

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE	PAGE OF PAGES 1 10
2. AMENDMENT/MODIFICATION NO. 02	3. EFFECTIVE DATE 01/29/2013	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. NNK12458702R	
		x 9B. DATED (SEE ITEM 11) 12/20/2012	
		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 date and time for receipt of offers is changed from February 5, 2013 to February 14, 2013, 3:00 p.m. EST per this amendment 02.

See attached

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) Jan Pirkle	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA  (Signature of Contracting Officer)	16C. DATE SIGNED 1/29/13

1. Instructions to offeror states - "Provide resumes of technician support personnel.

Do you want resumes for both the primary and backup SCAPE teams? Additionally, do we need to submit resumes of valet SCAPE support technicians? Please provide clarification. **Yes, resumes for all SCAPE personnel. The intent of Part 1, Section 1, fourth bullet is to have the offeror describe the experience level of their technician support personnel may include, at a minimum, a table of previous SCAPE (or equivalent Propellant Handlers Ensemble -PHE) operations hours handling any hypergolic or toxic commodity, for each technician that will be performing the operations. Resumes are not required for technical support personnel not donning SCAPE or equivalent suits.**

2. Instructions to offer – Part 1 Technical

Providing a detailed response to the five items identified for the technical proposal within the 15 page limit may be difficult to accomplish and even more difficult to evaluate. Would NASA consider one or both of the following options?

(a) Exclude resumes from the page count- **Resumes will be included in the page count. Resumes for all SCAPE (or equivalent PHE) personnel may be presented in a table format that shall include at a minimum, technician names and previous SCAPE (or equivalent PHE) operations hours for each technician that will be performing the SCAPE (or equivalent PHE) operation. The government will consider the number of nitrogen tetroxide related operation hours as a discriminator.**

(b) Acceptance of a government approved PSM program as an attachment to the technical volume exclusive of the page count. **A government approved PSM program description may be included in the increased technical Proposal Section page limit of 25 pages (previously 15 pages). See changes to RFP stated below**

3. Instructions to offeror - Part 3 Past Performance.

What are the limitations for acceptable relevant present and past performance qualifications (i.e. present and past oxidizer SCAPE operations performed within the last 3 years)? **The offeror may provide any relevant performance that meets the 52.212-2 Evaluation - Commercial Items, Part 3 Past Performance criteria and Section 5 (a) page limit guidelines.**

4. NTO Flow Test SOW Test Management item 9 (disposition of waste).

If the proposed test location was at KSC, would it be acceptable once generated waste has been identified, consolidated, and properly labeled to turn the waste containers over to the NASA KSC waste contractor? **Yes. The costs for these efforts would be at the expense of the offeror. See SOW, page 4, section 9.**

5. NTO Flow Test SOW Test Execution item 6 (sufficient personnel).

Does the requirement mean full SCAPE support for a typical day shift 8 hours each test day or 24/7 SCAPE support? Please clarify **SCAPE (or equivalent) support referenced in Test Execution item #6 and as listed in Appendix 2 requires continuous support during hazardous testing operations for each hazardous test. Shift durations are determined by the offeror. See SOW, page 5, section 6.**

6. NTO Flow Test SOW - II Options (3.4 Calibration).

We assume this section is referring to a field calibration to be performed on site just prior to flow testing. If so, will the NIST class F weights be provided by the government or the contractor? **The offeror will provide the NIST weights as part of their cost estimation for this option. See SOW, page 6, section 3.4.1.**

7. NTO Flow Test SOW – V. Government Furnished Data/Equipment/Services.

- a) Will the flex hoses identified in the appendix 3 notional test layout diagram be provided by the government or the contractor? **Provided by the government. See SOW, page 8, section V and table in Amendment 01 issued 1/22/13.**
- b) Will the cylinder bypass assemblies required to perform leak test and purge of the test setup be provided by the government or the contractor? **Provided by the government. See SOW, page 8, section V and table in Amendment 01 issued 1/22/13.**
- c) What is the MIL-SPEC grade level requirement for the contractor provided GHe and GN2 source? **GHe is MIL-PRF-27407, Type I, Grade A. The GN2 is MIL-PRF-27401, Type I, Grade A. See SOW, page 5, section 3.7.3.**
- d) Will the government stipulate any filtration requirements for the pressurant gases? **Yes, 10 micron or better filter for GHe, 25 micron or better for GN2 for purge enclosures, 10 microns or better into test assembly (if used for decontamination of system). See SOW, page 5, section 3.7.3.**
- e) Are we correct in assuming the “to vent” line identified on the appendix 3 notional test layout diagram is meant to be a contractor provided oxidizer scrubber system? **Yes, as part of the offerors sited and permitted facility. Some means of approved / permitted venting system (may be scrubber or could be cat bed device, etc) by contractor at their approved facility is required. See SOW, page 11, Appendix 3.**
- f) Verify water heat exchanger for conditioning of NTO supply fluid to 40 +/- 5 C is correct. Concern that boiling point of MON-3 NTO at ambient pressure is approximately 18 C. **The NTO will either be under pressure or in a closed system, therefore, boiling or creation of NO2 vapors is no impact as the vapors will change back to N2O4 when pressurized. See SOW, page 8, section 8.**

8. Appendix 1 Detailed Test Schedule is not legible or is incomplete. Please provide

clearly defined schedule.

A legible copy of the NTO Test SOW Milestones (previously referred to as Detailed Test Schedule) is attached to this amendment. Weeks and days are depicted (W1/2 = Week 1, day 2)

9. Is there a planned or potential follow-on for this NTO flow test work? **No further government funded effort specific to this scope is planned, with the exception of options as specified in SOW.**
10. Is there a schematic of the set-up? The Appendix 3 - NOTIONAL TEST LAYOUT DIAGRAM is not providing enough detail/resolution for determining the operational configuration of the test set-up. **Schematic will be provided upon award.**
11. The Appendix 3 – NOTIONAL TEST LAYOUT DIAGRAM – Shows two cylinders required on one scale and not the other. Why are two cylinders required when the volume of material will fit in one cylinder? **This is to simulate a gas volume. The GFE scales have two different ranges, therefore, one scale was not able to hold both cylinders. If the option is exercised to have the vendor provide the scales, then we would consider having all the cylinders on scales. See SOW, page 8, Section V Government Furnished Data/Equipment/Services.**
9. Please provide the dimensional envelope (Length, Height, and Width) and weight (lbm) of the test article and/or the skid/table? **Tables are about 4' x 8' each with a metal panel surface. The weight of the components will require either a forklift, pallet jack or hand lift. See SOW, page 8, Section V Government Furnished Data/Equipment/Services.**
10. Is there a detailed drawing showing the location and configuration of the test article interfaces? **Will be provided upon award. SOW lists general interfaces.**
11. Does the test article have an intent to chemically alter, shed material, or produce exo/endothemic responses in the NTO? **No**
12. Is the bulk NTO material, flowed through the test article, considered waste at the end of the flow testing program? **No. All normal operations / test flow through specification grade commodity recovered liquid is returned to NASA. Any inadvertent contaminated commodity generated by service provider accidental conditions / operations is the responsibility of the contractor / service provider. The contractor will not be charged for N2O4 that is lost during nominal venting operations through the scrubber, cat bed, or equivalent system. See SOW page 4, Test Management, item # 9.**
13. If Part 1 (particulate sampling) is not a requirement then please explain why or how ISO 14644 Part 2 (periodic testing of a cleanroom) & Part 3 (test methods for measurement and evaluation) - standard for Airborne Particulate Cleanliness Classes in Clean rooms and Clean Zones are applicable for this test program? **Test Execution section 2.1 changed to read:**

“The test facility shall be an indoor enclosed area that protects from wind, rain, and temperature from 75F +/-10. No airborne/surface particle or humidity monitoring is required. See SOW, page 4, Test Execution Item #21.

14. Is there a “desirement” to flow NTO in one direction or two directions through the EDU? **The SOW Task Description states “Multiple runs of flow in both directions will be executed.”**
15. The option for 3 calibrated scales only really appears to require 2 calibrated scales; is this true? Also, are these scales deliverable items to NASA under this option? **Requirements for 3 scales and associated use are covered in 3.1.1, 3.1.2, and 3.1.3. 3 calibrated scales are required. 2 for test and 1 for liquid separator tank. They are not required to be handed over to the government upon test completion unless the cost of purchase is included in the option. See SOW, page 6 Section II Options.**
16. What is the preferred interface for the scale data (RS232 or RS422/485)? Is scale-to-DAS interface required for all three scales? Or only the Supply and Receiver Scales? **This interface is GFE per SOW Section V, item #6. RS232 is preferred .**
17. Are the Supply and Receiving Scale weights required as simultaneous measurements during the test? **No, only for pre- and post-test calibration.**
18. Once test setup is completed are there expectations to move scales, cylinders, or disconnect/reinstall flex hoses? **No, not until the test is completed.**
19. Assume all DOT 4BW are forklift compatible or would slings, etc. be required for lifting? **Yes, they are forklift compatible. Reference website in SOW: <http://propellants.ksc.nasa.gov/cylinders.htm>, for DOT 4BW information.**
20. What drives the requirement for 20Torr post-test? If there are existing facility operations supporting post-test aspiration, disassembly, and decon that would meet your decon and shipping requirements is that acceptable? **SOW allows for alternative means of accomplishing the test if the requirements as written cannot be met. The pump option requested will be used only one time upfront on a “clean” system per SOW (system not yet exposed to any form of hypergol contamination) for this low end requirement. NASA would consider alternative levels using aspiration methods for the decontamination operations. Note that the vacuum level is to simulate a “clean” system that has been open to the vacuum of space then isolated and filled with propellant. The vacuum level for post-test decontamination can be to a higher level, but is not required per the SOW if the contractor has other means of decontaminating the system.**
21. Does vacuum pump/s have pump speed displacement requirement? **No**

22. What is the temperature requirement range for the NTO entering the EDU? **Ref SOW Appendix 2 -Propellant temperature is maintained remotely at 40 deg C +/- 5 deg C by government personnel via the GFE water bath heat exchanger.**
23. GFE Test Assembly to include all hardware; DOT4BW valves, flex hoses, spares, etc. Is hardware delivered precision cleaned? **Yes –all items that will be wetted with NTO.** And hardware is expected returned to KSC precision cleaned? **No, page 8 Note does not refer to cleanliness but condition. Precision cleaning of returned hardware is not required by SOW, decontamination of returned hardware is required by SOW.** What items, if any would be considered waste post-test? **See response to question 7 above. Additional waste items include any Teflon softgoods (o-rings) that are removed during decontamination. All softgoods are not required to be removed, but some may become dislodged during disassembly (if performed).**
24. Would other existing in-place flow measurement approaches be considered beneficial; if available? **Not required and not of benefit.**
25. Does GFE Water Bath Heat Exchanger require any facility interfaces or is this entire “package” delivered, maintained and operated by government personnel? **Power requirements of 220VAC@50AMPs and interface mating connector of L1, L2, COM, GND. See SOW, page 5 Test Execution Item #3.7.2.**
26. Would other existing in-place temperature conditioning systems be beneficial to offset the need for the GFE heat exchanger? **Alternatives would be considered if capable to maintain commodity remotely at 40 deg C +/- 5 deg C.**
27. Would an alternate test set-up leveraging existing operational NTO management systems be considered for this Flow Test? **Yes with respect to NTO management systems. The SOW allows for “equivalent systems may be acceptable as determined by the government”**
28. Please provide additional detail on the requirement and use of the 220 VAC 50 Amp service circuit. Is this a 1 or 3 phase circuit and what type of equipment will it be powering? **The Heat Exchanger requires 220VAC@50AMPs, 1 HP pump and 5.5kW heater. Connector L1,L2,COM,GND. See answer 28 above. See SOW, page 5 Test Execution Item #3.7.2.**
29. What date approximately would negotiations take place? **The due date for receipt of offers has been extended by this Amendment 02. The new date for receipt of responses is 2/14/13. Negotiations are not anticipated as this RFP will be awarded under Lowest Price Technically Acceptable procedures.**
30. What date is the ATP expected to take place? **Mid March to early April, with test start mid May to mid June. See replacement page 9 attached.**

2. The RFP NNK12458702 is modified as follows:

- o Page 11, Delivery and/or Completion Schedule – the Table “Base Effort” is modified to read: “NLT 22 weeks after Contract Award.”
- o Page 11, the following clause is added:

Deliverable/Milestone Payment Plan

- a. The contractor shall provide a cost estimate for each segment of work as listed below
 - i. NTP thru NTO Test Procedure Delivery (CDRL3) and Procedure Review / Approval/ Delivery thru the Pretest Briefing (CDRL 5)
 - ii. After the Pretest Briefing thru NTO Testing
 - iii. After NTO Testing thru Prep for Shipment (contains decontamination), After Prep for Shipment thru all Data Submittals (CDRL 7 thru CDRL 11) and after Data Submittals thru Post Test Briefing (CDRL 12)”
 - iv. OPTIONS as listed
- b. The government will release payment to the contractor per a 3 phase payment schedule based on completion of the deliverables/milestones listed above. The reason for asking for this data is if for some reason our system test fail in Freon system level test at KSC then it would not make sense to go beyond the parallel effort started with risk of procedure development and test setup preps and would give us a basis for remaining cost in any negotiation if we needed to terminate early. It will also give us a basis to assign payment schedule amounts and it would be a good cost consideration tool to see if they understand the work correctly when evaluating the bids.
- o Page 19, Section 5 – Addendum. Clause 1852.215-81 Proposal Page limitations is modified to allow 25 pages for technical proposal.

3. The Statement of Work is modified to add the following information:

- o The following information is changed in the SOW: page 3, Period of Performance Estimated NTE Completion Date is changed is from : 5/9/13 (11 weeks) to: 8/21/13 (22 weeks not including options).
- o The following information is added to page 4, Test Management, item # 9: All normal operations / test flow through specification grade commodity recovered liquid is returned to NASA. Any inadvertent contaminated commodity generated by service provider accidental conditions / operations is the responsibility of the contractor / service provider. The contractor will not be charged for N2O4 that is lost during nominal venting operations through the scrubber, cat bed, or equivalent system.

- The following information is added to page 4, Test Execution section 2.1: “The test facility shall be an indoor enclosed area that protects from wind, rain, and temperature from 75F +/-10. No airborne/surface particle or humidity monitoring is required.”
- The following information is added to page 4, Test Execution section 3.7: Alternatives would be considered if capable to maintain commodity remotely at 40 deg C +/- 5 deg C.
- The following information is added to page 4, Test Execution section: GFE N204 DOT approved cylinders will be shipped for receipt by contractor within 2 to 4 weeks of ATP. Upon receipt from the government at the test site, the contractor shall position the units in an area meeting the facility requirements in SOW Test Execution 2.1, for the eventual test and shall pressurize the GFE DOT rated 500 psig MAWP NTO cylinders to 300 to 400 psig using GHe meeting MIL-PRF-27407, Type I, Grade A using a contractor provided regulation panel. This established ullage pressure shall be monitored and recorded at a minimum of two times per week to ensure no pressure drops below 20 psig from original recorded level, and shall be retained until the cylinders are used for the NTO Flow Test. Ullage pressure data recordings shall be provided to the government prior to the start of testing.
- The following information is added to page 5, Test Execution item # 3.7.2: The Heat Exchanger requires 220VAC@50AMPs, 1 HP pump and 5.5kW heater. Connector L1,L2,COM,GND.
- The following is added to page 5, section 3.7.3: GHe is MIL-PRF-27407, Type I, Grade The GN2 is MIL-PRF-27401, Type I, Grade A.
- The following information is added to page 5, section 3.7.3: 10 micron or better filter for GHe, 25 micron or better for GN2 for purge enclosures, 10 microns or better into test assembly (if used for decontamination of system).
- The following information is added to page 5, Test Execution item # 3.7.2: Power requirements of 220VAC@50AMPs and interface mating connector of L1, L2, COM, GND.
- The following information is added to page 5, Test Execution item 10: Within the 10 days of NTO Testing, the government shall not be charged an additional fee for a delay in the schedule of 1 week or less due to “Acts of God” (to include but

not limited to inclement weather and atmospheric conditions that prevent venting, or power loss to facility from main service provider, etc) that are beyond the control or responsibility of the government or the contractor. Hardware and services failures that are within the control or responsibility of the contractor (and the contractor's subcontractors), such as their facility system or test equipment / supply failures that result in procedural delays will be not be billable to the government and contractor shall extend open window of testing at their facility to complete contractual hypergol test durations .

- The following information is added to page 6 Section II. Options: Requirements for 3 scales and associated use are covered in 3.1.1, 3.1.2, and 3.1.3. 3 calibrated scales are required. 2 for test and 1 for liquid separator tank. They are not required to be handed over to the government upon test completion unless the cost of purchase is included in the option.
- The following information is added to page 6, section II Options, item 1: Within any of the Option 1 periods (1 week, 2 weeks or 3 weeks), the government shall not be charged an additional fee for a delay in the schedule of 1 week or less due to "Acts of God" (to include but not limited to inclement weather and atmospheric conditions that prevent venting, or power loss to facility from main service provider, etc) that are beyond the control or responsibility of the government or the contractor. Hardware and services failures that are within the control or responsibility of the contractor (and the contractor's subcontractors), such as their facility system or test equipment / supply failures that result in procedural delays will be not be billable to the government and contractor shall extend open window of testing at their facility to complete contractual hypergol test durations.
- The following information is added to page 8, section 8: The NTO will either be under pressure or in a closed system, therefore, boiling or creation of NO₂ vapors is no impact as the vapors will change back to N₂O₄ when pressurized.
- The following information is added to page 8, Section V Government Furnished Data/Equipment/Services: Skid tables are approximately 4' x 8' each with a metal panel surface. The weight of the components will require either a forklift pallet jack or hand lift.
- The attached page 9, NTO Test SOW Milestones, hereby replaces page 9, Appendix 1 – Detailed Test Schedule in the SOW.

4. The date and time for receipt of offers is changed from February 5, 2013 to February 14, 2013, 3:00 p.m. EST per this amendment 02.