the resources (e.g. financial resources, overall oversight and management, or other resources) of the parent or affiliated division, predecessor entity, or joint venture partner, will meaningfully affect performance of the instant acquisition.

The Government will use past performance information from proposal data required by provision L.II-6, Volume II – Past Performance; information obtained by the SEB team based on communications with listed references; and data obtained from any other source available to the government, including, but not limited to, the NASA Past Performance Database, the Past Performance Information Retrieval System, the Federal Awardee Performance and Integrity Information System, or other databases; interviews with Program Managers, Contracting Officers, and Fee-Determining Officials; and the Defense Contract Management Agency. Offerors are to note that, in conducting this assessment, the Government reserves the right to use both data provided by the Offeror and data obtained from other sources. The Government will consider the number and severity of problems, the effectiveness of corrective actions taken and the overall record of past performance. It shall also consider the Offeror's record for adherence to contract schedules and cost control. Offerors without a record of relevant past performance, or for whom information on past performance is not available, shall receive a "Neutral" rating.

The Offeror's past performance record will be examined for recent and relevant past performance to determine its ability to perform the required work.

- (b) Recency: Contracts with more recent performance will be considered to be more relevant than those with more distant performance, assuming all other considerations to be equal. If the contract is still ongoing, it must have a documented performance history. Recency is defined as performance occurring within the last three (3) years of the issuance date of this solicitation, except the ongoing programs must have begun no less than six (6) months from the date of the issuance of the solicitation. The Government will not consider performance on a newly awarded contract that has no documented performance history (in other words, projects that are less than six months

under contract). Only contracts with performance within 3 years from the date of the issuance of the solicitation will be evaluated.

- (c) Relevancy: The SEB will evaluate the relevancy of the Offeror's (including subcontractors and other teaming partners) past performance. More relevant past performance will typically be a stronger predictor of future success and have more influence on the past performance confidence assessment than past performance of lesser relevance. In determining relevancy for individual contracts, consideration will be given to the effort, or portion of the effort, being proposed by the Offeror, teaming partner, or subcontractor whose contract is being reviewed and evaluated. Higher relevancy will be assessed for contracts that are most similar in size, content and complexity to the effort, or portion of the effort, for which that contractor is being proposed. The Government is not bound by the Offeror's opinion of relevancy. For purposes of this procurement, relevancy will be assessed using the following definitions:

Very Relevant	Present/past performance effort involved essentially the same magnitude of effort, scope, and complexities this solicitation requires.
Relevant	Present/past performance effort involved much of the magnitude of effort, scope and complexities this solicitation requires.
Somewhat Relevant	Present/past performance contractual effort involved some of magnitude of effort, scope and complexities this solicitation requires.
Not Relevant	Present/past performance effort did not involve any of the magnitude of effort, scope and complexities this solicitation requires.

- (d) In addition to the above, in assessing performance of relevant Past Performance, the Government will make an assessment of the Offeror's overall performance record to include:

- 1) The Offeror's commitment to small business concerns by reviewing the performance of the last three years of meeting or exceeding socioeconomic business goals.
- 2) The Offeror's overall safety and health performance using indicators such as OSHA citations, EMF, DART, and TRIR. Each referenced contract will be compared to the latest available Department of Labor (DOL) Bureau of Labor Statistics (BLS) DART and TRIR against the national averages for the North American Industry Classification System (NAICS) provided for the referenced contract.
- 3) All Federal, state, and local environmental violations resulting from performance of contracts in the last three (3) years for each affected company division, or joint-

venture/partnership principal and major subcontractors will be taken into consideration.

- 4) All terminated (partial or complete) contracts within the past three (3) years for default will be considered by the SEB.
- 5) The Offeror's last three years of Labor Relations past performance, including past performance related to working with collective bargaining agreements, settling disputes and/or strike mitigation will be considered. The SEB will also consider the Offeror's Service Contract Act violations, and issues with CBA compliance, enforcement and/or implementation.

(e) Confidence Ratings. Past Performance will be evaluated for each Offeror using the following levels of confidence rating:

Very High Level of Confidence

The Offeror's relevant past performance is of exceptional merit and is very highly pertinent to this acquisition, indicates exemplary performance in a timely, efficient, and economical manner and very minor (if any) problems with no adverse effect on overall performance. Based on the Offeror's performance record, there is a very high level of confidence that the Offeror will successfully perform the required effort. (One or more significant strengths exist. No significant weaknesses exist.)

High Level of Confidence

The Offeror's relevant past performance is highly pertinent to this acquisition; demonstrating very effective performance that would be fully responsive to contract requirements. Offeror's past performance indicates that contract requirements were accomplished in a timely, efficient, and economical manner for the most part, with only minor problems that had little identifiable effect on overall performance. Based on the Offeror's performance record, there is a high level of confidence that the offeror will successfully perform the required effort. (One or more significant strengths exist. Strengths outbalance any weakness.)

Moderate Level of Confidence

The Offeror's relevant past performance is pertinent to this acquisition, and it demonstrates effective performance. Performance was fully responsive to contract requirements; there may have been reportable problems, but with little identifiable effect on overall performance. Based on the offeror's performance record, there is a moderate level of confidence that the offeror will successfully perform the required effort. (There may be strengths or weaknesses, or both.)

Low Level of Confidence

The Offeror's relevant past performance is at least somewhat pertinent to this acquisition, and it meets or slightly exceeds minimum acceptable standards. Offeror achieved adequate results; there may have been reportable problems with identifiable, but not substantial, effects on overall performance. Based on the











**FORM L.I-24C STAFFING WORKSHEET**

Column A	Column B	Column C	Column D	Column E	Column F	Column G
Offeror's proposed classification title	Mapped to BLS O*net standard occupational classification and SCA Directory	PWS area(s) assigned (Applicable PWS level)	Explain how offeror's qualifications meets or exceeds PWS qualifications	Period 6 (Oct 1, 2021 - Sep 30, 2022)		
				SSC WYE Quantity	MAF WYE Quantity	Total WYE Quantity

Offeror shall add lines to accommodate all proposed labor classifications.

**Instructions:**

Column A, Represents proposed classification title.

Column B, Maps the proposed classification title to the BLS O\*net website classification and SCA Directory Occupations based upon job description.

Column C, Identifies the PWS paragraph number (applicable PWS level).

Column D, If applicable - Identifies details about the Offeror's qualification requirements compared to the PWS requirements for the position proposed.

Column E, Identifies the quantity of Worker Year Equivalent (WYE) that will be located at SSC.

Column F, Identifies the quantity of Worker Year Equivalent (WYE) that will be located at MAF.

Column G, Identifies the total quantity of Worker Year Equivalent (WYE) proposed for the SACOM effort.

**FORM L.I-24C STAFFING WORKSHEET**

Column A	Column B	Column C	Column D	Column E	Column F	Column G
Offeror's proposed classification title	Mapped to BLS O*net standard occupational classification and SCA Directory	PWS area(s) assigned (Applicable PWS level)	Explain how offeror's qualifications meets or exceeds PWS qualifications	Period 7 (Oct 1, 2022 - Sep 30, 2023)		
				SSC WYE Quantity	MAF WYE Quantity	Total WYE Quantity

Offeror shall add lines to accommodate all proposed labor classifications.

**Instructions:**

- Column A, Represents proposed classification title.
- Column B, Maps the proposed classification title to the BLS O\*net website classification and SCA Directory Occupations based upon job description.
- Column C, Identifies the PWS paragraph number (applicable PWS level).
- Column D, If applicable - Identifies details about the Offeror's qualification requirements compared to the PWS requirements for the position proposed.
- Column E, Identifies the quantity of Worker Year Equivalent (WYE) that will be located at SSC.
- Column F, Identifies the quantity of Worker Year Equivalent (WYE) that will be located at MAF.
- Column G, Identifies the total quantity of Worker Year Equivalent (WYE) proposed for the SACOM effort.





National Aeronautics and  
Space Administration  
John C. Stennis Space Center  
Stennis Space Center, MS 39529-6000

## Data Requirement (DR)

Data Procurement Document

1. Number Issue

Amendment 2

2. Title:

Strike Plan

3. DR Number Page Date Rev.

PC18-1.1 Page 1 of 1

### SUBMITTAL REQUIREMENTS

4. Type:

1

5. Frequency of Submission:

RT

6. Distribution:

DA00

7. Initial Submission:

Initial submission to be made no later than 60 days after award of contract.  
Changes to the plan shall be submitted to the Procuring Contracting Officer  
within 45 days of occurrence.

8. As of Date:

n/a

### DATA REQUIREMENT DESCRIPTION (DRD)

9. Use:

To establish the Contractor's operations and procedures in the event of a strike.

10. Reference:

n/a

11. Preparation Information:

The Contractor shall develop and maintain a strike contingency plan that establishes procedures to cope with labor disputes among its workforce.



National Aeronautics and  
Space Administration  
John C. Stennis Space Center  
Stennis Space Center, MS 39529-6000

## Data Requirement (DR)

Data Procurement Document

1. Number Issue  
Amendment 2

2. Title: Wellness and Fitness Center Status	3. DR Number Page Date Rev. SA17-5.4 Page 1 of 2
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### SUBMITTAL REQUIREMENTS

4. Type: 3	5. Frequency of Submission: QU
6. Distribution: RA50, AS60	
8. As of Date:	7. Initial Submission: Submit within 30 days after contract start date.

### DATA REQUIREMENT DESCRIPTION (DRD)

9. Use: This report will be used to help communicate the Contractor's performance and provide information supporting the overall health of the wellness/fitness program to NASA.  Used for assessment discussions and information exchange between internal NASA management and external communications with NASA HQ.	10. Reference:
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11. Preparation Information:  
The contractor shall prepare a quarterly summary report of wellness/fitness center activities detailing program participation, organizations/company/tenant members, activities provided, health screenings/clinic referrals, overall assessment of the facility and operational cost.
1. The status report shall be of sufficient detail that will allow assessment of the effectiveness of the program. As a minimum, the report shall provide:
    - a. Membership demographics, percentage of use by demographics, programs and participation by demographics, an overall assessment of the program with substantiating data.
    - b. Provide data such as new initiatives, success of programs offered measured by number of participants meeting their individual goals, etc.
    - c. A listing of exercise equipment, number of days in down-time for repair, replacement activities, and newly purchased items.
    - d. The number of health screening referrals to the clinic.
    - e. Any injury and/or health action. Describe the finding and resolution (employee name should not be reported on this report).



National Aeronautics and  
Space Administration  
John C. Stennis Space Center  
Stennis Space Center, MS 39529-6000

## Data Requirement (DR) Continuation Sheet

Data Procurement Document

1. Number Issue  
Amendment 2

2. Title: Wellness and Fitness Center Status	3. DR Number Page Date Rev. SA17-5.4 Page 2 of 2
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### DATA REQUIREMENT DESCRIPTION - CONTINUATION

11. Preparation Information:

2. Reserved
3. Provide any recommendation that could possibly improve operational aspects and / or cost reductions while maintaining a successful wellness/fitness program.
4. Electronic File (report format) compatible with Microsoft Office Suite

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- a. Develop and maintain a work control process.
- b. Establish and promote a common method(s) of customer interface to serve as a help/service desk to initiate service requests, trouble call requests and other customer requests.
- c. Possess the ability to estimate value requested requirement, establish and utilize a control process for service request funding limitation notification to ensure customer funding is not exceeded for service request cost estimate or cost/cost(s).
- d. Plan and schedule requests to ensure resources are available to efficiently complete work requirements:
  - 1) Within the specified or negotiated time limits/schedule
  - 2) Within established performance standards
  - 3) With minimal disruptions to the customer(s)
- e. Develop, implement, and maintain operational procedures for the customer interface(s) to provide accurate, timely, professional responses to requests, and to permit tracking of work in progress.
- f. Utilize the Computerized Maintenance Management System (CMMS) to control, schedule, and monitor operations, maintenance, trouble calls, service requests, and all other operations and activities requested, as required in PWS Section 6.0.

**NOTE:** The Contractor shall utilize the Government-provided CMMS (see Attachment J-9) to the maximum extent practicable when entering, managing, and tracking work requirements.

- g. Input Construction, Facility Maintenance, and Modernization Projects into the NASA provided Project Funding Priority System (PFPS) to be used as a basis for integrating the facility planning DRD submissions.
- h. Identify schedule conflicts and work with affected customers/tenants to identify alternatives and/or seek resolution. If schedule conflicts involve work to be performed for itself or its affiliate, and/or if resolution is not achieved, the Contractor shall notify the COR and/or the CO. For the purposes of this requirement, the term "affiliate" shall include, but not be limited to, all members of Joint Ventures and their respective affiliates.
- i. The Contractor shall schedule work for all customers in the order it is received. If a request for priority is made, the Contractor will assign priority unless a priority decision is required for work for itself or its affiliate. If a priority decision is required for work for itself or its affiliate, the Contractor shall elevate to the CO and COR for disposition. For the purposes of this requirement, the term "affiliate" shall

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PWS TITLE	REQUIREMENTS	ESTIMATED WORKLOAD DATA	PERFORMANCE STANDARD
	The cognizant Defense Contract Management Command Office (DCMAO) will receive a delegation of authority from the CO to conduct an initial Contractor Purchasing System Review with the first year of contract performance to determine adequacy of the Contractor's purchasing system.		thereafter.
<b>Subcontract Management</b>	The Contractor shall, to the maximum practicable extent, provide small business concerns and Small Disadvantaged Business (SDB), Service-Disabled Veteran-Owned Small Business (SDVOSB), Veteran-Owned Small Business (VOSB), Hub Zone, and Women-Owned Small Business concerns the opportunity to receive a fair portion of subcontract awards in accordance with the negotiated Subcontracting Plan.	Nothing Additional	Meet Small Business Subcontracting Plan requirement /goals.  The Contractor shall report their subcontracting placements in accordance with DRD PC13-1.3.
	The Contractor shall manage and control all subcontractor and vendor activities necessary to accomplish requirements.	Nothing Additional	No evidence of issues in meeting requirements due to the Contractor's failure to appropriately manage subcontractor and vendor activities.
<b>Davis-Bacon Act Work</b>	All Davis-Bacon work over \$350,000 per project, including labor and materials, shall not be performed by prime contract employees except at the discretion of and specifically written direction by the CO/COR.	Ten (10) projects	No instances of Prime Contractor employees performing construction work over \$350,000 per project unless approved in writing by CO/COR.
	For historical purposes only, in 2013, the prime contractor's Davis-Bacon construction subcontracts were as follows:		
	<p style="text-align: center;"><b>SSC</b></p> <p>a. 3 per year &lt;\$25,000</p> <p>b. 5 per year \$25,000 - \$50,000</p>	<p style="text-align: center;"><b>MAF</b></p> <p>a. 8 per year &lt;\$25,000</p> <p>b. 8 per year \$25,000 - \$50,000</p>	

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dollar value in SAP. If the dollar values do not match, the Contractor shall change the amount on the NF-1149 Form to match the SAP dollar value.

10. Maintaining documentation and reporting cost associated with packaging and shipping.

PWS TITLE	REQUIREMENTS	ESTIMATED WORKLOAD DATA	PERFORMANCE STANDARD
<b>2.1.2 Packaging and Shipping Operations</b>			
<b>Plan</b>	Provide a plan that addresses how to ensure a safe, efficient, effective packaging and shipping program.	One (1)	In accordance with DRD LS01-2.1.
<b>Shipping and Packaging</b>	Prepare all routine shipments of equipment and materials.	4460	Appropriate paperwork and cost data shall accompany freight through shipping process.
<b>Hazardous Shipping</b>	Package and prepare hazardous materials for shipment.	50	Hazardous materials are prepared in accordance with subpart H of Part 172 in Title 49, code of Federal Regulations, (CFR).
<b>Pickup</b>	Provide for the transport of shipments from the customers' facility to the packing and shipping facility for processing.	400	90% of priority shipment 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)

**2.1.3 Transportation, Moving, Hauling and Mail Service**

**A. Scope**

Operate and manage all vehicles identified in Attachment J-9, *Government Furnished Property*, including but not limited to boats, buses, cars, mobile cranes, forklifts, hoists, trams, and vans. Provide moving, hauling, delivery, and driver services. The Government may request that

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PWS TITLE	REQUIREMENTS	ESTIMATED WORKLOAD DATA	PERFORMANCE STANDARD
	MAF).	ninety (90) day Areas, and one (1) Permitted TSDf	
<b>Landfill Inspections and Report (SSC Only)</b>	Perform inspections of the storm water system at the SSC <i>Landfill &amp; Rubbish Area</i> and prepare the report per DRD EN12-3.4.	One (1)	In accordance with DRD
<b>Hazardous Waste Collection Shipments and Disposal Activities</b>	Prepare and ship hazardous waste offsite for disposal.	SSC: Thirty (30) satellite areas; six (6) shipments  MAF: See Attachment J-10, <i>Reference Library</i> , for metrics.	No hazardous waste to exceed 90-day accumulation time or 1 year for MAF Permitted TSDf.
<b>TSD Audit Reports</b>	Conduct audit of <i>Offsite Treatment, Storage and Disposal Facility (TSDf) Audit</i> per DRD EN15-3.4.	One for each site	In accordance with DRD
<b>NEPA Plans, Applications, Procedures, Reports, and Notifications</b>	Support and prepare records of Environmental Consideration (RECs), Environmental Assessments (EAs) and attend design reviews per DRD EN21-3.4. Note: EA leading to an EIS (IDIQ Only)	SSC: 100 RECs  MAF: 50 RECs; one (1) EA	In accordance with DRD. All documents must be complete, accurate, maintained, and readily accessible by NASA. No fines or penalties, no notice of violations, or any other deficiencies as a result of data submissions and/or reports.
<b>Permits and Waivers</b>	Develop/update permit applications for environmental media or waivers per DRD EN 26-3.4, <i>Permit and Waiver Report</i> .	SSC: 2 permits and 1 waiver; MAF 2 Permits and 1 waiver	In accordance with DRD
<b>CERCLA Oversight and</b>	Provide the environmental oversight and operation of four (4) Pump &	Annual & Semi-Annual	In accordance with DRD

#### 4.6.1 Management of Shared Manufacturing Areas/Resources (MAF Only)

##### A. Scope

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

The Contractor shall manage shared manufacturing and fabrication areas and resources that multiple user(s)/tenant(s) are required to share. The Contractor shall schedule use of these resources and integrate schedules into the user(s)/tenant(s) production activity plans.

##### B. General Requirements

The Contractor shall:

1. Ensure the capabilities of the shared manufacturing and fabrication resources are preserved during production and operations down time.
2. Ensure Contractor personnel are made available to user(s)/tenant(s) upon request to provide support for operational activities.
3. Provide recommendations with appropriate supporting analysis and rationale that result in optimal utilization of shared manufacturing and fabrication areas and resources.
4. Perform management of NASA's shared manufacturing and fabrication resources in collaboration with NASA personnel (e.g., the SF01/SF02 MAF Office and MSFC's Engineering Directorate) and user(s)/tenant(s), as necessary to successfully operate and manage. This shall include:
  - a. Coordinating revisions to policies, procedures, and/or methods, as needed
  - b. Developing new procedures, as required
  - c. Developing metrics to ensure proper utilization of resources and continued productivity
  - d. Assisting in defining decision-making processes, conflict resolution, and effective risk management
  - e. Assessing effectiveness of facilities and facility operations, to include, but not limited to, assessments of the following:
    - Equipment/Infrastructure

**2. Integrated Pest Management**

The Contractor shall perform pest management services for all active facilities. Pests include, but are not limited to, termites, mosquitoes, crawling insects/rodents (i.e., ants, crickets, cockroaches, gnats, spiders, and mice). Removal of live wild rodents/critters (i.e., moles, possums, raccoons, snakes, feral cats, and other misc. vertebrate pests) are the responsibility of a 3<sup>rd</sup> party contractor. The SACOM Contractor is responsible for carcass removal.

The Contractor shall assure all pest control chemical handling and disposal complies with NASA environmental management policies and requirements. The Contractor shall also maintain all pest control application records, making them available for Government inspection upon request.

The Contractor shall provide a Pest Control Plan in accordance with DRD FA05-5.3, *Integrated Pest Management; Report and Schedules*. The Plan shall address pest control issues that cause damage to property and/or may cause harm to the health of personnel.

**D. Reporting Requirements**

The Contractor shall develop, maintain, and ensure the following deliverables are accurate and timely as defined in the specific DRD(s) listed below:

DRD FA05-5.3      *Integrated Pest Management; Report and Schedules*

PWS TITLE	REQUIREMENTS	ESTIMATED WORKLOAD DATA	PERFORMANCE STANDARD
<b>5.3 Grounds Maintenance and Integrated Pest Control</b>			
<b>Mowing</b>	Perform grass cutting/mowing during seasonal months.	Reference MAF Area Mowing Schedule & SSC Lawn/Road Maintenance Maps	The Contractor shall maintain grass cutting in Area 1, Area 2, Area 3, and Area 4 per MAF Area Mowing Schedule and SSC Lawn/Road Maintenance Maps. Additionally, Area 1 shall be maintained to ensure grass levels are no lower than 1-1/2 inches and no higher than 2-1/2 inches.
	Perform grass cutting during non-seasonal months in Areas 1 & 2.	Three (3) cuts maximum	Nothing Additional.
<b>Line</b>	Line trimming/weed eating shall be	As required	Within twenty (24)

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PWS TITLE	REQUIREMENTS	ESTIMATED WORKLOAD DATA	PERFORMANCE STANDARD
	Contractor shall plan accordingly to ensure normal area maintenance and special event actions are coordinated. This work does not represent an increase over the grounds maintenance currently provided.	Four (4) Special Events	
	The Contractor shall schedule/accomplish clean-up services to the area no earlier than twenty-four (24) hours and no later than three (3) hours prior to the scheduled event.	Nothing additional	No Visible Debris.
	The Contractor shall schedule/accomplish mowing and trimming services to the area no earlier than forty-eight (48) hours and no later than 24 hours prior to the scheduled event.	Nothing additional	Performance to Schedule.
	RESERVED		
	RESERVED		
<b>Fences</b>	<p>The Contractor shall keep fences free of vegetation at the Child Care Facility, Building 2120 for SSC (<b>NOTE:</b> Herbicide shall not be used).</p> <p>The Contractor shall keep all MAF fencing free of vegetation (<b>NOTE:</b> Use of herbicides is an acceptable method).</p>	<p><b>SSC:</b> 1,015 LF</p> <p><b>MAF:</b> 12,000 LF perimeter; 8,000 LF interior</p>	Fence shall remain free of vegetation.
<b>Signs (SSC Only)</b>	Annually clean Buffer Zone signs and clear brush around the signs. Signs are located along Interstate 10, Hwy 90,	Eight (8) signs	Signs and area around signs remain clean/clear.

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PWS TITLE	REQUIREMENTS	ESTIMATED WORKLOAD DATA	PERFORMANCE STANDARD
	Hwy 603, Hwy 607, and Texas Flat Road.		
<b>Pruning – Hedges, Shrubs &amp; Trees</b>	<p>Shrubs shall be pruned only to promote normal development and the removal of damaged or dead limbs.</p> <p>Trimming shall be performed in a manner that maintains or enhances the plant’s natural growth patterns.</p> <p>Mature Shrubs/hedges (Annually) Young Shrubs/Hedges (As Required)</p>	<p>MAF: 2800LF mature shrubs/hedges &amp; 300 LF young shrubs/hedges SSC: 2100 LF of shrubs/hedges &amp; 300 LF young shrubs/hedges</p>	No visual damage or dead limbs.
<b>Flower Beds</b>	<p>Maintain Plant Annuals and Plant Beds:</p> <p>A. <b>SSC</b> – Atrium of Building 1100, North and South Gate Sign, and Patio areas in Building 1020, 1002, and 1105.</p> <p>B. <b>MAF</b> – Gate 5, Exploration Park, Building 350 Court Yard/Main Entrance, Building 350 South Entrance and Building 101 Lobby Entrance.</p> <p>Plant beds shall be maintained with a combination of seasonal plantings. The Contractor shall maintain plant beds void of any undesirable vegetation which includes, but not limited to, grass, fungus, thistle, dallis grass, clover, and other vegetation</p>	<p>SSC: 7,100 SF</p> <p>MAF: 7,893 SF</p>	Maintain healthy growth during seasonal months. Maintain landscape areas free of undesirable vegetation.
<b>Mulch</b>	Apply Organic Mulch (e.g. decorative bark) in Planting Beds/Tree Rings. Bark shall be pine or softwood bark mulch.	<p>SSC: 7,100 SF excluding tree rings MAF: 7,893 SF excluding tree rings</p>	Apply bark to maintain a minimum of 2” depth and a maximum of 3” depth bi-annually.
<b>Herbicide</b>	<p>Apply non-selective and pre-emergence herbicide to prevent growth of all vegetation in paved/unpaved parking/storage areas, cracks in paved roads/sidewalks/ dock areas/curb joints, and under elevated pipe/conduit/cable tray runs.</p> <p>Maintain a vegetation free strip</p>	Reference MAF Area Mowing Schedule & SSC Lawn/Road Maintenance Maps	Areas shall remain free of vegetation. If a residual herbicide is used, it must be non-leaching with minimal toxicity.

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8. Support energy and water conservation meetings and projects (i.e., Design reviews, Sustainability Teams, Energy Efficiency & Water conservation Teams, etc.).
9. Conduct building and area energy and water conservation audits in accordance with DRD GA07-5.7.
10. Support external audits.
11. Provide energy consumption data in accordance with DRD GA08-5.7.
12. Validate utility invoices.
13. **SSC Only:** Maintain and utilize the Stennis Energy Allocation System (SEAS) to provide utility cost allocation reporting in accordance with DRD MF06-5.7 and DRD MF07-5.7. Costs shall be adjusted as necessary to account for the usage of alternate energy sources. Specifically, when meters are installed in a system such that they record usage regardless of the source (i.e., even when disconnected from utility and connected to an alternate power source) data shall be properly adjusted to insure the accuracy of billing. (e.g., when one or more facilities are being powered by an emergency generator, the Contractor shall ensure the meters used for utility billing is either not recording such events or that the meter readings are properly adjusted to account for such).

PWS TITLE	REQUIREMENTS	ESTIMATED WORKLOAD DATA	PERFORMANCE STANDARD
<b>5.7.2 Energy Management and Water Conservation</b>			
<b>Program Plan</b>	The Contractor shall provide and implement an <i>Energy Management and Water Conservation Program Plan</i> that will meet current Agency and Federal energy/water conservation policies & regulations. (DRD GA06-5.7, <i>Monthly Energy Consumption Records</i> )	Initial plan after contract award and annual updates	Initial plan to be submitted within sixty (60) calendar days of the contract start date. The NASA approved plan shall be updated annually and due on October 1 <sup>st</sup> .
<b>Create and Maintain Energy Records</b>	Create and maintain records on project proposals/developments, white papers, energy savings estimates, and onsite conservation project savings status/metrics.	Various submissions – SSC:22 MAF:12	Records shall be maintained in accordance with Section 1.1.2 of the PWS.
<b>Support NASA Energy Manager</b>	Contractor shall support the NASA Energy Manager in providing information and data upon request to include periodic (planned & ad hoc) Center, Agency, & Federal Data calls.	SSC: 11 Request  MAF:11 Request	Contractor shall provide response within suspense time stated on action request. Range is from one (1) week to forty-eight (48) hours.

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PWS TITLE	REQUIREMENTS	ESTIMATED WORKLOAD DATA	PERFORMANCE STANDARD
<b>Maintain Documentation</b>	Maintain & improve existing standards and procedures to ensure compliance with Federal and Agency conservation requirements. Create new standards & procedures as needed to maintain compliance.	As required	Standards and procedures shall be maintained current.
<b>Support Design Review</b>	Support Design Reviews for onsite building construction and renovations.	Reviews SSC: 36-60 MAF: 24-40	Respond in a timely manner, per specified review schedules.
<b>Data Entry and Analysis</b>	Perform data entry & analysis as required for Federal & Agency databases periodic reporting; to include, but not limited to, the NASA Environmental Tracking System (NETS), Energy Star Portfolio Manager, DOE Compliance Tracking System (CTS).	Monthly, quarterly, and annually.	Contractor shall provide database entries and/or other requested written response to Center level rep at least 48 hours prior to HQ due dates.
<b>Consumption Records</b>	Validate monthly utility meter readings, review maintain and provide comprehensive energy monthly consumption records at the building or system level in accordance with DRD GA08-5.7 to fulfill data needs of Center, Agency, and Federal Reporting.	SSC: 5 Monthly  MAF: 3 Monthly	Record shall be submitted in accordance with DRD GS08-5.7.  Verified electronic copies of meter readings shall be submitted to the NASA Energy Manager, or designees, within ten (10) calendar days of receipt of invoice.
<b>SEAS</b>	SSC Only: Maintain and utilize the Stennis Energy Allocation System (SEAS) for monthly Customer Utility Cost Allocation Reporting: a. Maintain utility meter data in SEAS b. Input consumption data and validate space utilization data each month in SEAS c. Using SEAS, provide Utility Cost Allocation Reports each month per DRDs MF05-5.7 and MF06-5.7.	SSC: One (1) Customer Utility Invoice Report for electricity, 2 Customer Utility Invoice Reports for natural gas  MAF: N/A	In accordance with DRDs MF05-5.7 and MF06-5.7. Reports are accurate and are adjusted to account for usage of alternate energy sources.

PWS TITLE	REQUIREMENTS	ESTIMATED WORKLOAD DATA	PERFORMANCE STANDARD
	support onsite employee awareness activities (e.g.: Annual Energy Awareness Day, Energy Webpages, onsite publications and information screens, etc.).	Awareness Day (October)  Provide Content for webpage updates, monitor screens, and onsite publications four (4) to eight (8) times  <b>MAF:</b> Work with IT to create Webpage in first six (6) months, one (1) Awareness activity/year, update webpages as needed, publication twice a year	Manager in planning, preparing, and conducting the one (1) day October energy day event (SSC Only). Content for webpages, monitors, & publications to be submitted within seventy-two (72) hours of NASA request.

**5.8 Fire Protection Services**

**NOTE:** MAF fire and emergency response services, including ambulance services, are provided by the New Orleans Fire Department (NOFD) through an Inter-agency agreement, MK13-257. Therefore, these requirements do not apply to MAF. However, the Contractor shall support some activities as indicated in the work-load data table, below entitled “General Requirements.” Unless specifically stated, all responsibilities outlined below are for SSC Only.

**A. Scope**

The Contractor shall furnish all personnel, supervision, and management necessary to provide emergency response and fire protection services on a twenty-four (24) hour per day, seven (7) days per week, fifty-two (52) weeks per year basis, including holidays. Equipment provided by the Government is indicated in Attachment J-1, Appendix A, *Additional Workload Data* and Attachment J-9, *Government Furnished Property*. In accordance with PWS 5.8, the

Government will provide the required and approved Equipment with the exception of PPE/clothing (i.e., boots, pants, helmets, etc.) and the fire trucks identified as "Fire/ Rescue Vehicle" and "2009 E-one HP 78 78' AERIAL LADDER" on the Government depreciation list located in Attachment J-9, Historical and Reference Data folder. In accordance with RFP Section G.8, the Government will approve the SACOM Contractor to depreciate the fire trucks identified as "Fire/ Rescue Vehicle" and "2009 E-one HP 78 78' AERIAL LADDER" on the Government depreciation list. In the event additional equipment, material, tools or supplies are needed to accomplish the work described below in section B, General Requirements, the contractor shall submit the request to the NASA Fire Protection Manager.

**B. General Requirements**

The Contractor shall provide fire and ambulance service fully staffed with qualified personnel in accordance with National Fire Protection Association (NFPA) standards, NASA-STD-8719.11, *Safety Standard for Fire Protection*, SPR 8715.1, *Safety and Health Program Requirements* and the referenced requirements within these publications. The minimum staffing of qualified personnel shall be such that two engine companies, with the capability of a minimum of 2 EMTs, will respond to each alarm and safely operate concurrently between the two (2) units as minimally required by NFPA standards. The ambulance service is for immediate response only. Upon assessment and initial stabilization treatments, the injured person should be transported to the clinic or to regional medical facilities offsite as the situation dictates.

The Contractor shall develop and operate a Breathing Air Program, including the test and maintenance of all related equipment, supplies, air quality, and filling of Self Contained Breathing Apparatus (SCBAs).

The Contractor shall maintain access to all documentation (i.e., drawings, floor plans, procedures, plans) for daily reference by fire protection personnel.

Maintenance of Contractor-provided PPE/clothing (i.e., boots, pants, helmets, etc.) is a requirement associated with this section of the PWS. The Contractor shall be responsible for maintaining this equipment in a safe, serviceable/operable condition and to repair, or identify for replacement, any equipment as required.

Maintenance requirements of all fire protection hydrants, facility systems/fixtures, vehicles/mobile equipment, and repairs of Government-furnished fire-fighting equipment are addressed in PWS Section 6.2.

**C. Reporting Requirements**

The Contractor shall develop, maintain, and ensure the following deliverables are accurate and timely as defined in the specific DRD(s) listed below:

DRD SA13-5.8      *Fire Protection Quarterly Report*

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All operations as specified in this PWS are Core requirements. Maintenance identified in this PWS is also a Core requirement, with the exception of the following: corrective maintenance greater than or equal to \$50,000 (as referenced in PWS Section 6.2.2, *Corrective Maintenance*), construction, fabrication, manufacturing, and test services are IDIQ. Operations and maintenance to support tenants/customers that will require additional work, outside of the core requirements, are also IDIQ.

The Contractor shall have the capability to provide a Certified Commissioning Agent to perform retro-commissioning of existing buildings. The Contractor shall address their plan to perform retro-commissioning in their *Operations and Maintenance Plan* (DRD GA01-6.0). All retro-commissioning activities are IDIQ.

O&M requirements shall be recorded in the CMMS for the purposes of identifying discrepancies and tracking the history of all O&M for FSEU. The CMMS shall have the following minimum capabilities (within 60 calendar days of Contract Start Date):

- a. Storing equipment records. (Reference PWS Section 2.2)
- b. Storing job plans/instructions for all recurring work (i.e., inspections, preventive maintenance, etc.).
- c. Tracking and scheduling O&M activities/work orders. Work order records shall collect the following data at a minimum:
  - Unique work order number
  - Work description
  - Work type
  - FSEU equipment number
  - FSEU or work location
  - Each date work is performed
  - Personnel performing work
  - Authorizations obtained, if applicable
  - Documentation of work performed, discrepancies/anomalies found, etc.
  - Deferral code, if applicable
  - Cost (estimates and actual)
  - All actions taken, including routing and disposition of work orders
- d. Attaching photos, documents, reports, etc. to an equipment or work order record.
- e. Routing work orders for review/approval.
- f. Accessing existing historical maintenance data for trending and reporting.
- g. Providing accessibility to the Government.

including filter press, and demineralized water system etc.), conducting inspections, and performance of chemical additions to tank farm.

### **6.1.7 Utility Operations**

#### **1. High Voltage Electrical Operations**

All high voltage electrical operations require coordination with the appropriate power company's control center, as well as EMCS, and should be defined in an SOP and/or Work Instruction. All switch and breaker operations on the 13.8 kV Distribution System shall be coordinated with EMCS.

Operating high voltage electrical systems includes the process of inspecting high voltage busses, switches, overhead lines, and other 115kV and 13.8 kV components for visual damage, abnormal conditions or evidence of tampering; reading/recording meters; controlling access to substations; and securing areas when no one is present. The Contractor shall notify the appropriate power company immediately of any abnormal conditions.

#### **2. Natural Gas Operations**

The natural gas systems shall be operated to ensure a continuous flow of gas is available at all times and that systems are compliant with state requirements. The operation of the natural gas systems shall include, but is not limited to, reading meters and recording findings, maintaining natural gas logs, inspecting valves, inspecting distribution systems for leaks and providing operational support for gas curtailment.

#### **3. Potable Water Operations (SSC Only)**

The potable water system shall be operated in accordance with Permit Numbers MS0230015 and MS0230052 to ensure a continuous supply of water is available at all times and is compliant with State Health Regulations. The operation of the potable water system shall include, but is not limited to, flushing/sampling, reading/recording meters, maintaining daily logs, chlorine tank change-outs, freeze plan support, maintaining statistical data, and maintaining a backflow prevention program.

#### **4. Sanitary Sewage Operations (SSC Only)**

The Sewage collection systems shall be operated to ensure continuous collection, pumping, and removal of wastewater is provided at all times. The sewage system shall be operated to ensure that effluent water quality meets all applicable state regulations and permit requirements, without disruption of wastewater flow from all facilities. The operations of the sanitary sewage systems include, but are not limited to, monitoring/inspecting primary collection systems, monitoring treatment systems, reporting permit non-compliances, maintaining daily log of operator activities, and

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PERFORMANCE REQUIREMENT SUMMARY (PRS)

ITEM	WORK REQUIREMENT	WEIGHT	STANDARD OF PERFORMANCE	M.A.D.*	SURVEILLANCE METHODS
<b>CONTRACT MANAGEMENT (PWS 1.0)</b>					
<b>1.1</b>	<b>CONTRACT MANAGEMENT</b>	<b>48%</b>		<b>3.10</b>	
	(a) Ensure contract compliance with Public Laws, Executive Orders, NPD, NPR, PWS approved plans (e.g., subcontracting), FAR, NFS, Center policy directives, Center procedural requirements, work instructions, permits, contract clauses, and approved plans. Ensure that all requirements in PWS are completed within cost, on schedule, and a high quality, trained and safe environment.	90%	(a) No violations or non-compliances of Public Laws, Executive Orders, NPD, NPR, PWS, approved plans (e.g., subcontracting), FAR, NFS, Center policy directives, Center procedural requirements, work instructions, permits, contract clauses; no OSHA citations or EPA violations; no instances of non-compliance with contract requirements, terms and conditions, and approved plans and/or standards under 1.0.	3	
	(b) All IT systems shall adhere to the requirements identified in PWS 1.1.3.		(b) No instance of IT systems not in compliance with SSC, MSFC, MAF IT Requirements as identified in PWS 1.1.3.		
	(c) Implement an approved emergency strategy during emergencies.		(c) No instance of Contractor not executing as approved emergency strategy.		
	(d) Provide necessary personnel and resources, except those Government-furnished, to accomplish work and comply with all other terms and conditions of the contract.		(d) No instance of personnel not satisfactory accomplishing requirements due to training, certifications, qualifications, or other issues; no instance of non-compliance with PWS requirements, and/or contract terms and conditions.		
	(e) Satisfy Reporting Requirements by: (1) maintaining documentation with respect to all financial operations and (2) developing and maintaining a comprehensive record and file management program. Provide all documentation (DRs, reports, etc.) in accordance with requirements.	10%	(e) No instance of late and/or inaccurate reports. This does not include MF01, MF02, MF03, MF04, and MF05.	10% of Lot Size	
<b>1.2</b>	<b>TECHNICAL MANAGEMENT</b>	<b>2%</b>		<b>2.00</b>	
	(a) Develop plans and formulations in accordance with requirements.	100%	(a) Plans and formulations are 100% accurate and plans are submitted per DR and formulations by requested due date.	2	
<b>1.3</b>	<b>BUSINESS MANAGEMENT</b>	<b>46%</b>		<b>7.10</b>	
	(a) Responsiveness to multiple customers; maintain flexibility in management operating systems and controls for changing service requirements and prioritizing tasks to accommodate competing demands.	42%	(a) No disrupted services to any customers; work management program accessible to customers and identifies work by PWS and work authorization; no instances of costs exceeding approved amount without approval standards under 1.3.2.	4 (a) - (g) Combined	RR, FI, UPI, VCC**
	(b) Develop, implement and maintain a financial management process which complies with all requirements specified in Section 1.3.1 of this PWS.		(b) No instances of system or process non-compliance.		
	(c) Develop and update a customer guide for SACOM services to be used by customers.		(c) Guide is easily accessible and updated annually.		
	(d) Ensure the correct code(s) is/are utilized per work order.		(d) No instance of code structure not correct.		
	(e) Schedule and arrange work that causes the least interference with the normal occurrence of Government business and missions.		(e) No interferences for normal scheduled work.		
	(f) Provide notifications of unscheduled site outages, failures, and/or anomalies.		(f) Provide immediate notification per PWS section 1.3.2.		
	(g) Maintain a current updated contact list(s) necessary to ensure proper notifications of outages, failures, and/or anomalies.		(g) Eight hours to execute/ update once notified.		
	(h) Report plan, cost and workforce data per deliverable request MF01, MF02, MF03, MF04, MF05 and MF06.	25%	(h) No instance of deliverables not correct. No instance of deliverable not submitted according to the submittal information on the deliverable.	1	
	(i) Develop cost estimates in accordance with request per PWS 1.3.2.	8%	(i) Estimates are accurate to within +/- 5% of awarded work.	2	
	(j) Acquire materials, supplies, and services.	25%	(j) Order is placed within number of days after receipt: LEVEL I 3 workdays LEVEL II 5 workdays LEVEL III 10 workdays LEVEL IV 14 workdays LEVEL V 30 workdays	10% of Lot Size	
<b>1.4</b>	<b>BUSINESS DEVELOPMENT</b>	<b>4%</b>		<b>2</b>	
	(a) Provide new viable prospective tenants to NaSA Site Development Lead for potential occupancy.	10%	(a1) 10 new prospective tenants per year submitted to NASA (YEARLY)***	1	
		90%	(a2) Total (new does not include current extensions) potential revenue due to occupancy equal to or greater than \$1M/year (YEARLY)****	1	
<b>TOTAL</b>		<b>20%</b>			

\* Denotes # of Observed Deficiencies (OD) (quarterly unless identified as yearly) fee is reduced for each OD. If ODs exceed the MAD, fee continues to be reduced from the overall fee pool.  
 \*\* See RFP Section E.4, Government Contract Quality Assurance Functions.  
 \*\*\* New prospective tenants shall be viable in the context of the PWS section 1.4  
 \*\*\*\* Pending the definition of a viable contractor, if the Contractor forwards a viable prospective tenant and the Government does not approve the prospective tenant the Contractor would received credit for the prospective tenant.

ATTACHMENT J-9

LIST 3, SSC GOVERNMENT FURNISHED IT SYSTEMS AND APPLICATIONS

APPLICATION / SOFTWARE	DESCRIPTION / DETAILS	CONTRACT PROVIDING SOFTWARE SUPPORT	USE MANDATED BY NASA *
Maximo	CMMS System. Used for O&M work order management, FOSC Charge code validation, Real Property database, BMAR/Backlog Database, Planned Maintenance Projects, Asset Preventative Maintenance Information, Asset Failure tracking, repair tracking, pm tracking and material, labor, ODC costs (loaded) associated with performing work on the FOSC contract. This system is also used to pull valid buildings, facility manager tracking information, and the hours used to perform work on assigned work orders.	-	Mandatory
Common Use Areas Database	(Paint, Carpet, Ceiling Tile, Restroom Partition, Fixture Condition) Data stored in Maximo	-	NON-Mandatory
System Operational and Maintenance Responsibility Database (SOMRD)	SOMRD Data stored in Maximo	-	NON-Mandatory
O&M @Hand	Maximo Handheld Work Order Tracking System, Employee work assignment for handheld devices (100 devices).	-	NON-Mandatory
TCIS Schedule	In Maximo 3-month schedule for all operation and recurring work	-	NON-Mandatory
Programmed Maintenance Task Database	Programmed tasks stored in Maximo	-	NON-Mandatory
Maintenance Inspection Database (BMAR)	Maintain the Backlog of Maintenance (BMAR) (stored in Maximo) databases and develop the maintenance 5-year plan	-	NON-Mandatory
@Hand Warehouse	Warehouse mobile inventory system. Used to issue out inventory from the bench stock.	-	NON-Mandatory
<b>Systems/Databases</b>			

ATTACHMENT J-9

LIST 3, SSC GOVERNMENT FURNISHED IT SYSTEMS AND APPLICATIONS

Refrigerant Control Management System (RCM)	Refrigerant tracking and Government reporting software. Maintain Refrigerant Records for Refrigerant Use and Equipment Leakage Rates, repairs, and inventories to maintain compliance with EPA rules and regulations	ITS	Mandatory
RBMI/Pressure Vessel Tracking System	Pressure Vessel Tracking system, Pressure Vessel PM/Maintenance scheduling system	ITS	Mandatory
Component Image System	Repository of warehouse inventory Images displayed through NOSC. Used by NOSC administrative users to upload and review images.	ITS	NON-Mandatory
FOSC Panel Documentation System	Application used to document the panel/circuit printouts for all electrical panels for all buildings on SSC ( <a href="https://sscwebapp3.ssc.nasa.gov/fosc_pds">https://sscwebapp3.ssc.nasa.gov/fosc_pds</a> )	ITS	Mandatory
Training Certification Records System (TCRS)	Tool used to track certifications of employees at SSC (SDC APPLICATION)	ITS	Mandatory
Safety Training Schedules	SDC APPLICATION	ITS	Mandatory

ATTACHMENT J-9

LIST 3, SSC GOVERNMENT FURNISHED IT SYSTEMS AND APPLICATIONS

Occupational Medicine and Environmental Health System (OMEHS)	The Occupational Medicine and Environmental Health System (OMEHS) is the official upgrade for the Health and Environmental Resource System (HERS). Gradually, all of the applications from HERS will be upgraded and replaced by OMEHS. Coordination has been made with KSC IT Security to possibly re-name the OMEHS application &quot;HERS&quot; once the old HERS is completely replaced and retired. The OMEHS application, used by the Medical and Environmental Support Contractor (MESC), has modules for Administrative, Industrial Hygiene, Health Physics, Training and Competency Management, Equipment Tracking, and Task Tracking. [Web based from Kennedy. Not on desktop: no software needed with exception to hearing conservation ActiveX install]	Agency	Mandatory
Base Environmental Management System (BEMS)	Application used to plan and manage environmental compliance audits for SSC. Contains questionnaires, findings, and corrective action reports for environmental audits. ( <a href="https://sscwebapp2.ssc.nasa.gov/bems">https://sscwebapp2.ssc.nasa.gov/bems</a> )	ITS	Mandatory
Imagine	Used to perform History Office data entry services for the office (IN SDC). Currently moving to TechDoc	ITS	Mandatory
GE Healthcare(X-Ray System)	Viewing X-rays; PACS server (file server) that stores the x-rays to electronically send to supporting hospitals to get second opinions or view the images locally	-	NON-Mandatory
Windchill - Design and Data Management System (DDMS)	SSC Design and Data Mgt System (8.0 Current data) (SDC Application)	ITS	Mandatory
Hazardous Material Inventory System HMIS	System used to manage Hazmat Information for SSC Organizations (NASA Application) ( <a href="https://sscweb.ssc.nasa.gov/hmis/">https://sscweb.ssc.nasa.gov/hmis/</a> )	ITS	Mandatory

## ATTACHMENT J-9

## LIST 3, SSC GOVERNMENT FURNISHED IT SYSTEMS AND APPLICATIONS

TechDoc	SDC APPLICATION; record/document retention system used for work instructions and policies; Information archives	ITS	Mandatory
MIDL	The MSFC Integrated Document Library (MIDL) Web site is a landing page, which organizes links to many document archives at MSFC and NASA Headquarters.	Agency	Mandatory
Task Order Initiation System	Primary interface for processing Task Orders initiated for contract IDIQ work scope	ITS	Mandatory
SHetrak-SCRS (Safety, Health, & Environmental Tracking/Safety Concerns Reporting System)	Safety, Health Environmental inspection finding reporting and tracking system. Also contains Safety Concern Reporting System for tracking of SHE concerns reported by employees.	Agency	Mandatory
Integrated Risk Management Application (IRMA)	Center risk management system used for tracking programmatic and institutional risks, identifying impacts and mitigations. ( <a href="https://irma.ssc.nasa.gov/irma/">https://irma.ssc.nasa.gov/irma/</a> )	ITS	Mandatory
NASA Mishap Information System (NMIS)	NASA's Safety Database and Environmental Health and Safety Data Management System	ITS	Mandatory
idMAX	The Identity Management and Account Exchange (IdMAX) system is NASA's integrated and authoritative Identity, Credential, and Access Management (ICAM) system that you can use to manage NASA identities and credentials, request access to a NASA facility or system, or change your personal information.	ITS	Mandatory

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LIST 3, SSC GOVERNMENT FURNISHED IT SYSTEMS AND APPLICATIONS

NAMS	NAMS is a centrally-managed and distributed account management solution used by NASA employees, NASA contractors, and other users authorized by NASA. NAMS obtains information such as personal identification, UUPIC, access privileges, name, locator, and other key data described in the NISE Data Management Plan. NAMS supplies uniform, consistent account management business processes and procedures.	ITS	Mandatory
ARS	SDC APPLICATION (SSC Local Access Request system) ( <a href="https://ssc-campus.ssc.nasa.gov/ars/">https://ssc-campus.ssc.nasa.gov/ars/</a> )	ITS	Mandatory
ESD (NASA Enterprise Service Desk)	Submit IT Service Requests Computers / Laptops, Smart Phones, Multi-Functional Devices (MFDs), Copiers / Printers, Network Services; and/or Incident Tickets	Agency	Mandatory
OWEB	Local SSC OCIO Service request system for Telephone Services, Radio Services, Cable TV (Analog / Digital Television), Cable Plant Services, Custom Data Services	ITS	Mandatory
Contractor Performance Assessment System	CPAS will serve as the official input point of entry for Contractor Performance Input by COs, COTRs, and business & technical monitors in accordance with the contracts' respective surveillance plans, contract terms, etc.	ITS	Mandatory
PFPS Project Funding Prioritization System (PFPS)	Tracks proposed propulsion test projects and provides capability for rating/prioritizing those projects and submitting funding proposals. ( <a href="https://sscwebapp3.ssc.nasa.gov/pfps">https://sscwebapp3.ssc.nasa.gov/pfps</a> )	ITS	Mandatory
Contract Deliverable System (CDS)	System used by NASA procurement and on-site support contractors to track, submit, and review deliverables.( <a href="https://sscwebapp3.ssc.nasa.gov/scds">https://sscwebapp3.ssc.nasa.gov/scds</a> )	ITS	Mandatory

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LIST 3, SSC GOVERNMENT FURNISHED IT SYSTEMS AND APPLICATIONS

Data Warehouse Portal (DWP)	The cost data warehouse component of the data warehouse portal provides on-site contactor cost data reporting at the SWR and benefitor levels.	ITS	Mandatory
Facility Manager Database	Facility Manager Program. Tracks occupancy and fire discrepancies for facility managers on site. The system also has a interface with Maximo to allow work orders to be generated against discrepancies. The system also loads SHETrack discrepancies to be tracked into the system. ( <a href="https://sscgaleo.ssc.nasa.gov/pls/port al/">https://sscgaleo.ssc.nasa.gov/pls/port al/</a> )	ITS	Mandatory
Graphics Drawings	Drawings are on server in Multimedia managed by ARTS	ITS	Mandatory
APOGEE - Manage EMCS	COTS EMCS tracking system		Mandatory
ALOHA	Cafeteria Software, Credit Card Processing, Food Inventory usage, Sales	-	NON-Mandatory
PIPEFLO Professional & PIPEFLO Compressible	Engineering Software flow analysis	-	NON-Mandatory
ESAB CUTTING SYSTEMS	CAM system for plasma cutter	-	NON-Mandatory
GibbsCAM 2011 64bit Version 10.1.0	Used to program metal working equipment in machine shop	-	NON-Mandatory
Wasp Barcode Technologies BarcodeMaker v2.0	Creates barcode of numbers for use with scanner	-	NON-Mandatory
ASCENT/ COMMTEST VB7	Vibration analysis	-	NON-Mandatory
Ultraprobe Digital Systems Ultratrend DMS version 5.1 and UE Spectralyzer 4.2	Used to analyze audio of equipment	-	NON-Mandatory
Avolink Battery v2.35	Battery testing software	-	NON-Mandatory
Flir Quick Report 1.2 SP2 software	FLIR Software	-	NON-Mandatory
FLIR Reporter Professional 8.5	Used with infrared images for analysis and reporting	-	NON-Mandatory
Master Trend Vibration Analysis v3.5	Vibration analysis Software	-	NON-Mandatory

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## LIST 3, SSC GOVERNMENT FURNISHED IT SYSTEMS AND APPLICATIONS

MCE Gold Motor Tester	Analyze motor vibration	-	NON-Mandatory
WinVis32 AVALink v5.0/MCE Electric Motor Testing/PDMA	Motor testing software	-	NON-Mandatory
MSA Link Software Version 1.0.5.0	Environmental Testing	-	NON-Mandatory
STAAD Pro v8i and STAAD Foundation	Engineering Software	-	NON-Mandatory
STAGEit	Fire Simulation Exercises	-	NON-Mandatory
Rotalign (referred to as Optilign)	Motor alignment and testing software	-	NON-Mandatory
SMS 3000	O & M Software	-	NON-Mandatory
SPECSINTACT	Engineering Software, generate specifications for all our designs.	ITS	Mandatory
In Touch 9.5	GIS -saved to SDC file server	-	NON-Mandatory
Raster Design by Autodesk	Engineering Software BIM Software; Business Information Model (BIM)/Revit	-	NON-Mandatory
CREO Parametric	Perform schematic and solid model drafting	Agency	Mandatory
CFX	ANSYS Co. computational fluid dynamics (CFD) software packages	Agency	Mandatory
Fluent	ANSYS Co. computational fluid dynamics (CFD) software packages	Agency	Mandatory
Bentley Auto-Pipe	ANSYS Co. finite element analysis (FEA) packages	Agency	Mandatory
Flowmaster	ANSYS Co. finite element analysis (FEA) packages	Agency	Mandatory
Mat Lab	ANSYS Co. finite element analysis (FEA) packages	Agency	Mandatory
Thermal Desktop	ANSYS Co. finite element analysis (FEA) packages	Agency	Mandatory
Rocket Propulsion Test Analysis (RPTA) Models which are Fortran-based codes	In-house developed	Agency	Mandatory
Pro Engineer/CERO		ITS	Mandatory
Phoenix Version PP3.3.1 (build:53) by Petro Vend	Fuel Tank billing and tracking ( card swipe)	-	NON-Mandatory

ATTACHMENT J-9

LIST 3, SSC GOVERNMENT FURNISHED IT SYSTEMS AND APPLICATIONS

Inform Version 3.1 by Veeder Root	Fuel Tank Monitoring software	-	NON-Mandatory
NFPA 70E	CD for electric Codes (DOWNLOAD FROM WEBSITE AND PAY MAINT' AGREEMENT TO GAIN ACCESS TO WEBSITE)	-	NON-Mandatory
SKM Power Tools for Windows	Electrical O & M Software; Power System Design and Analysis software	-	NON-Mandatory
Caseware 20/20	EAP Evaluation software for NASA HQ reporting	-	NON-Mandatory
AUTOPIPE	Pipe engineering software.	Agency	Mandatory
Fchart (used in conjunction with Solar Calc)	Engineering Analysis	-	NON-Mandatory
Solar Pathfinder 5.0.1	Used for finding best source of light	-	NON-Mandatory
Freedom Ware	O&M Software	-	NON-Mandatory
SupportIT pile wall software	Retaining wall analysis Tool	-	NON-Mandatory
Revit by Autodesk	Engineering Software BIM Software	ITS	Mandatory
AutoCAD	Engineering Software	ITS	Mandatory
eClub by Motionsoft	Wellness Center Accounting Information. billing, membership management. Running concurrent with old system to validate billing processes. - (Replaces Cardio Stress)	-	NON-Mandatory
Siemens Tactics View 2.1.0	Traffic light control software	-	NON-Mandatory
PVElite 2012 R!Integraph	Interface with handheld battery tester for data retrieval	-	NON-Mandatory
Sigmaspectrum Master Drug Library	Control Administration of intravenous fluids. Generates a Drug Library file that is loaded to a SIGMA Spectrum Infusion Pump	-	NON-Mandatory
PC PRO+ version 7.2	Elevator Testing Software	-	NON-Mandatory
AMS Machinery Health Manager	System used to track machinery health data.	-	NON-Mandatory
Central Engineering Files Manager	CEF Manager allows searches of CEF held indexes.	ITS	Mandatory
Close Call Reporting System	Allows SSC NASA/NASA contractor personnel to submit Close Calls.	ITS	Mandatory

ATTACHMENT J-9

LIST 3, SSC GOVERNMENT FURNISHED IT SYSTEMS AND APPLICATIONS

Configuration Control Tracking System	System used by Stennis Data Center Operations to track baseline configuration and all changes for applications and systems within their respective realm.	ITS	Mandatory
Directory Services Employee Information System	Maintenance application used to update SSC employee data.	ITS	Mandatory
Document Numbering System	System used to request numbers for Stennis Space Center documents.	ITS	Mandatory
Emergency Operations Center	Contains emergency awareness information, links to emergency awareness and preparation sites, and SSC point of contact information for the Incident Command Post at SSC.	ITS	Mandatory
Environmental Management System	Information on SSC's environmental management processes including: enviro fact sheets, training via streaming video, and procedures for the environmental office. Includes pages for searching Lead and Asbestos Drawings via MSDS database.	ITS	Mandatory
Stennis Ergonomic Risk Assessment System	Provides a tool for employees to create and submit ergonomic risk assessments appropriate to the employees work place for evaluation by an ergonomists.	ITS	Mandatory
Facility Center	The Facility Center is used to track square footage usage for SSC customers.	ITS	Mandatory
FEDLOG	Federal Logistic search engine for Inventory Management.	ITS	Mandatory
Firehouse Software	SQL Database supporting the SSC Fire Department Operations incident recording, etc.	ITS	Mandatory
Safety & Hazard Reporting	Steps for responding to or reporting a safety/harardous situation.	ITS	Mandatory
SSC VPN	VPN access to the SSC network.	ITS	Mandatory
SSC Action Tracking System	Actrak is a client server application for importing tracking action items for various organizations and projects for SSC NASA and NASA contractors.	ITS	Mandatory
Stennis Energy Consumption Allocation System	Generates billing statements for electrical, propane/diesel, and natural gas consumption for resident agencies.	ITS	Mandatory

ATTACHMENT J-9

LIST 3, SSC GOVERNMENT FURNISHED IT SYSTEMS AND APPLICATIONS

Stennis Real Property Space Request	Application to allow NASA Civil Servants and NASA Contractors and Tenants to request a move/space.	ITS	Mandatory
Striving to Achieve Real Safety	A forum for employee-based involvement in the continual improvement of safety and health issues at Stennis Space Center	ITS	Mandatory
Voluntary Protection Programs Administration	Tool used to manage agenda, meeting minutes and presentations from the VPP website.	ITS	Mandatory
Funds Availability List	Reimbursable funds tracking system.	ITS	Mandatory
Systems Applications and Products (SAP)	A financial accounting and reporting system used to record transactions, analyze data and generate operating data reports. The Contractor will use the material and inventory management functionality ONLY.	Agency	Mandatory for scope included in PWS 2.2.1

\* NASA reserves the right to modify or replace any applications designated as "use mandated by NASA". The successful bidder would be required to use the modified or new application.

\*\* The - represents the applications / software that the SACOM contractor would be required to perform software support if utilized.

ATTACHMNET J-9  
LIST 3, MAF GOVERNMENT FURNISHED IT SYSTEMS AND APPLICATIONS

APPLICATION / SOFTWARE	DESCRIPTION / DETAILS	CONTRACT PROVIDING SOFTWARE SUPPORT**	USE MANDATED BY NASA *
Maximo	CCMS System. Maximo Version 6.2, includes the following modules: Administration, Asset Management, Configuration, Contracts, Financial, Navigator, Integrator, Inventory, Planning, Preventive Maintenance, Purchasing, Reporting, Resources, Safety, Security, Self Service, Service Desk, Work orders.	-	Mandatory
RS Means	Estimating Tool - RIG	-	NON-Mandatory
METASYS	System Monitoring	-	Mandatory
Power Logic	Power Usage/Monitoring	-	Mandatory
OCE Engineering Exec (Soon to be Upgrade to OCE Direct Suite)	Drawing Database	-	Mandatory
Vision FM	Drawing Database	-	NON-Mandatory
SolidWorks	CAD Design - Machine Shop	-	NON-Mandatory
SKM	Engineering Analysis Software	-	NON-Mandatory
EPORT	Risk Management	-	Mandatory

\* NASA reserves the right to modify or replace any applications designated as "use mandated by NASA". The successful bidder would be required to use the modified or new application.

\*\* The - represents the applications / software that the SACOM contractor would be required to perform software support if utilized.



National Aeronautics and  
Space Administration

**John C. Stennis Space Center**  
**Stennis Space Center, MS 39529-6000**

**SWI-8830-0014 Rev. 3**  
**March 2013**

## **John C. Stennis Space Center**

### **Utility Billing**



Stennis Work Instruction	SWI-8830-0014	3
	<i>Number</i>	<i>Rev.</i>
	Effective Date: March 4, 2013	
	Review Date: March 4, 2018	
Page 2 of 3		
Responsible Office: FOSC/Facilities Maintenance & Operations		
<b>SUBJECT: Utility Billing</b>		

## 1.0 Purpose

To establish and maintain a procedure for Utility Billing.

## 2.0 Applicability

This procedure is applicable to the FOSC Operations and Maintenance Collateral Equipment Specialist for Utility Billing.

## 3.0 References

All references are assumed to be the latest version unless otherwise indicated.

## 4.0 Responsibilities

The Collateral Equipment Specialist provides the monthly billing reports (electric and gas) to NASA Finance and the NASA Energy Monitor. This person is readily available to answer any questions that may arise concerning tenants usage of electricity and gas. Verify square footage report against Seas square footage report each month. Prepare verification of utilities using circuit readings at Main Substation and the MS Power Invoices (Account #00039-51004 and #55896-53015). File is located on Nasa Energy Drive (Utility Verification). Percentage must be less than 5% for the month. Email NASA Energy Monitor that verification has been made and MS Power Invoices are ready for certification. Verify the MS Power Invoice #17704-14000 against the meter readings on Leonard Kimble Drive. Input meter readings and MS Power Invoice #00039-51004 and #55896-53015 in SEAS (Base Side). Input meter readings and MS Power Invoice #17704-14000 in SEAS (Area 9).

## 5.0 Procedure

### 5.1 Monthly Invoice Disbursement (Electric/Gas)

#### 5.1.1 Due three days after certification of MS Power Invoice by the NASA Energy Monitor:

Enter meter readings in Seas from utility meter reading books. Check for discrepancies in readings. Enter MS Power invoices for Base Side. Prepare reports for Nasa Finance, save PDF file on NASA energy drive, email copies to Nasa Finance for distribution of cost.

Prepare Energy Consumption and Cost by Tenant/Building Electric Reports for LMFAC at Bldg. 5100, email to respective persons at corporate office. Prepare same reports for Tenants 305, 398, 399 and tenant 400. Email these reports to Budge Analyst in Virginia.

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	Review Date: March 4, 2018	
Responsible Office: FOSC/Facilities Maintenance & Operations		
<b>SUBJECT: Utility Billing</b>		

Prepare monthly folder and prepare hard copies of the following for folder:

Monthly Invoice Disbursement Electric Report.

MS Power Invoices (3) Scan and save on NASA Energy Drive.

## 5.2 Monthly Invoice Disbursements Natural Gas

5.2.1 Due three days after certification of natural gas transportation invoice, certified by NASA Energy Monitor:

Enter gas meter readings and Sage Gas Invoice in SEAS (Base Side).

Verify Sage Gas Invoice against Main Gas meter, Bldg. 8100 and Bldg. 8101 on spreadsheet located on the NASA Energy Drive. Scan Invoice and save on energy drive. Percentage must be less than 10%. Send spreadsheet to NASA Energy Monitor for signature of Invoice.

5.3 Receive CenterPoint Gas Invoice for Area 9. Verify all meter readings on invoice for each building. Verify cost and send to Nasa Energy Manager for approval. Prepare spreadsheet on energy drive called CenterPoint Gas Report and cost to Nasa Finance for distribution.

## 6.0 Safety

No safety Requirements

## 7.0 Attachments and Forms

None

## 8.0 Quality Records

As identified in the SSC/FOS Master Records Index List (electronic).



National Aeronautics and  
Space Administration

**John C. Stennis Space Center**  
Stennis Space Center, MS  
39529-6000

**SRD-RPT-0001**  
**Rev 0B**  
**December 20, 2012**

**John C. Stennis Space Center**

**Rocket Propulsion Test  
Operational Support Plan**

**&**

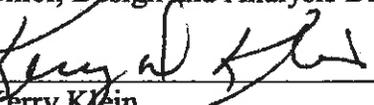
**Systems Requirements**

Stennis Operational Rocket Propulsion Test Support Plan and Requirements	SRD-RPT-0001	0B
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	Expiration Date: December 31, 2014	
Responsible Office: EA00/Engineering and Test Directorate		
<b>SUBJECT: Operational Test Support Requirements</b>		

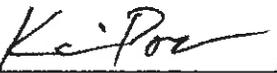
## Approval and Concurrence

Recommended:   
 Bradley P. Messer  
 Chief, Systems Engineering and Integration

Concur:  5/3/2010  
 David Coote  
 Chief, Design and Analysis Division

Concur:  5/3/2010  
 Kerry Klein  
 Chief, Operations Division

Concur:  5-4-2010  
 Ben Powell  
 Lead RA20 Test (acting)

Concur:   
 Kevin Power  
 Project Manager RPT III

Approved:  5/5/2010  
 Randy Galloway  
 Director, Engineering and Test



Stennis Operational Rocket Propulsion Test Support Plan and Requirements	SRD-RPT-0001	0B
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<b>SUBJECT: Operational Test Support Requirements</b>		

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Table 2: High Pressure Gas Facility – Helium Gaseous Distribution System Pressures

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## 1.0 PURPOSE

The purpose of this document is to outline the requirements and establish objectives and targets for operational rocket propulsion test support at the John C. Stennis Space Center (SSC). This plan documents all operational requirements and expectations for the High Pressure Gas Facility (HPGF), the Cryogenic Propellant Storage Facility (CPSF), and the High Pressure Industrial Water (HPIW) facility. Additional operational requirements for fire and gas leak notification and emergency support are outlined.

## 2.0 APPLICABILITY

Test area operational support requirements, as referred to in this plan, are applicable to NASA/SSC and NASA's support contractors. This document defines the operational support requirements and captures all the various customers' support requirements for all the test support areas. This will supersede verbal orders and emails as the source of requirements for standard operational support. Special requests for support from the test support facilities that are outside of these defined parameters or support for greater than normal usage should be directed either to the appropriate NASA Facility Manager at a minimum of 24 hours in advance of need.

## 3.0 AUTHORITY

- (i) 42 U.S.C 2473 (c)(1), National Aeronautics and Space Act of 1958, as amended.
- (ii) NPR 1000.2, *NASA Strategic Management Handbook*.
- (iii) NPR 7120.5, *NASA Program & Project Management Processes and Requirements*.
- (iv) NPR 7123.1, *Systems Engineering Procedural Requirements*.
- (v) SPD 1107.1, *SSC Organization and Mission Responsibilities*.

## 4.0 REFERENCES

- (i) SSC Management Plan
- (ii) SSC Test Complex Infrastructure Condition and Maintenance Performance Assessment Report May 2007
- (iii) ANSI S3.2-1989 American National Standard Method for Measuring the Intelligibility of Speech over Communications

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(iv) NFPA-72H Supplement 4

(v) Test Facilities Capability Handbook (2007)

## 5.0 RESPONSIBILITY

Operations for all test support systems are the responsibility of the NASA SSC Center Operations Directorate (COD) and the Test Operations Contractor, known at NASA Test Operations Group (NTOG) as specified by respective contracts. Support and engineering services for these facility systems are provided by NASA SSC Engineering and Test Directorate (E&TD), Test Operations Contractor (NTOG) and the Facility Operations Support Contractor (FOSC). A further breakdown of the operational roles and responsibilities can be seen in Table 1.

### NASA Test Complex Sustainment and Operational Roles & Responsibilities

TECHNICAL TASK / FUNCTION / ROLE	COD	E&TD
P=Prime Responsibility; S=Support to Prime, N=No role, or negligible role in this technical area.		
Insight of TOC/HAT/FOSC test complex <i>maintenance</i> activities including inputs to contract performance	P	S
Insight of Operations/Maintenance at HPIW	P	S
Insight of Operation/Maintenance at HPGF	P	S
Insight of Operations/Maintenance at CPSF	P	S
Maintenance project planning (short term/long term)	P	S
Technical oversight of test conduct operations by HATC, TOC; responsible for conduct of test operations at E complex	S	P
Engineering design/analysis responsibility for technical systems and STE (includes technical authority) (see list of technical systems) ( <i>note 1</i> )	S	P
Real property management	P	S
BMAR /deferred maintenance reporting	P	N
Engineering Technical Authority for test activities	N	P
Definition of engineering requirements/specifications for refurbishment, modernization, or repair by replace projects affecting technical /test systems (excludes construction fabrication packages)	S	P
Maintenance of STE /oversight of STE maintenance	S	P
MRB engineering authority for discrepancies found by/affecting maintenance on technical systems	S	P
Reliability Centered Maintenance for Technical Systems	S	P

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TECHNICAL TASK / FUNCTION / ROLE	COD	E&TD
Provide engineering and test conduct support to test projects	S	P
Provide facility O&M for Test Support facilities	P	S
Provide for operations of non-technical systems and maintenance of all facility systems on test stands/projects.	P	S
Engineering design/analysis responsibility for non-technical facility systems	P	S
Maintain SOMRD data base	P	S
Reporting facility operations/maintenance issues that may affect test readiness at appropriate E&TD forums	P	S
Develop construction/fabrication packages	P	S
EOs/ECRs affecting A/B/E test stands (see note 2)	S	P
EOs/ECRs affecting Test Support facilities (see note 3)	P	S
Discrepancy Reports (see note 4)	P	S
Discrepancy and Corrective Action Reports	P	S
FERP Approvals	P	S
NOTES: (1) Design & analysis division, along with E&TD CCB Technical Authority (2) Primary responsibility belongs to E&TD Test Directors (3) Primary responsibility belongs to COD Ops Managers (4) Exception: E-Complex will be the responsibility of the Test Directors with notifications to the Ops Managers.		

## 6.0 Background

Three test stands, A-1, A-2 and the dual B-1/B-2, were built in the early 1960s to test the first and second stages of the Apollo Saturn V rocket that safely transported Americans to the moon. The A Test Complex consists of two single-position, vertical-firing test stands designated A-1 and A-2. Configurations for the A Test Complex test stands have consisted of full flight-stage and main propulsion systems, and single-engine testing at sea level and altitude simulation. The B Test Complex consists of a dual-position; vertical, static-firing test stand designated the B-1/B-2 Test Stand. First stages of the Apollo Saturn V rocket were static fired in the B-2 test position for acceptance testing from 1967 to 1970. SSC presently leases the B-1 test position to Pratt & Whitney Rocketdyne for testing of the RS-68 engine. The SSC test stands provide test operations for the development of propulsion systems, engines, subsystems and components. The E Test Complex was constructed as a result of several national propulsion development programs in the late 1980s and early 1990s. The versatile, three-stand complex includes seven separate test cells capable of testing that involves ultra high-pressure gases and high-pressure, super-cold fluids.

The test stands are linked by a 7½-mile canal system used primarily for transporting liquid propellants. Additional features of the test complex include test control centers, data acquisition facilities, a large high-pressure gas facility, a high-pressure industrial water facility served by a 66-million gallon reservoir and an electrical generation plant.

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More information on the test facilities at SSC can be found at <http://rockettest.ssc.nasa.gov/>.

## 7.0 TEST SUPPORT

### 7.1 High Pressure Industrial Water Facility

The main purpose of the High Pressure Industrial Water Facility is to provide water to the A and B test complexes for test stand deflector coolant, fire protection for the test stands (deluge) and propellant barges, and the diffuser operation on the A-2 test stand. A secondary system housed in the HPIW facility is that of emergency backup electrical power generation for the test complexes.

OSR-001 HPIW system shall be supplied by ten NorDberg/Delaval pump assemblies each supplying a maximum of 33,385 gallons of water per minute for test purposes.

Verification Method: Inspection

OSR-001.1 The NorDberg diesel engines powering the DeLaval pumps shall be configured to comply with 40 CFR Part 63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE NESHAP), beginning approximately May 2013. RICE NESHAP Emissions requirements are specified per code applicable sections:

Table 2D: *Table 2to Subpart ZZZZ of Part 63*, Requirements

Table 2B: *Table 2to Subpart ZZZZ of Part 63*, Operating Limitations

*Note: The project goal is to bring the SSC engines into compliance with RICE NESHAP as follows:*

1. *Reduce current CO emission by 70% utilizing an oxidation catalyst (ea. Source or Engine)*
2. *Monitor catalyst performance (ea. Source or Engine)*
3. *Install a closed crankcase filtration system (ea. Source or Engine)*

Verification Method: Inspection

OSR-001.2 Compliance testing shall be conducted in accordance with requirements and methods provided in 63.6620 and Table 4 to Subpart ZZZZ of Part 63.

Verification Method: Inspection

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**OSR-002** HPIW shall be supplied to the A-Complex through a 75-inch diameter supply line. This line feeds a manifold that supplies two 66 inch diameter lines, one to support A-1 test operations and one to support A-2 test operations.

Verification Method: Inspection

**OSR-003** HPIW shall be supplied to the B-Complex through a 96-inch diameter supply line.

Verification Method: Inspection

**OSR-004** A minimum of 1000 gallons of diesel fuel shall be available to run the HPIW water pumps at all times. The appropriate test facilities and project managers should be notified when this level is neared.

Verification Method: Inspection

**OSR-005** The HPIW Plant Emergency Electric Generator System shall have a minimum of three of the four generators available at all times.

Verification Method: Inspection

OSR-005.1 The HPIW Plant Emergency Electric Generators diesel engines shall be configured to comply with 40 CFR Part 63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE NESHAP), beginning approximately May 2013. RICE NESHAP Emissions requirements are specified per code applicable sections:

Table 2D: Table 2to Subpart ZZZZ of Part 63, Requirements

Table 2B: Table 2to Subpart ZZZZ of Part 63, Operating Limitations

*Note: The project goal is to bring the SSC engines into compliance with RICE NESHAP as follows:*

1. *Reduce current CO emission by 70% utilizing an oxidation catalyst (ea. Source or Engine)*
2. *Monitor catalyst performance (ea. Source or Engine)*
3. *Install a closed crankcase filtration system (ea. Source or Engine)*

Verification Method: Inspection

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OSR-005.1.1 Existing non-emergency CI engines greater than or equal to 300 HP that are not equipped with a closed crankcase ventilation must either:

- 1) Install a closed crankcase ventilation system that prevents crankcase emissions from being emitted to the atmosphere, or
- 2) Install an open crankcase filtration emission control system that reduces emissions from the crankcase by filtering the exhaust stream to remove oil mist, particulates, and metals.

Verification Method: Inspection

OSR-005.2 Compliance testing shall be conducted in accordance with requirements and methods provided in 63.6620 and Table 4 to Subpart ZZZZ of Part 63.

Verification Method: Inspection

## **7.2 High Pressure Gas Facility**

The High Pressure Gas Facility maintains and furnishes a constant supply of various high-pressure gases to the SSC gaseous distribution system. Operation requirements are met by receiving the liquid and/or gas commodities, storing the raw commodity, and distributing the commodity at the required cleanliness levels and supply pressures. The gaseous commodities supplied to the SSC gaseous distribution systems are high-pressure hydrogen, high-pressure nitrogen, high-pressure helium and high-pressure air.

### **7.2.1 HPGF Liquid Hydrogen Storage and Gaseous Distribution System**

Liquid Hydrogen (LH2) is supplied to SSC by vendor tank truck and off-loaded into the HPGF LH2 low pressure storage vessel. The LH2 is converted to gaseous hydrogen (GH2) via expansion to the desired system pressure. The GH2 is distributed through a two-inch diameter transfer line to pressure vessels located throughout the Test Complex.

**OSR-006** The HP GH2 pressure shall not exceed the MAWP of 6000 psig.

Verification Method: Inspection

#### **7.2.1.1 A-Complex HPGF GH2**

**OSR-007** GH2 shall be supplied to the A-Complex storage bottles through the GH2 site wide distribution system.

Verification Method: Inspection

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**OSR-008** A minimum pressure of 1000 psig shall be maintained in the A-Complex GH2 distribution system on non-testing days.

Verification Method: Inspection

**OSR-009** A minimum pressure of 2300 psig shall be maintained in the A-Complex GH2 distribution system on test days.

Verification Method: Inspection

**OSR-010** GH2 shall have a minimum pressure of 2300 psig in the A-Complex by 10:00 am local time on test days.

Verification Method: Inspection

#### **7.2.1.2 B-Complex HPGF GH2**

**OSR-011** GH2 shall be supplied to the B-Complex storage bottles through the GH2 site wide distribution system.

Verification Method: Inspection

**OSR-012** A minimum pressure of 2500 psig shall be maintained in the B-Complex GH2 distribution system on non-test days.

Verification Method: Inspection

**OSR-013** GH2 shall have a minimum pressure of 2500 psig in the B complex by 10:00 am local time on test days.

Verification Method: Inspection

#### **7.2.1.3 E-Complex HPGF GH2**

**OSR-014** GH2 shall be supplied to the E-Complex through the GH2 site wide distribution system and B-Complex storage bottles.

Verification Method: Inspection

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**OSR-015** A minimum pressure of 2000 psig shall be maintained in the E-Complex GH2 distribution system on non-testing days.

Verification Method: Inspection

**OSR-016** A minimum pressure of 2500 psig shall be maintained in the E-Complex GH2 distribution system on test days.

Verification Method: Inspection

A summary of A, B, and E HPGF Test Site GH2 requirements are given in Table 1

HPGF Test Site Hydrogen Gas Pressure		
Test Site	Non Test Day Pressure	Test Day Pressure
A - Complex	1000 psig	2300 psig *
B - Complex	2500 psig	2500 psig *
E - Complex	2000 psig	2500 psig *

\* The testing values need to occur by 10:00 am local time day of test.

**Table 1**  
**High Pressure Gas Facility – Hydrogen Gaseous Distribution System Pressures**

**7.2.2 HPGF Helium Supply System**

Gaseous helium is supplied to SSC by vendor tank truck and off-loaded into a HPGF GHe low pressure (LP) storage vessel (max storage pressure = 450 psig). The helium is then further pressurized through a set of compressors and passed through a separator and filters to remove oil contaminants, particulates, and water vapor.

The GHe is distributed through a transfer line to the site-wide distribution system and pressure vessels located throughout the Test Complex.

**OSR-017** The HP GHe operating system pressure shall not exceed the system MAWP of 4,500 psig.

Verification Method: Inspection

**OSR-017.1** The GHe compressor system shall be capable of producing a nominal overall system flowing capacity of 1200 SCFM gas at a 4500 psig discharge pressure based on an inlet suction pressure of 225 psig.

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- NOTES:*
- 1) Existing (2 ea.) Henderson model compressors are rated for 400 SCFM flowing capacity at a 6000 psig discharge pressure based on a minimum of 225 psig suction inlet pressure. These units have capability to operate at a 150 psig minimum suction inlet pressure, with significantly reduced flow capacity.
  - 2) A goal capacity for the GHe System would be for up to 1600 SCFM flowing capacity, pending capacity ratings of installed compressors, quantity & type of installed compressors, and maintenance schedules.

Verification Method: Inspection

**OSR-017.1.1** The primary GHe compressors shall be capable of producing a rated unit flowing capacity of 400 SCFM, or greater, gas at a 4500-6000 psig discharge pressure based on an inlet suction pressure of approximately 225 psig.

Verification Method: Inspection

**OSR-017.1.2** The primary GHe compressor(s) shall be capable of operating at a minimum inlet suction pressure of 150 psig with a discharge pressure of 4500-6000 psig at an “as available” reduced flow capacity.

Verification Method: Inspection

**OSR-017.1.3** The GHe compression system shall incorporate provisions (such as valves pipe bosses, etc) for a capability to interface with a secondary compressor unit, when necessary, to evacuate GHe storage vessels or supplier bottles to a minimum pressure of 25 psig (5 psig goal), and with an output discharge pressure of 450 psig (2500-4500 psig goal).

Verification Method: Inspection

**OSR-017.2** Each GHe compressor requiring auxiliary cooling, other than ambient air, will be configured for using a water, fluid-cooling, system requiring a water flow rate of approximately 50 gpm, producing a 10°F delta temperature across the compressor.

Verification Method: N/A (Header section information of statement.)

**OSR-017.2.1** The GHe compressors shall be able to be operated on at least 2 fluid coolers to allow for redundant capability.

Verification Method: Inspection

**OSR-017.2.2** Each fluid cooler for the GHE compressor system shall provide at least 100% cooling capacity required for all GHe compressors combined.

Verification Method: Inspection

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**OSR-017.2.3** The fluid cooler systems for the GHe compressors shall be configured for cross-over capability to interface with the air compressor fluid coolers for temporary or emergency operations.

- NOTES:**
- 1) *The implementation of this requirement is envisioned to be by adding the necessary components to the piping configuration to allow use of something like a cam-lock hose connection to the piping systems. This configuration would provide, in an extreme case of need, the supply and return circuits of the helium compressor cooling systems to be connected by hoses; similar to how temporary chillers are connected to building systems. This approach should provide for emergency or temporary operations to critical systems, without the adverse effects associated with stagnant water contained in no-flow sections of piping, and prevents potential for operating interconnecting valves in a configuration outside that for which it was designed.*
  - 2) *This capability may also provide for temporary interconnect capability with the facility air compressor cooling system to support operation of a minimum of one air compressor during an emergency condition.*

Verification Method: Inspection

**OSR-017.2.4** The GHe compressor fluid cooling water system shall utilize a chemical injection system to maintain water quality in the fluid coolers.

Verification Method: Inspection

**OSR-017.3** The HPGF shall provide electrical power to the GHe compressors via standard utility power source, and emergency power from either the 1.5 MW generators from Building 4400 (HPIW facility) or from existing 800kW generator located at the HPGF.

Verification Method: Inspection

**OSR-017.3.1** The electrical power requirements for the GHe compressors shall not exceed 460 Volt, 3-phase, 60 Hz, 400 amp service per each compressor.

Verification Method: Inspection

**OSR-017.4** Each GHe compressor shall be controlled locally with a Programmable Logic Controller (PLC) connected to the Central Control system, with capability for manual or automatic control via local or remote control features.

Verification Method: Inspection

#### **7.2.2.1 A-Complex HPGF Helium**

**OSR-018** GHe shall be supplied to the A-Complex storage bottles through the GHe site wide distribution system.

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Verification Method: Inspection

**OSR-019** GHe site wide distribution system shall have a flow measurement device located between SSC site-wide distribution and the B-Complex.

Verification Method: Inspection

**OSR-020** The GHe flow measurement device shall display measure in units of standard cubic-feet.

Verification Method: Inspection

**OSR-021** A minimum pressure of 2000 psig shall be maintained in the A-Complex GHe distribution system on non-testing days.

Verification Method: Inspection

**OSR-022** A minimum pressure of 3000 psig shall be maintained in the A-Complex GHe distribution system by 10:00 am local time on test days.

Verification Method: Inspection

#### **7.2.2.2 B-Complex HPGF Helium**

**OSR-023** GHe shall be supplied to the B-Complex storage bottles through the GHe site wide distribution system.

Verification Method: Inspection

**OSR-024** GHe site wide distribution system shall have a flow measurement device located between SSC site-wide distribution and the B-Complex.

Verification Method: Inspection

**OSR-024.1** The GHe flow measurement device shall display measure in units of standard cubic-feet.

Verification Method: Inspection

**OSR-025** A minimum pressure of 2000 psig shall be maintained in the B-Complex GHe distribution system on non-testing days.

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Verification Method: Inspection

**OSR-026** A minimum pressure of 3500 psig shall be maintained in the B-Complex GHe distribution system by 10:00 am local time on test days.

Verification Method: Inspection

**OSR-027** A minimum pressure of 3000 psig shall be maintained in the B-Complex GHe distribution system by on the day (1<sup>st</sup> Shift) before a Hot Fire test.

Verification Method: Inspection

**7.2.2.3 E-Complex HPGF Helium**

**OSR-028** GHe shall be supplied to the E-Complex storage bottles through the GHe site wide distribution system.

Verification Method: Inspection

**OSR-029** GH2 site wide distribution system shall have a flow measurement device located between SSC site-wide distribution and the E-Complex.

Verification Method: Inspection

**OSR-029.1** The GH2 flow measurement device shall display measure in units of standard cubic-feet.

Verification Method: Inspection

**OSR-030** A minimum pressure of 2000 psig shall be maintained in the E-Complex GHe distribution system on non-testing days.

Verification Method: Inspection

**OSR-031** A minimum pressure of 2500 psig shall be maintained in the E-Complex GHe distribution system by 10:00 am local time on test days.

Verification Method: Inspection

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A summary of A , B, and E HPGF Test Site GHe requirements are given in Table 2

HPGF Test Site Helium Gas Pressure		
Test Site	Non Test Day Pressure	Test Day Pressure
A - Complex	2000 psig	3000 psig *
B - Complex	2000 psig **	3500 psig *
E - Complex	2000 psig	2500 psig *

\* The testing values need to occur by 10:00 am local time day of test.

\*\* The day prior to any B-1 test is that the HPGF has the B-Complex helium at 3000 psig sometime on first shift. This is needed to charge the spin start bottles.

**Table 2:  
High Pressure Gas Facility – Helium Gaseous Distribution System Pressures**

### 7.2.3 HPGF Liquid and Gaseous Nitrogen Supply System

Liquid nitrogen (LN2) is supplied to SSC by vendor tank truck and off-loaded into a HPGF LN2 LP storage vessel. The liquid nitrogen from the storage vessels is pumped through ambient air vaporizes that produce gaseous nitrogen (GN2). The GN2 is distributed through a four inch diameter transfer line to the site-wide distribution system and pressure vessels located throughout the Test Complex.

**OSR-032** The maximum GN2 pressure shall not exceed 4,400 psig

Verification Method: Inspection

#### 7.2.3.1 A-Complex HPGF GN2

**OSR-033** GN2 shall be supplied to the A-Complex storage bottles through the GN2 site wide distribution system.

Verification Method: Inspection

**OSR- 34** GN2 site wide distribution system shall have a flow measurement device located between SSC site-wide distribution and the A-Complex.

Verification Method: Inspection

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**OSR-034.1** The GN2 flow measurement device shall display measure in units of standard cubic-feet.

Verification Method: Inspection

**OSR-035** A minimum pressure of 2800 psig shall be maintained in the A-Complex GN2 distribution system on non-testing days.

Verification Method: Inspection

**OSR-036** A minimum pressure of 3200 psig shall be maintained in the A-Complex GN2 distribution system by 10:00 am local time on test days.

Verification Method: Inspection

**7.2.3.2 B-Complex HPGF GN2**

**OSR-037** GN2 shall be supplied to the B-Complex Storage bottles through the GN2 site wide distribution system.

Verification Method: Inspection

**OSR-038** GN2 site wide distribution system shall have a flow measurement device located between SSC site-wide distribution and the B-Complex.

Verification Method: Inspection

**OSR-038.1** The GN2 flow measurement device shall display measure in units of standard cubic-feet.

Verification Method: Inspection

**OSR-039** A minimum pressure of 2800 psig shall be maintained in the B-Complex GN2 distribution system on non-testing days.

Verification Method: Inspection

**OSR-040** A minimum pressure of 3200 psig shall be maintained in the B-Complex GN2 distribution system by 10:00 am local time on test days.

Verification Method: Inspection

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**7.2.3.3 E-Complex HPGF GN2**

**OSR-041** GN2 shall be supplied to the E-Complex Storage bottles through the GN2 site wide distribution system.

Verification Method: Inspection

**OSR-042** GN2 site wide distribution system shall have a flow measurement device located between SSC site-wide distribution and the E-Complex.

Verification Method: Inspection

**OSR-042.1** The GN2 flow measurement device shall display measure in units of standard cubic-feet.

Verification Method: Inspection

**OSR-043** A minimum pressure of 2000 psig shall be maintained in the E-Complex GN2 distribution system by 10:00 am local time on test days.

Verification Method: Inspection

**OSR-044** A minimum pressure of 3000 psig shall be maintained in the E-Complex GN2 distribution system on test days.

Verification Method: Inspection

A summary of A, B, and E HPGF Test Site GN2 requirements are given in Table 3

HPGF Test Site Nitrogen Gas Pressure		
Test Site	Non Test Days	Test Days
A - Complex	2800 psig	3200 psig*
B - Complex	2800 psig	3200 psig*
E - Complex	2000 psig	3000 psig*

\* The testing values need to occur by 10:00 am local time day of test.

**Table 3**  
**High Pressure Gas Facility – Nitrogen Gaseous Distribution System Pressures**

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#### **7.2.4 HPGF High Pressure Air Supply System**

Atmospheric air is drawn through roof level intakes at the HPGF. The air is drawn through oil bath filters by multiple compressors. The air is compressed and commonly forced through two special air drying filters to remove moisture and an absorption unit to remove hydrocarbons and compressor oil. The air is then forced through special bag-type filtration to remove accumulate particles. The processed air is then designated to be missile grade air the processed is distributed through a three inch diameter transfer line.

**OSR-045** The HPA pressure shall not exceed MAWP of 2,800 psig

Verification Method: Inspection

##### **7.2.4.1 A-Complex HPGF HPA**

**OSR-046** HPA shall be supplied to the A-Complex storage bottles through the HPA site wide distribution system.

Verification Method: Inspection

**OSR-047** A minimum pressure of 1500 psig shall be maintained in the A-Complex HPA distribution system on non-testing days.

Verification Method: Inspection

**OSR-048** A minimum pressure of 1500psig shall be maintained in the A-Complex HPA distribution system by 10:00 am local time on test days.

Verification Method: Inspection

##### **7.2.4.2 B-Complex HPGF HPA**

**OSR-049** HPA shall be supplied to the B-Complex storage bottles through the HPA site wide distribution system.

Verification Method: Inspection

**OSR-050** A minimum pressure of 1500 psig shall be maintained in the B-Complex HPA distribution system on non-testing days.

Verification Method: Inspection

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**OSR-051** A minimum pressure of 1500 psig shall be maintained in the B-Complex HPA distribution system by 10:00 am local time on test days.

Verification Method: Inspection

**7.2.4.3 E-Complex HPGF HPA**

**OSR-052** No minimum pressure shall be maintained in the E-Complex HPA distribution system

Verification Method: Inspection

A summary of A, B, and E HPGF Test Site HPA requirements are given in Table 4

HPGF Test Site High Pressure Air		
Test Site	Non Test Days	Test Days
A - Complex	1500 psig	1500 psig*
B - Complex	1500 psig	1500 psig*
E - Complex	N/A	N/A

\* The testing values need to occur by 10:00 am local time hour's day of test.

**Table 4**  
**High Pressure Gas Facility – High Pressure Air Distribution System Pressures**

**7.2.5 Natural Gas System**

The natural gas is supplied by a site-wide distribution system. The system is primarily used to maintain proper ignition of the hydrogen flare stack along with other facility operations such as heat during the winter months. There are no documented operational requirements for this system.

**7.3 Propellants**

Cryogenic Operations provides liquid oxygen and liquid hydrogen for engine test programs that require large quantities of liquid propellants. LOX and LH2 are provided to the A and B complex via cryogenic barges. There are a total of six LOX barges and three LH barges.

**7.3.1 Liquid Oxygen**

LOX is delivered to the LOX transfer area for loading on to barges or delivered directly to the E-Complex for off loading.

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### **7.3.2 Liquid Hydrogen (LH2)**

LH2 will be delivered to the LH transfer area for unloading into barges, the Praxair storage sphere or delivered directly to the E-Complex or HPGF for off loading.

### **7.3.3 Isopropyl Alcohol (IPA)**

IPA can be delivered directly to the E-Complex for off loading. No additional operational requirements at this time.

### **7.3.4 Kerosene (RP1, JP4, JP8)**

RP1, JP4, JP8 can be delivered directly to the E-Complex for off loading. No additional operational requirements at this time.

### **7.3.5 Liquid Nitrogen (LN<sub>2</sub>)**

LN can be delivered to the LOX transfer area for loading on to barges or shipped directly to the E-Complex or HPGF for off loading.

## **7.4 New AB Communications System Overview**

The new A-B Communications System consist of wall stations, desktop stations, outdoor stations, hazardous location stations, wireless stations, headsets, external microphones and visual/audio indicators. It shall also include any supporting hardware, software and cabling required for the system to function. The system provides capabilities for point-to-point, conference and page line operation line operation at various locations throughout the system. Two-way conversations shall take place between stations using headsets or telephone-type handsets. Handsets/Headsets perform in areas as high as 115 dB (Sound Pressure Level) ambient noise without the use of acoustical enclosures or booths (not to exceed 115 dB SPL). Each station is capable of switching between the page line and twenty (20) common-talking party line(s).

The systems provides for intercommunication between the A-1, A-2, B-1, B-2, A-Test Control Facility, B-Test Control Facility, Data Acquisition Facility, High-Pressure Gas, High-Pressure Industrial Water, Power Generation, Barge Docks, Facility Access Gates and Guard Houses. The system shall have the capability to be expanded to provide intercommunication capabilities with the E-Complex, Buildings 3325, 3326 and 1100. The design life expectancy of system is at least 10 years

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**OSR-053** The communications system shall maintain an operating duty cycle of 24 hours per day, 7 days per week throughout the system life

Verification Method: Inspection

**OSR-054** The communications system shall provide for storage of configuration and setup information in non-volatile storage.

Verification Method: Inspection

**OSR-055** The communications system shall maintain the capable of support a minimum of 500 individual stations.

Verification Method: Inspection

**OSR-056** The communications system shall maintain full duplex communications.

Verification Method: Inspection

**OSR-057** The communications system shall maintain interface capability to an audio recorder for documenting test stand communications

Verification Method: Inspection

**OSR-058** The communications system shall maintain an interface to the existing public address system.

Verification Method: Inspection

**OSR-059** The communications system shall maintain an interface to the SSC telephone system and allow point-to-point dialing access.

Verification Method: Inspection

**OSR-060** The communications system shall maintain interface capability to SSC site radio system

Verification Method: Inspection

**OSR-061** The communications system shall maintain compliance with applicable Federal Communications Commission (FCC) regulations for industrial environments.

Verification Method: Inspection

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**OSR-062** The communications system shall provide equipment health and status information. The execution of the health and status functions shall have no interference with real time operational data flow or processing on other interfaces.

Verification Method: Inspection

**OSR-063** The communications system shall maintain and availability of a least 0.999975 with a MTBCF of at least 20,000 hours.

Verification Method: Inspection

**OSR-064** All communications subsystem elements shall have an MTSR of no more than 30 minutes for 90% of the failures.

Verification Method: Inspection

**OSR-065** Each communications Station shall meet an MTBF of at least 25,000 hours.

Verification Method: Inspection

**OSR-066** The communications System shall complete a power up within a five (5) minute time period, including establishing connectivity to the switch subsystem and be operationally ready.

Verification Method: Inspection

**OSR-067** The communications System shall reload all operating software during a “boot up” (e.g., when power is first applied, or a system cold start. The system when fully booted up would be at a state of readiness for initiating and loading conference or connectivity maps into system).

Verification Method: Inspection

**OSR-068** The communications System LRUs shall be “hot swappable” (see glossary).

Verification Method: Inspection

**OSR-069** The communications System shall automatically reload all necessary configurations to be “Operational” when either of the following occurs: Removal and replacement; or Card reset via card reset button or via an LSA

Verification Method: Inspection

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**7.5 Test Complex and Support Facilities Hydrogen Fire and Gas Leak Detect Supervisory System and Alarm Requirements**

Requirements for Hydrogen Fire and Gas Leak Detect Supervisory Systems (F&GLDSS), alarm tones, and site notification at the SSC Test Complex, including A-Complex, B-Complex, High Pressure Gas Facility (HPGF), Cryo Facility and E-Complex. The SSC test complex requirements for hydrogen fire and hydrogen gas leak alarms are based on NFPA-72H Supplement 4 "Occupant Response to Fire Alarm Signals": "It is expected that the fire alarm signal will be understood by occupants as the evacuation signal which is defined as a distinctive signal intended to be recognized by the occupants –" NFPA acknowledges the need to identify a unique fire alarm signal. NFPA does not limit the alarm sound. NFPA does require universal identification through the use of a consistent sound pattern.

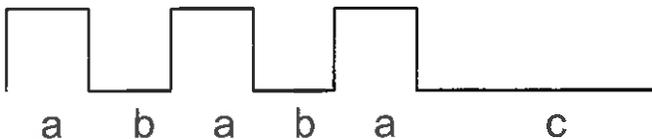
**7.5.1 Alarm Patterns**

**OSR-070 Temporal Three Pattern**, described in ISO 8201 "Acoustics – Audible Emergency Evacuation Signal" has been required by NFPA 72 since 1996 shall be used for all emergency tones.

Verification Method: Inspection

Temporal Three Pattern Alarm Definition:

- a - On for 0.5 second
- b - Off for 0.5 sec
- c - Off for 1.5 sec
- 4 second cycle, repeat.



**Temporal 3 Pattern**

**OSR-071** The standard alarm definition is ANSI S3.41 "Audible Emergency Evacuation Signal" shall be used through the test complex. ANSI S3.41 conforms to International Standard for Audible Emergency Evacuation Signal, ISO 8201.

Verification Method: Inspection

**OSR-072 Fire Alarm NFPA 1200 (Hz) tone** (refer to Wheelock's (WL) NFPA C3horn) shall be used to alert users to a potential facility fire.

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Verification Method: Inspection

**OSR-073 SSC H2 Fire Alarm NFPA Whoop** tone (refer to Federal Signal (FS) NFPA Whoop TM11) shall be used to alert users to a potential hydrogen fire. Note: the intent is to have a tone for hydrogen fire that is unique from the facility fire alarm.

Verification Method: Inspection

**OSR-074 SSC H2 Gas Alarm Warble** tone (similar to E-Complex) (refer to GAI-Tronics (GAI) TS959-12 Evacuation (warble)) shall be used to alert users to a potential hydrogen gas leak. Note: the intent is to have a continuous tone unique from fire alarm tones.

Verification Method: Inspection

**OSR-075 Lightning Hi-Lo** (refer to Wheelock's hilo) shall be used to alert users to potential lightning in the area. For reference, the SSC lightning warning has matched the standard KSC lightning warning tone.

Verification Method: Inspection

### 7.5.2 Spoken Alarm Messages

**OSR-076** Recorded spoken messages are desirable but not required by NFPA. When applied, spoken messages should:

- Describe the problem
- Identify the location
- Define the response.
- Every alarm message should be consistent in pattern, tone, and volume.

Spoken messages can be recorded by a live person with good voice, speech, and enunciation. For several messages, recording Text-To-Speech messages should be more economical, and easier to change.

- Message sound clips can be pre-recorded and stored in a computer, or downloaded to a tone generator or appliance (if capable).
  - The audio clip type (Wave, MP3) must be compatible with the device.
- The Test Complex Text-To-Speech applications should use licensed software. The voices used at A-Complex (AT&T Crystal and Mike) are popular choices.
- An alternate for spoken messages via the computer, is to download a few messages to the tone generator. This can be applicable at the HPGF with only a few messages.

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- Spoken messages must be intelligible; and must be audible over the background noise. NFPA recommends at least +10dB over the background noise.
- Provide live message capability with microphones.

Verification Method: Inspection

### **7.5.3 Site Notification Requirements**

**OSR-077** The detection of hydrogen fires shall be locally alarmed. Local facility procedures shall define the occupant's response to a hydrogen fire, and shall establish the content of any spoken or live messages.

Verification Method: Inspection  
Parent Document:

**OSR-078** The detection of hydrogen fire shall notify the fire department, via an input to the facility fire alarm panel. The hydrogen fire input zone shall be configured to not sound the local fire alarm.

Verification Method: Inspection

**OSR-079** The fire department will respond to hydrogen fire alarms at all locations, via the facility fire alarm system (not EMCS). The fire department's primary purpose is to provide medical aid and to secure the area. It is understood that facility operators are necessary to stop the source of hydrogen in order to extinguish the hydrogen fire.

Verification Method: Inspection

**OSR-080** During non-operational hours when the facility is not manned, the fire department or designee shall notify Operations personnel of a hydrogen fire alarm. Local facility procedures shall provide the call-in list and define the responsibilities of the operators.

Verification Method: Inspection

**OSR-081** The detection of hydrogen gas leaks shall be locally alarmed. Local facility procedures shall define the occupant's response to a hydrogen gas leak, and shall establish the content of any spoken or live messages.

Verification Method: Inspection

**OSR-082** The detection of hydrogen gas leaks may notify the site EMCS via an input to the local EMCS panel. Local facility requirements will determine if EMCS notification is to be provided.

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Verification Method: Inspection

**OSR-083** During non-operational hours when the facility is not manned, the EMCS operator or designee shall notify Operations personnel of a hydrogen gas alarm. Local facility procedures shall provide the call-in list and define the responsibilities of the operators.

Verification Method: Inspection

**OSR-084** Local facility procedures shall provide for fire department and/or EMCS notification, as required, when the hydrogen fire and gas systems are being tested.

Verification Method: Inspection

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## Appendix A: Abbreviations and Acronyms

<b>Acronym</b>	<b>Definition</b>
A/G	Air to Ground
AC	Alternating Current
AGC	Automatic Gain Control
ANSI	American National Standards Institute
AWG	American Wire Gauge
BXA	Bureau of Export Administration
COTS	Commercial-Off-The-Shelf
CPSF	Cryogenic Propellant Storage Facility
CPUs	Central Processing Units
D	Depth
dB	Decibels
dBm	Decibel, Milliwatt; decibel referenced to one Milliwatt into 600 ohms.
DC	Direct Current
DCN	Document Change Notice
EAR	Export Administration Regulations
EI	End Instrument
EIA	Electronic Industries Alliance
EMCS	Emergency Management Control System
GFE	Government Furnished Equipment
GHe	Gaseous Helium
GN	Gaseous Nitrogen
GOX	Gaseous Oxygen
GUI	Graphical User Interface
H	Height
Hc	Height (of cavity)
HP	High Pressure
HPA	High Pressure Air
HPGF	High Pressure Gas Facility
HPIW	High Pressure Industrial Water
HQ	Headquarters
Hz	Hertz
ICD	Interface Control Document
ID	Identification
IEEE	Institute of Electrical and Electronics Engineers
IETF	Internet Engineering Task Force
In <sup>2</sup>	Square inches
IP	Internet Protocol
ITU	International Telecommunications Union
Kbps	Kilo bits per second
kHz	Kilohertz
LAN	Local Area Network
LCD	Liquid Crystal Display
LH	Liquid Hydrogen
LHe	Liquid Helium

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LED	Light Emitting Diode
LN2	Liquid Nitrogen
LOX	Liquid Oxygen
LP	Low Pressure
LRU	Line Replaceable Unit
LSA	Local Site Administrator
Mbps	Mega bits per second
MCS	Manual Conference Signaling
MTBCF	Mean Time Between Critical Failures
MTBF	Mean Time Between Failure
MTSR	Mean Time To Service Restore
mW	Milli-watt
NASA	National Aeronautics Space Administration
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NIC	Network Interface Card
NISN	NASA Integrated Services Network
OSR	Operation Support Requiriement
PC	Personal Computer
PTT	Push To Talk
RF	Radio Frequency
RTC	Restricted Talk Conference
S/G	Space to Ground
SINAD	Signal, Noise and Distortion
SRD	System Requirements Document
T/L	Talk/Listen
ToS	Type of Service
UL	Underwriter Laboratories
UHP	Ultra High Pressure
USB	Universal Serial Bus
UV	Ultraviolet
W	Width
WAN	Wide Area Network
Wc	Width (of cavity)

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## Appendix B: Glossary of Terms

**As-Needed Support** – As-needed (or as-required) support pertains to optional vendor support that NASA may call upon for assistance with implementation activities. This support will be requested by NASA in writing, as the exercising of pre-defined options, and may be called upon at any time throughout the life of the contract.

**Checkpoint** – A point within the development cycle of a new or modified capability where the progress to date is verified via a prototype or demonstration in order to provide early assurance of the development progress and ensure the development is meeting requirements.

**Commercial-Off-The-Shelf (COTS) Equipment** – COTS equipment is defined as field proven, unmodified hardware produced by an established commercial manufacturer and sold during the course of conducting normal business operations. The COTS equipment is considered field proven, if the like equipment has been installed in at least three (3) installations and has been fully operational for a minimum of three (3) months. Quantities are considered substantial only when the quantities sold are sufficient to constitute a real commercial market.

**COTS Software** – COTS software is computer software, which is sold, licensed, or leased in quantities at established market or catalog prices.

**Custom Hardware** – Custom hardware is defined as that equipment developed for a specific application and is not commercially available.

**Custom Software** – Custom software is defined as that software developed for a specific application and is not commercially available.

**Export** – Any of the following:

- Any shipment, transfer, or transmission of commodities, technology, or software out of the United States;
- Any transfer to any person – either within or outside of the United States – of commodities, technology, or software, by physical, electronic, oral, or visual means, with the knowledge or intent that the items will be shipped, transferred, or transmitted outside of the United States;
- Disclosure of technical data to a foreign national, by physical, electronic, oral, or visual means, within or outside of the United States (disclosures to U.S. nationals representing foreign interests are not exports unless there is knowledge or reason to know that the technical data will be further disclosed to a foreign party);
- Any transfer to a foreign embassy or affiliate; and
- Transfer of control over a satellite or instruments on-orbit.

**Final Acceptance** – Final Acceptance of the product is defined as the time frame when all deliverable products have been successfully tested, shipped, received, inspected, and all open issues/discrepancies resolved.

**Hot-swappable** - The capability of being able to disconnect and connect devices (LRUs) while the system is in operation and have those devices (LRUs) be detected and start operation without having to reboot the system.

**Integrated COTS Equipment and Software** – Integrated COTS equipment and software is defined as the incorporation of different fully COTS components into the final deliverable product. While the delivered product is therefore a combination of several COTS elements, the Vendor treats the final product as one COTS product to the customer.

**Line Replaceable Unit (LRU)** – An LRU is the smallest field replaceable module, assembly, subassembly, or part in which a malfunction can be identified, and can be economically spared and stored. Malfunctioning LRUs are isolated, removed, and replaced within corrective maintenance time requirements as defined by the MTSR for that LRU.

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**MTBCF – Mean Time Between Critical Failures** – The average time a device will function before any non-redundant (i.e., critical) element failing.

**MTBF – Mean Time Between Failures** – The average time a device will function before failing. Reference the Appendix D for further definition and algorithms for computation.

**MTSR – Mean Time to Service Restore** – The mean time to restore service following system failures that result in a service outage. Note: The time to restore includes all time from the occurrence of the failure until the restoration of service (i.e., includes the time to isolate a failure to the defective replaceable module and the time to access, remove, and replace the defective module with an operational spare).

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**Appendix C: Applicable Contracts**

**CONTRACT NUMBER:** NNK07OO30B (NNS07AB56D) – expires 10/01/2009  
PRAXAIR - HELIUM

**CONTRACT NUMBER:** NAS10-12100 (NS-7509)\* - expires 12/01/2010  
PRAXAIR - LIQUID HYDROGEN

**CONTRACT NUMBER:** NAS10-12150 (NS-7510)\* - expires 12/01/2010  
AIR PRODUCTS - LIQUID HYDROGEN

**CONTRACT NUMBER:** NNK08OB11B (NNS08AA94D) – expires 07/01/2009  
PRAXAIR - LIQUID NITROGEN

**CONTRACT NUMBER:** NNK08OB10B (NNS08AA97D) – expires 07/01/2009  
AIR LIQUIDE - LIQUID NITROGEN

**CONTRACT NUMBER:** NNK04OB32B (NNS04AB51D) – expires 07/01/2009  
PRAXAIR LIQUID - OXYGEN

**NOTES:**

- THE AREAS INDICATED BY SHADING HAVE BEEN MAINTAINED OR WILL BE MAINTAINED BY MAKING A MINIMUM OF ONE PASS AROUND EACH OF THESE PERIMETERS WITH THE RIDING MOWER AT THE PREVIOUSLY ESTABLISHED MAINTENANCE CYCLES.
- MAINTENANCE CYCLES: PERIODIC MAINTENANCE CYCLES AND MAINTENANCE CYCLES IN AREAS TO BE MAINTAINED BY MOWER AND UNDERGROUND UTILITY LOCATIONS WILL BE EXTENDED FOR BETTER VISIBILITY.
- ON FLAT TOP ROAD FROM SDC NORTH FENCE LINE SOUTH TO WHERE NATIONAL GAS MAIN LINE INTERSECTS (1.5 MILES)
- ALONG NATIONAL GAS MAINLINE FROM INTERSECTION AT FLAT TOP ROAD TO HWY 807 (0.5 MILES)
- EXTEND APPROXIMATELY 15' ON EITHER SIDE OF CENTERLINE NATIONAL GAS CUT
- ONE PASS AROUND WARDEN'S SPORING STATION AT END OF FLAT TOP ROAD APPROXIMATE AREA 181.7 ACRES
- PERIMETER 135' ON EITHER SIDE OF "DRAIN" DITCH EXTENDING WEST FROM SOUTH LANE APPROXIMATE AREA 52.7 ACRES
- PERIMETER 135' ON EITHER SIDE OF "DRAIN" DITCH EXTENDING WEST FROM SOUTH LANE APPROXIMATE AREA 52.7 ACRES
- MAINTENANCE OF PERIMETER OF CONCRETE OF PONDERS WITH LINE CONTAINING TRAILER BAYS APPROXIMATE AREA 3.3 ACRES
- TOP OF FIRST 8 BANKS CUT ON REDCO POND APPROXIMATELY 1.7 ACRES. TOP OF BANKS TO BE CUT ON FOLIY BY GAS TRUNKER. BUNKER CUTTING TO BE WORKED UNDER "DEMAND" BUDGET.
- RAILROAD'S AREA, 93.2, 3007 APPROXIMATELY 2.7 ACRES TO BE CUT APPROXIMATELY 1.7 ACRES TO BE CUT UNDER "DEMAND" BUDGET APPROXIMATELY 51.7 ACRES.
- MAINTENANCE ROAD CUT NORTH TO TEXAS FLAT ROAD.
- HWY 807 AT SOUTH GATE TO J. J. MOORE SOUTH TO MISSISSIPPI STATE UNIVERSITY LINE. APPROXIMATELY 1/4 MI FROM WARDEN'S LINE TO INTERSECT HWY 807.
- 135' TO CONCRETE AREAS FOR UNDERGROUND UTILITY LOCATIONS ON SIDE OF WEST SIDE OF CANAL EXACT LOCATIONS SHOWN AND INCORPORATED INTO DRAINING ENHANCEMENT C-301.
- EXISTING ULTRAVIOLET LIGHT ROOMS (FORMER OF WARD) MUST BE MAINTAINED AND MAINTENANCE CYCLES FOR UNDERGROUND UTILITY LOCATIONS MUST BE MAINTAINED UNDER "DEMAND" BUDGET APPROXIMATELY 51.7 ACRES. OTHER UTILITY LOCATIONS SHALL BE MAINTAINED.

**LEGEND**

CODE	MAINTENANCE CYCLE	AREA IN ACRES	AREA 1	AREA 2	AREA 3	AREA 4	TOTAL
1	(WEEKLY)	98.0	2.4				101.4
2	(BI-WEEKLY)	231.0	9.7	56.6			296.4
3	(MONTHLY)	115.0	194.5	80.8			390.4
4	(YEARLY)	183.1	266.3	88.7			538.1
	DEMAND	91.6					91.6
	<b>TOTALS</b>	<b>1417.7</b>	<b>628.1</b>	<b>483.1</b>	<b>234.9</b>	<b>91.6</b>	

1. AREAS TO BE MAINTAINED BY RIDING MOWER SHALL BE CUT AT REAL WARDEN'S LINE CUTTING AND UNDERGROUND UTILITY LOCATIONS. UNLESS OTHERWISE NOTED, MAINTENANCE SHALL BE PERFORMED BY MOWER AND UNDERGROUND UTILITY LOCATIONS.

2. MAINTENANCE CYCLES: PERIODIC MAINTENANCE CYCLES AND MAINTENANCE CYCLES IN AREAS TO BE MAINTAINED BY MOWER AND UNDERGROUND UTILITY LOCATIONS WILL BE EXTENDED FOR BETTER VISIBILITY.

3. ON FLAT TOP ROAD FROM SDC NORTH FENCE LINE SOUTH TO WHERE NATIONAL GAS MAIN LINE INTERSECTS (1.5 MILES)

4. ALONG NATIONAL GAS MAINLINE FROM INTERSECTION AT FLAT TOP ROAD TO HWY 807 (0.5 MILES)

5. EXTEND APPROXIMATELY 15' ON EITHER SIDE OF CENTERLINE NATIONAL GAS CUT

6. ONE PASS AROUND WARDEN'S SPORING STATION AT END OF FLAT TOP ROAD APPROXIMATE AREA 181.7 ACRES

7. PERIMETER 135' ON EITHER SIDE OF "DRAIN" DITCH EXTENDING WEST FROM SOUTH LANE APPROXIMATE AREA 52.7 ACRES

8. PERIMETER 135' ON EITHER SIDE OF "DRAIN" DITCH EXTENDING WEST FROM SOUTH LANE APPROXIMATE AREA 52.7 ACRES

9. MAINTENANCE OF PERIMETER OF CONCRETE OF PONDERS WITH LINE CONTAINING TRAILER BAYS APPROXIMATE AREA 3.3 ACRES

10. TOP OF FIRST 8 BANKS CUT ON REDCO POND APPROXIMATELY 1.7 ACRES. TOP OF BANKS TO BE CUT ON FOLIY BY GAS TRUNKER. BUNKER CUTTING TO BE WORKED UNDER "DEMAND" BUDGET.

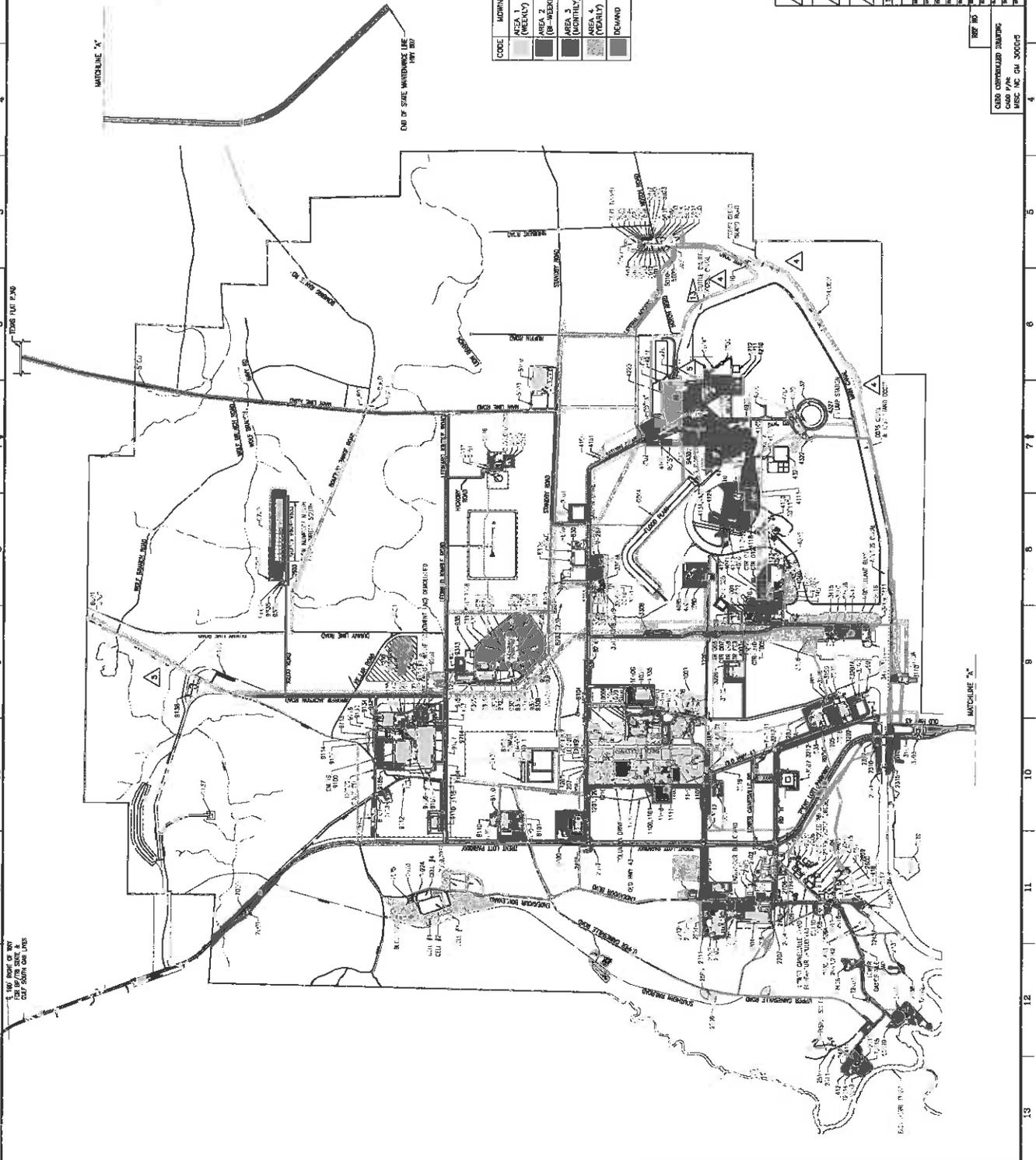
11. RAILROAD'S AREA, 93.2, 3007 APPROXIMATELY 2.7 ACRES TO BE CUT APPROXIMATELY 1.7 ACRES TO BE CUT UNDER "DEMAND" BUDGET APPROXIMATELY 51.7 ACRES.

12. MAINTENANCE ROAD CUT NORTH TO TEXAS FLAT ROAD.

13. HWY 807 AT SOUTH GATE TO J. J. MOORE SOUTH TO MISSISSIPPI STATE UNIVERSITY LINE. APPROXIMATELY 1/4 MI FROM WARDEN'S LINE TO INTERSECT HWY 807.

14. 135' TO CONCRETE AREAS FOR UNDERGROUND UTILITY LOCATIONS ON SIDE OF WEST SIDE OF CANAL EXACT LOCATIONS SHOWN AND INCORPORATED INTO DRAINING ENHANCEMENT C-301.

EXISTING ULTRAVIOLET LIGHT ROOMS (FORMER OF WARD) MUST BE MAINTAINED AND MAINTENANCE CYCLES FOR UNDERGROUND UTILITY LOCATIONS MUST BE MAINTAINED UNDER "DEMAND" BUDGET APPROXIMATELY 51.7 ACRES. OTHER UTILITY LOCATIONS SHALL BE MAINTAINED.



1. 1/4 MI SOUTH OF HWY 807 TO THE SOUTH SIDE OF THE SOUTH SIDE LANE

END OF STATE MAINTENANCE LINE HWY 807

MATCHLINE "X"

MATCHLINE "Y"

DATE: 10/15/2010  
 DRAWN BY: J. J. MOORE  
 CHECKED BY: J. J. MOORE  
 PROJECT: MAINTENANCE PLAN  
 SHEET NO. 2 (Amendment 2)  
 TOTAL SHEETS: 5

SCALE: 1" = 100'

PROJECT: MAINTENANCE PLAN

DATE: 10/15/2010

DRAWN BY: J. J. MOORE

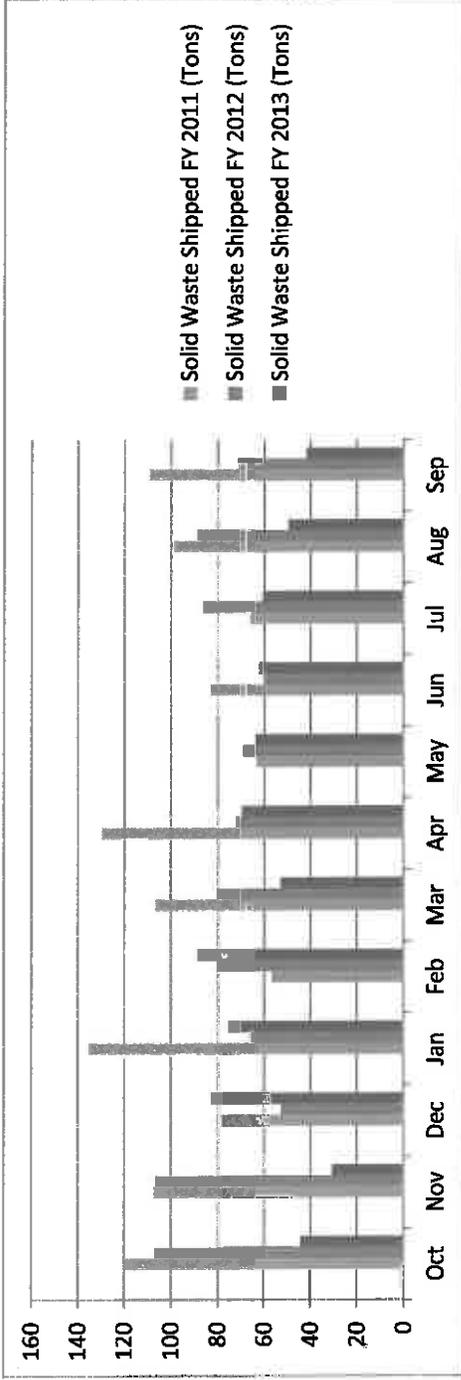
CHECKED BY: J. J. MOORE

PROJECT: MAINTENANCE PLAN

SHEET NO. 2 (Amendment 2)

TOTAL SHEETS: 5

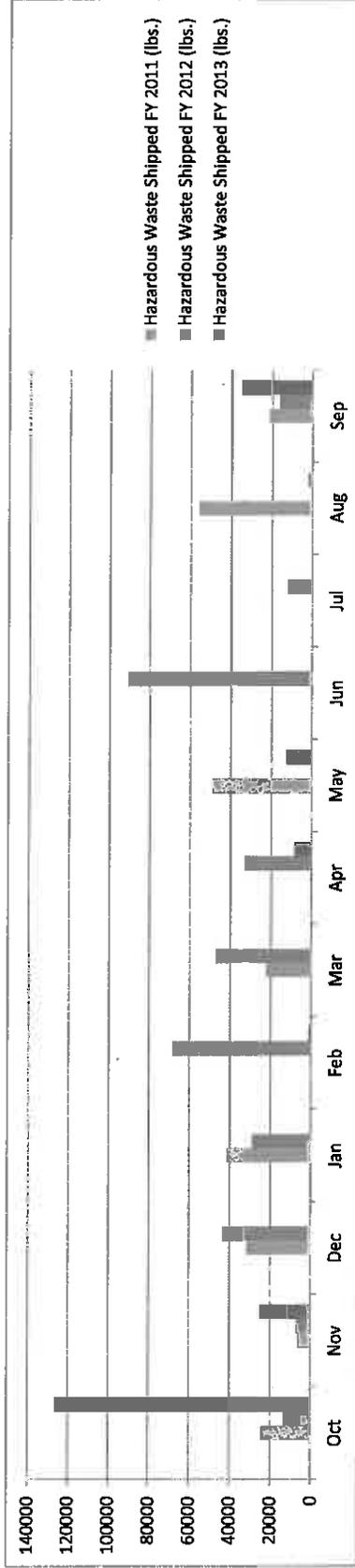
# MAF Industrial Solid Waste



	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Solid Waste Shipped FY 2013 (Tons)	44.2	30.7	83.0	75.5	88.9	52.9	69.5	63.7	62.3	60.6	49.5	41.8	723
Solid Waste Shipped FY 2012 (Tons)	107.2	106.7	52.8	66.6	80.6	80.7	72.4	68.9	59.2	86.5	88.8	71.5	942
Solid Waste Shipped FY 2011 (Tons)	119.7	107.3	78.5	135.3	56.7	106.7	129.8	63.2	83.2	66.1	98.8	109.5	1,155

(Amendment 2)

# MAF Hazardous Waste



	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Hazardous Waste Shipped FY 2011 (lbs.)	126,068	25,178	0	0	1,045	0	8,203	12,185	0	0	1,797	34,823	209,299
Hazardous Waste Shipped FY 2012 (lbs.)	12,960	6,880	43,208	29,065	68,000	46,980	32,795	0	90,466	11,969	0	16,355	358,678
Hazardous Waste Shipped FY 2011 (lbs.)	23,880	6,160	31,712	41,184	0	22,360	0	48,637	0	0	55,919	21,357	251,209

## MAF REFUSE CONTAINERS

### **Open Tops**

Location	ID Number / Description	Type
Coast Guard Industrial Bldg.	J-06	30 yd
103 Apron	J-01	30 yd
159	J-50	30 yd
203 (beside bldg)	J-46	30 yd
203 - Parking Lot D	J-21	30 yd
203 - Parking Lot D	J-30	30 yd
203 - Parking Lot D	J-41	30 yd
203 - Parking Lot D	J-49	30 yd
207 South	J-40	30 yd
207 South	J-34	30 yd
220 Southwest	J-37	30 yd
318 Apron	J-45	30 yd
409 Yard	J-42	30 yd
350 East Side	P-11	30 yd
301 Northeast Side	J-07	30 yd
409 Yard - Recyclables		30 yd
105 Lot - Recyclables		30 yd
USCG Office Bldg		5x8 yd
MSFC Coast Guard Exchange		5x8 yd
Bldg. 103 South Dock		5x8 yd
Bldg. 102 Cafeteria		5x8 yd
Bldg. 220		5x8 yd

### **Compactors**

Location	ID Number	Type
351 Cafeteria	NA	Compactor
103 Apron	NA	Compactor
350 West	NA	Compactor
350 East	NA	Compactor
320 Dock	NA	Compactor
409 Yard (Cardboard)	Blue - Allied Waste	Compactor

Note: Approximately 100 tipping dumpsters are staged across the facility for collection of trash

## SSC REFUSE CONTAINERS

LOCATION	QUANTITY	
	DUPLICATE	BARREL
1002 N. Side	2	
1002 S. Side	2	
1002 Shredder	1	
1005	1	
1009	1	
1020	1	
1032	2	
1100 North	2	
1100 S. Wing	1	
1100 Cafeteria	2	
1103	1	
1105 North	1	
1105-1110	1	
1111	2	
1200	1	
1200-VISITOR AREA	1	10
1201	1	
1210	1	
2040	1	
2101	1	
2105	1	
2120	1	
2124 Mini Mart Exchange	1	
2201	1	
2201, 2206	1	
2204 S. Side	1	
2204 Receiving Dock	1	
2204 North Side	1	
2205	1	
2406	2	
2407	1	
2409	1	
2411	1	
2411 Large Pav	1	10
3101	1	
3200	1	
3201	1	
3202	2	
3203	2	
Trailer Park	1	
3204	1	
3219 Service Station	1	
3205	1	
3225	1	
3226	1	
3300	1	
3305	1	
3407	1	
4010	2	
E-1 Complex	1	
F-2 Complex	1	
4080	1	
4110	1	1
4120	1	1
4122	1	1
4210	1	
4220 (East Pier)	1	
4220 (West Pier)	1	
4220 (Smoke Shack)		1
4301	1	
4302	1	
4400	1	
4995	1	
7001	1	
8000	1	
8100	1	
8101	1	
8110	1	
8301	1	
8305	1	
9114 South	1	
9134 (NAVO Warehouse)	1	
9145/9167	1	
9322 (NAVO)	2	
9323 & 9324 (NCCPIs)	2	
9353 (NCCPIs)	1	
9600 (NAVO)	1	
SOFTBALL 3	1	4
SOFTBALL 4		1
A-3	1	

## SSC Refuse/Industrial Solid Waste

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Solid Waste Shipped FY 2013 (Tons)													822
Solid Waste Shipped FY 2012 (Tons)													1,086
Solid Waste Shipped FY 2011 (Tons)													819

# Design Engineering – Core Historical Data

**Note: Due to consolidation of operations, technological upgrades and the synergist nature of the combined work scope, historical data may not be relevant in today's environment.**

## Preliminary Concepts and Trade Studies

- Historical Workload Indicators at SSC correspond to a range of 15 to 20 Special Studies on a yearly basis
- Historical Workload Indicators at MAF indicate minimal Special Studies on a yearly basis

## Facility Designs – Engineering Resources

- Historical Workload Indicators at SSC correspond to approximately 10 opportunities to supply engineering resources on a yearly basis
- Historical Workload Indicators at MAF correspond to approximately 55 opportunities to supply engineering resources on a yearly basis

## Technical System Design - Mechanical

- Historical Workload Indicators at SSC correspond to a range of 15 to 18 mechanical designs on a yearly basis
- Historical Workload Indicators at MAF indicate minimal mechanical designs on a yearly basis

## Technical System Design - Electrical

- Historical Workload Indicators at SSC correspond to a range of 10 to 15 electrical designs on a yearly basis
- Historical Workload Indicators at MAF indicate minimal electrical designs on a yearly basis

## Technical System Design - Software

- Historical Workload Indicators at SSC correspond to a range of 10 to 15 software designs on a yearly basis

- Historical Workload Indicators at MAF indicate minimal software designs on a yearly basis

#### Analysis and Modeling - Analysis

- Historical Workload Indicators at SSC correspond to a range of 20 to 25 analysis tasks on a yearly basis
- Historical Workload Indicators at MAF indicate minimal analysis tasks on a yearly basis

#### Analysis and Modeling - Modeling

- Historical Workload Indicators at SSC correspond to a range of 15 to 20 modeling tasks on a yearly basis
- Historical Workload Indicators at MAF indicate minimal modeling tasks on a yearly basis

#### Drafting - Drafting Services

Note: Drafting workload is independent of drafting required to support the design-engineering task

- Historical Workload Indicators at SSC correspond to a range of 20 to 30 drafting tasks on a yearly basis
- Historical Workload Indicators at MAF indicate minimal drafting tasks on a yearly basis

#### Requirements Management

- Historical Workload Indicators at SSC correspond to 1,500 plus updates and requests on a yearly basis
- Historical Workload Indicators at MAF correspond to a range of 50 to 100 updates and requests on a yearly basis

#### Configuration Management - Data and Process Control

- Historical Workload Indicators at SSC correspond to a range of 80 to 100 updates on a yearly basis
- Historical Workload Indicators at MAF correspond to a range of 5 to 20 updates on a yearly basis

#### Configuration Management - CAD Support

Note: SACOM\_Historical\_Data\_011 located in the SACOM Technical Library contains a breakdown of historical Test Operations CAD Files

- Historical Workload Indicators at SSC correspond to a 2,000 plus updates and requests on a yearly basis
- Historical Workload Indicators at MAF indicate minimal updates and requests on a yearly basis

#### Technical Data Management - Component Data Tracking

- Historical Workload Indicators at SSC correspond to 4,000 plus updates and entries on a yearly basis
- Historical Workload Indicators at MAF indicate minimal updates on a yearly basis

#### Technical Data - Management Design and Data Management System

- Historical Workload Indicators at SSC correspond to 60,000 plus updates and entries on a yearly basis
- Historical Workload Indicators at MAF indicate minimal updates on a yearly basis