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|---|---------------------------------|--|--------------------------------|
| AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT | | 1. CONTRACT ID CODE | PAGE OF PAGES 1 7 |
| 2. AMENDMENT/MODIFICATION NO. 000001 | 3. EFFECTIVE DATE 04/25/2014 | 4. REQUISITION/PURCHASE REQ. NO. | 5. PROJECT NO. (If applicable) |
| 6. ISSUED BY NASA/John F. Kennedy Space Center Office of Procurement MAIL CODE OP KENNEDY SPACE CENTER FL 32899 | CODE KSC | 7. ADMINISTERED BY (If other than Item 6) NASA/Kennedy Space Center Office of Procurement MAIL CODE OP KENNEDY SPACE CENTER FL 32899 | CODE KSC |
| 8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) | | (x) 9A. AMENDMENT OF SOLICITATION NO. NNK14495022R | |
| | | x 9B. DATED (SEE ITEM 11) 04/08/2014 | |
| | | 10A. MODIFICATION OF CONTRACT/ORDER NO. | |
| | | 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 1 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 ACKNOWLEDGEMENT 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 you 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. |
| | 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). |
| | C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: |
| | D. OTHER (Specify type of modification and authority) |

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

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

The purpose of this amendment is to revise Section 1.5 Schedule of Supplies and Attachment 004, RFP Pricing Sheet as follows:

SECTION 1.5 SCHEDULE OF SUPPLIES

Change CLIN 020 Best Est. Yearly Qty Contract Year 1 from zero "0" to read 1,000.

Note 7. Remove the following sentence:

"This capability is required beginning with the Delta IV heavy launch currently planned to occur in contract year 3".

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9 A 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) Gloria A. McIntosh | |
| 15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign) | 15C. DATE SIGNED | 16B. UNITED STATES OF AMERICA (Signature of Contracting Officer) | 16C. DATE SIGNED |

CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED
 NNK14495022R/000001

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NAME OF OFFEROR OR CONTRACTOR

| ITEM NO. (A) | SUPPLIES/SERVICES (B) | QUANTITY (C) | UNIT (D) | UNIT PRICE (E) | AMOUNT (F) |
|-----------------|---|-----------------|-------------|-------------------|---------------|
| | <p>Attachment 004, RFP PRICING SHEET</p> <p>For CLIN 002: Remove the HOT TANK FILL requirement in its entirety.</p> <p>For CLIN 007: Change from:</p> <p>Best Estimated Yearly Quantity: Year 1 , 17,000; Year 2, 27,000; Year 3, 17,000; Year 4, 13,000, Year 5, 13,000 Tons</p> <p>TO:</p> <p>Best Estimated Yearly Quantity: Year 1, 27,000; Year 2, 17,000; Year 3, 17,000; Year 4, 13,000; Year 5, 13,000 Tons.</p> <p>For CLIN 020 Change from:</p> <p>Best Estimated Yearly Quantity: Year 3 and 5 only, 13,000 Tons each year</p> <p>TO:</p> <p>Best Estimated Yearly Quantity: Year 1 - 1,000 Tons, Year 3 and 5 - 1,300 Tons each year.</p> <p>Replacement pages are attached. See Block 11 for methods of acknowledging receipt of this amendment.</p> | | | | |

REFERENCE NO. OF DOCUMENT BEING CONTINUED: NNNK14495022R, AMENDMENT 001
 NAME OF OFFEROR OR CONTRACTOR:

| CLIN | LOCATION/DESCRIPTION | OXYGEN SPECIFICATION | UNIT | ORDER LIMITATIONS | | | | BEST EST. YEARLY QTY Contract Year 1 | BEST EST. YEARLY QTY Contract Year 2 | BEST EST. YEARLY QTY Contract Year 3 | BEST EST. YEARLY QTY Contract Year 4 | BEST EST. YEARLY QTY Contract Year 5 |
|------|---------------------------------------|---|--------|-------------------|-----------|----------|-----------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| | | | | MINIMUM | MAX DAILY | MAX WKLY | MAX MTHLY | | | | | |
| 016 | GRC | MIL-PRF-25508H Type II Grade A | Ton | 5 | 40 | 60 | N/A | 120 | 120 | 120 | 120 | 120 |
| 017 | JSC | MIL-PRF-27210I Type II | Gallon | 450 | 4,500 | N/A | N/A | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| 018 | KSC/CCAFS | MIL-PRF-25508H Type II Grade A | Ton | 20 | 70 | 130 | N/A | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| 019 | KSC/CCAFS (see note 6) | MIL-PRF-25508H Type II Grade A | Ton | 100 | 264 | 1,056 | 1,056 | 6,000 | 6,000 | 6,000 | 6,000 | 6,000 |
| 020 | KSC/CCAFS Delta IV Heavy (see note 7) | MIL-PRF-25508H Type II Grade A | Ton | 200 | 440 | 1,300 | 1,300 | 1000 | 0 | 1,300 | 0 | 1,300 |
| 021 | KSC/CCAFS SLS (see note 8) | MIL-PRF-25508H Type II modified Grade A | Ton | 20 | 210 | 420 | 1,680 | 0 | 6,000 | 2,000 | 3,800 | 2,000 |
| | | | | | | | | | | | | |
| 022 | LARC | MIL-PRF-25508H Type II Grade A | Gallon | 4,000 | 9,000 | 10,000 | 35,000 | 330,000 | 330,000 | 330,000 | 330,000 | 330,000 |
| 023 | MSFC | MIL-PRF-25508H Type II Grade A | Ton | 20 | 80 | 400 | 800 | 3,500 | 3,500 | 3,500 | 3,500 | 3,500 |
| 024 | SSC (see note 9) | MIL-PRF-25508H Type II Grade A | Ton | 20 | 240 | 1,440 | 4,000 | 12,000 | 12,000 | 12,000 | 3,000 | 7,500 |
| 025 | ½ SSC (see note 9) | MIL-PRF-25508H Type II Grade A | Ton | 20 | 120 | 720 | 2,000 | 6,000 | 6,000 | 6,000 | 1,500 | 3,750 |

REFERENCE NO. OF DOCUMENT BEING CONTINUED: NNK14495022R, AMENDMENT 001

NAME OF OFFEROR OR CONTRACTOR:

Note 1: During GRC high use testing periods contractor shall be able to supply the maximum daily order quantity for 14 continuous days. Extended testing periods may require deliveries for 60 continuous days. The Contractor will be notified at least 30 days in advance of the planned high use testing period.

Note 2: During JPL high use testing periods, which occur approximately once every calendar year, contractor shall be able to supply the maximum daily order quantity for 30 continuous days. The Contractor will be notified at least 90 days in advance of the planned high use testing period.

Note 3: During JSC high use testing periods, which occur approximately once every calendar year, contractor shall be able to supply the maximum daily order quantity for up to 100 continuous days. The Contractor will be notified at least 30 days in advance of the planned high use testing period.

Note 4: Modified Grade C liquid nitrogen. Please refer to Attachment 001 (JSC SOW) for more information.

Note 5: Nitrogen to SSC (CLIN 014 and 015): CLIN 014 represents the total nitrogen requirement to SSC. CLIN 015 represents half of the total nitrogen requirement to SSC. The contractor shall either serve as the single supplier for CLIN 014 (total nitrogen requirement to SSC); OR serve as one of two sources of supply for CLIN 015 (half of total nitrogen requirement to SSC). The option utilized shall be determined by the lowest total evaluated cost to the Government. An offeror submitting an offer for CLIN 014 MUST also submit an offer for CLIN 015. AN OFFEROR MAY SUBMIT AN OFFER FOR CLIN 015 WITHOUT PROVIDING AN OFFER FOR CLIN 014.

Note 6: Requirement is for up to 10 tankers at one time and up to 12 tankers (two waves of 6) in one day. Delivery requests for CLINs 018-021 when combined, will not exceed the daily or weekly or monthly max of the individual CLIN with the highest maximum. In other words, the maximums for the KSC/CCAFS CLINs shall not be added to one another in such a way as to exceed the single highest maximum.

Note 7: Delta IV heavy support begins with the completion of the practice launch countdown (wet dress rehearsal) milestone and ends upon launch. Delta IV heavy requires contingency capability for 4 launch attempts in 6 days. The CLIN represents the worst case scenario, further described as follows:

Day 1 – 20 tankers (10 tankers at one time and another 10 tankers within an 6 hour period)

Day 2 – OFF

Day 3 – 20 tankers (10 tankers at one time and another 10 tankers within an 6 hour period)

Day 4 – OFF

Day 5 – 20 tankers (10 tankers at one time and another 10 tankers within an 6 hour period)

Delivery requests for CLINs 018-021 when combined, will not exceed the daily or weekly or monthly max of the individual CLIN with the highest maximum. In other words, the maximums for the KSC/CCAFS CLINs shall not be added to one another in such a way as to exceed the single highest maximum.

Note 8: Space Launch Systems (SLS) Modified Grade A liquid oxygen (99.85% purity). SLS support requires up to 5 tankers at one time, up to two waves of 5 tankers in one day, two times per week. During SLS Launch which is planned to occur in 2018 (Contract Year 4) contractor shall be able to supply 5 tankers at one time, two waves of 5 tankers in one day, three times per week. Contractor will be notified at least 30 days in advance of SLS Launch. Please refer to Attachment 001 for more information. Delivery requests for CLINs 018-021 when combined, will not exceed the daily or weekly or monthly max of the individual CLIN with the highest maximum. In other words, the maximums for the KSC/CCAFS CLINs shall not be added to one another in such a way as to exceed the single highest maximum.

Note 9: Oxygen to SSC (CLIN 024 and 025): CLIN 024 represents the total oxygen requirement to SSC. CLIN 025

NOTE: THE REFERENCE BASE PERIOD FOR CALCULATION OF ECONOMIC PRICE ADJUSTMENTS FOR SUBSEQUENT CONTRACT PERIODS IS APRIL 1, 2013, THROUGH MARCH 31, 2014. (Reference Section 1.7)

CLIN 001 Specification: CGA G-10.1 2008 edition
 CLIN 001 Best Estimated Yearly Quantity 155,000 Liter

| CLIN | DL | DESCRIPTION | UNIT | PERIOD 1 | YEAR 1 | YEAR 2 | YEAR 3 | YEAR 4 | YEAR 5 |
|------|-----|--|----------------------|----------|--------|--------|--------|--------|--------|
| 001 | ARC | Period 1 Price | Price Per liter | | | | | | |
| 001 | ARC | Demurrage | Price Per ¼ Hr | | | | | | |
| 001 | ARC | Inability to Accept Delivery Charge (\$/Mile) | Price Per Mile | | | | | | |
| 001 | ARC | Emergency Delivery (less than 48 hours notice) | Price Per Occurrence | | | | | | |
| 001 | ARC | Hot Tank Fill | Price Per Occurrence | | | | | | |
| 001 | ARC | Discount Terms | Not Applicable | | | | | | |

CLIN 002 (Dewars) Specification: CGA G-10.1 2008 edition
 CLIN 002 Best Estimated Yearly Quantity: 35,000 Liter

| CLIN | DL | DESCRIPTION | UNIT | PERIOD 1 | YEAR 1 | YEAR 2 | YEAR 3 | YEAR 4 | YEAR 5 |
|------|-----|---|-----------------|----------|--------|--------|--------|--------|--------|
| 002 | ARC | Period 1 Price | Price Per liter | | | | | | |
| 002 | ARC | Demurrage | Price Per ¼ Hr | | | | | | |
| 002 | ARC | Inability to Accept Delivery Charge (\$/Mile) | Price Per Mile | | | | | | |
| 002 | ARC | Discount Terms | Not Applicable | | | | | | |

CLIN 003 Specification: CGA G-10.1 2008 edition
 CLIN 003 Best Estimated Yearly Quantity: 6,000 Tons

| CLIN | DL | DESCRIPTION | UNIT | PERIOD 1 | YEAR 1 | YEAR 2 | YEAR 3 | YEAR 4 | YEAR 5 |
|------|-----|--|----------------------|----------|--------|--------|--------|--------|--------|
| 003 | GRC | Period 1 Price | Price Per Ton | | | | | | |
| 003 | GRC | Demurrage | Price Per ¼ Hr | | | | | | |
| 003 | GRC | Inability to Accept Delivery Charge (\$/Mile) | Price Per Mile | | | | | | |
| 003 | GRC | Emergency Delivery (less than 48 hours notice) | Price Per Occurrence | | | | | | |
| 003 | GRC | Hot Tank Fill | Price per Occurrence | | | | | | |
| 003 | GRC | Discount Terms | Not Applicable | | | | | | |

REFERENCE NO. OF DOCUMENT BEING CONTINUED: NNK14495022R, ATTACHMENT 004, AMENDMENT 001
 NAME OF OFFEROR OR CONTRACTOR:

CLIN 007 Specification: MIL-PRF-27401G

CLIN 007 Best Estimated Yearly Quantity: Year 1 – 27,000; Year 2 – 17,000; Year 3 – 17,000; Year 4 – 13,000, Year 5 – 13,000 Tons

| CLIN | DL | DESCRIPTION | UNIT | PERIOD 1 | YEAR 1 | YEAR 2 | YEAR 3 | YEAR 4 | YEAR 5 |
|------|-----|--|----------------------|----------|--------|--------|--------|--------|--------|
| 007 | JSC | Period 1 Price | Price Per Ton | | | | | | |
| 007 | JSC | Demurrage | Price Per ¼ Hr | | | | | | |
| 007 | JSC | Inability to Accept Delivery Charge (\$/Mile) | Price Per Mile | | | | | | |
| 007 | JSC | Emergency Delivery (less than 48 hours notice) | Price Per Occurrence | | | | | | |
| 007 | JSC | Hot Tank Fill | Price per Occurrence | | | | | | |
| 007 | JSC | Discount Terms | Not Applicable | | | | | | |

CLIN 008 Specification: Specification: MIL-PRF-27401 (Rev. G) dated August 7, 2013, entitled, Propellant Pressurizing Agent, Nitrogen (Type II Modified Grade C)

CLIN 008 Best Estimated Yearly Quantity: 1,000 Tons

| CLIN | DL | DESCRIPTION | UNIT | PERIOD 1 | YEAR 1 | YEAR 2 | YEAR 3 | YEAR 4 | YEAR 5 |
|------|-----|--|----------------------|----------|--------|--------|--------|--------|--------|
| 008 | JSC | Period 1 Price | Price Per Ton | | | | | | |
| 008 | JSC | Demurrage | Price Per ¼ Hr | | | | | | |
| 008 | JSC | Inability to Accept Delivery Charge (\$/Mile) | Price Per Mile | | | | | | |
| 008 | JSC | Emergency Delivery (less than 48 hours notice) | Price Per Occurrence | | | | | | |
| 008 | JSC | Hot Tank Fill | Price per Occurrence | | | | | | |
| 008 | JSC | Discount Terms | Not Applicable | | | | | | |

CLIN 009 Specification: MIL-PRF-27401G

CLIN 009 Best Estimated Yearly Quantity: 2,000 Tons

| CLIN | DL | DESCRIPTION | UNIT | PERIOD 1 | YEAR 1 | YEAR 2 | YEAR 3 | YEAR 4 | YEAR 5 |
|------|-------------|--|----------------------|----------|--------|--------|--------|--------|--------|
| 009 | KSC / CCAFS | Period 1 Price | Price Per Ton | | | | | | |
| 009 | KSC / CCAFS | Demurrage | Price Per ¼ Hr | | | | | | |
| 009 | KSC / CCAFS | Inability to Accept Delivery Charge (\$/Mile) | Price Per Mile | | | | | | |
| 009 | KSC / CCAFS | Emergency Delivery (less than 48 hours notice) | Price Per Occurrence | | | | | | |
| 009 | KSC / CCAFS | Hot Tank Fill | Price per Occurrence | | | | | | |
| 009 | KSC / CCAFS | Discount Terms | Not Applicable | | | | | | |

CLIN 019 Specification: MIL-PRF-25508H

CLIN 019 Best Estimated Yearly Quantity: 6,000 Tons

| CLIN | DL | DESCRIPTION | UNIT | PERIOD 1 | YEAR 1 | YEAR 2 | YEAR 3 | YEAR 4 | YEAR 5 |
|------|-------------|--|----------------------|----------|--------|--------|--------|--------|--------|
| 019 | KSC / CCAFS | Period 1 Price | Price Per Ton | | | | | | |
| 019 | KSC / CCAFS | Demurrage | Price Per ¼ Hr | | | | | | |
| 019 | KSC / CCAFS | Inability to Accept Delivery Charge (\$/Mile) | Price Per Mile | | | | | | |
| 019 | KSC / CCAFS | Emergency Delivery (less than 48 hours notice) | Price Per Occurrence | | | | | | |
| 019 | KSC / CCAFS | Hot Tank Fill | Price per Occurrence | | | | | | |
| 019 | KSC / CCAFS | Delayed Delivery | Cost Per Tanker | | | | | | |
| 019 | KSC / CCAFS | Discount Terms | Not Applicable | | | | | | |

CLIN 020 Specification: MIL-PRF-25508H

CLIN 020 Best Estimated Yearly Quantity: Year 1 -1,000 Tons, Year 3 and 5 only – 1,300 Tons each year

| CLIN | DL | DESCRIPTION | UNIT | PERIOD 1 | YEAR 1 | YEAR 2 | YEAR 3 | YEAR 4 | YEAR 5 |
|------|-------------|--|----------------------|----------|--------|--------|--------|--------|--------|
| 020 | KSC / CCAFS | Period 1 Price | Price Per Ton | | | | | | |
| 020 | KSC / CCAFS | Demurrage | Price Per ¼ Hr | | | | | | |
| 020 | KSC / CCAFS | Inability to Accept Delivery Charge (\$/Mile) | Price Per Mile | | | | | | |
| 020 | KSC / CCAFS | Emergency Delivery (less than 48 hours notice) | Price Per Occurrence | | | | | | |
| 020 | KSC / CCAFS | Hot Tank Fill | Price per Occurrence | | | | | | |
| 020 | KSC / CCAFS | Delayed Delivery | Cost Per Tanker | | | | | | |
| 020 | KSC / CCAFS | Discount Terms | Not Applicable | | | | | | |