

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE FFP	PAGE 1	OF 3	PAGES
2. AMENDMENT/MODIFICATION NO. Amendment #02		3. EFFECTIVE DATE 14 Jan 2010		4. REQUISITION/PURCHASE REQ. NO. 4200323170	
6. ISSUED BY NASA Dryden Flight Research Center Acquisition Management Office PO Box 273, Mailstop 1422 Edwards, CA 93523-0273		7. ADMINISTERED BY (If other than Item 6)		5. PROJECT NO. (If applicable) N/A	

8. NAME AND ADDRESS OF CONTRACTOR (No. Street, county, State and ZIPCode) TO ALL PROSPECTIVE OFFERORS		[X]	9A. AMENDMENT OF SOLICITATION NO. NND10323170R
		X	9B. DATED (SEE ITEM 11) 12/17/2009
			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 one (1) copy 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 DATA 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 data specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)
N/A

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

[X]	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 one (1) copy to the issuing office.

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

See Page 2 of this amendment for description.

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)	
		Brian G. Bowman, Contracting Officer	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
(Signature of person authorized to sign)		BY _____ (Signature of Contracting Officer)	

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14. Continued:

- A. The following Government answers to questions are provided for the information of prospective offerors in preparing their technical proposals:

Question #1: Is Nitrogen Purity required? It says High Purity since this is equipment only, we need to know is there something we need to do for them to make the tank for High Purity?

Answer #1: The requirement is that the system will not degrade the purity of the nitrogen gas resulting from the vaporization of the liquid nitrogen. It is not believed that anything special needs to be done to the system, as long as all system components are suitable for liquid nitrogen operation.

Question #2: Could we use a 9000?

Answer #2: Yes, you could use a 9,000-gallon tank. We only require a minimum capacity of 7,000 gallons.

Question #3A: Regarding the existing 2" VJ line, what is the connection on the line? We need this as we would have tank built with the proper connection.

Answer #3A: The existing VJ line has a CGA NI-250 female connection.

Question #3B: If current VJ does not reach the tank, who is doing the modifications?

Answer #3B: NASA will be responsible to making sure that existing plumbing can reach the tank.

Question #4: Regarding vaporization: (a) to maintain the temperature, we would suggest an electric vaporizer; (b) this would require a 235 KW heater; (c) is electrical power at the site to power vaporizer; (d) how much power at the site?

Answer #4: 235kW of electrical power is not available for this project, although currently not available at the site; we do have the ability to supply 150A, 480VAC, 3PH of electrical service. This power supply would have to be installed in one of our breaker cabinets. The cabinet that will most likely be used is approximately 120 feet (120') from the proposed location of the cryogenic system. It is estimated that about 20-30 feet (20-30') can be run underground from the liquid nitrogen system location to the building, then approximately 80-100 feet (80-100') can run above ground. If a larger electrical service is required, we would need to consult with our facilities engineering group.

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14. A. Continued:

Question #5: Local and remote control, need more detail on what is required and accuracy of measurements of any instrumentation.

Answer #5: Filling of the tank is manual operation at the tank (no requirement for remote operation). For liquid delivery, NASA wants to remotely (inside test facility)/locally (at the tank) control tank pressure and the opening of the valve that starts the flow of liquid nitrogen into the existing VJ line. We want the ability to partially open the valve during pre-cooling phase of the existing VJ line. Once the line has been pre-cooled, the valve will then be fully opened. For gas delivery, we want to remotely/locally control the flow of liquid into the vaporizer and the output gas temperature. We require +/- 10°F control for the gas temperature.

Question #6: Regarding your request for documentation, certifying the equipment for what?

Answer #6: All system components must be certified in accordance with NASA-STD-8719.17 (Rev A)(see attachment).

(END OF AMENDMENT)