Liquid Nitrogen Plant for the National Transonic Facility

Solicitation NNL05111032R

Attachment II of Amendment 1

NASA Langley Research Center

The National Transonic Facility

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Pre-Proposal Conference
September 14, 2005

Agenda

1:00 p.m.	Opening Remarks	Kim Duncan
	Acquisition Overview	Kim Duncan
	Project Overview	George Sydnor
2:00 p.m.	Site Tour	George Sydnor Ellen Carpenter
4:30 p.m.	Return to Conference Room	
	Collect Questions	Kim Duncan
	Closing Remarks	Kim Duncan

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Reasons for Conducting Conference

- Provide an opportunity for potential Offerors to view the site and gather field data
- Answer any prior submitted industry questions on the proposed requirements including statement of work, schedule, proposal instructions, evaluation approaches, contract terms and conditions
- Increase chance to award contract without discussions

Conference Guidelines

- General questions pertaining to LaRC will be addressed at this conference
- Questions pertaining to the RFP must be submitted in writing
- List of attendees, conference presentation, and response to questions received will be posted on the NAIS web site
- Response to questions at this conference should not be construed as a revision unless subsequently confirmed by a formal amendment to the RFP
- Use of cameras is allowed on site tour
- Everyone must stay together as a group
- Safety

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Proposal Preparation Instructions

- Assure proposal contains all necessary information, required documentation, and is complete in all aspects. The evaluation is based upon actual material presented and not on the basis of what is implied. See FAR Clause 52.215-1 Instructions to Offerors – Competitive Acquisition.
- Ensure that the cost proposal is consistent with the technical proposal in all respects since the cost proposal may be used as an aid to determine the offeror's understanding of the technical requirements. Discrepancies may be viewed as a lack of understanding.
- NASA may reject any proposal that fails to comply with all cost proposal instructions, including those for electronic submissions, as incomplete and technically unacceptable.

Proposal Preparation Instructions (con't.)

- No advance payments
- Progress Payments (52.232-16) for Base – See I.8
- Payments under Fixed Price Construction Contracts (52.232-5) for Option – See I.10
    - Progress Payment Schedule (See Section 01011, 1.8)

Method of Evaluation

(Section M, Paragraph M.2)

- Proposals received in response to this solicitation will be evaluated by a source evaluation team (SET) in accordance with NFS 1815.3.
- The Source Selection Authority (SSA), after consultation with the SET and other advisors, will select the offeror that can perform the contract in a manner most advantageous to the Government, all factors considered.

Proposal Evaluation Factors

(Section M, Paragraph M.3)

- Technical Proposal – Volume I
  - Factor 1 – Mission Suitability
    - Subfactor 1 – Liquid Nitrogen (LN2) Plant Production Capacity
    - Subfactor 2 – Project Management
    - Subfactor 3 – Plant Efficiency, Reliability, and Maintainability
    - Subfactor 4 – Small Disadvantaged Business (SDB) Participation Program
    - Subfactor 5 – Safety and Health

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Proposal Evaluation Factors (con't.)

(Section M, Paragraph M.3)

- Business Proposal – Volume II
  - Factor 2 – Cost/Price Analysis
- Past Performance – Volume III
  - Factor 3 – Past Performance

Rating System

- *Mission Suitability subfactors and the total Mission Suitability factor shall be evaluated using the following adjectival ratings, definitions, and percentile ranges on the next slide.*

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Rating System (con't.)

ADJECTIVAL RATING	DEFINITIONS	PERCENTILE RANGE
Excellent	A comprehensive and thorough proposal of exceptional merit with one or more significant strengths. No deficiency or significant weakness exists.	91-100
Very Good	A proposal having no deficiency and which demonstrates over-all competence. One or more significant strengths have been found, and strengths outbalance any weaknesses that exist.	71-90
Good	A proposal having no deficiency and which shows a reasonably sound response. There may be strengths or weaknesses, or both. As a whole, weaknesses not off-set by strengths do not significantly detract from the offeror's response.	51-70
Fair	A proposal having no deficiency and which has one or more weaknesses. Weaknesses outbalance any strengths.	31-50
Poor	A proposal that has one or more deficiencies or significant weaknesses that demonstrate a lack of overall competence or would require a major proposal revision to correct.	0-30

Rating System (con't.)

- *Past Performance will be assigned one of the following ratings: Excellent, Very Good, Good, Satisfactory, Poor/Unsatisfactory or Neutral – these ratings are defined in Section M, Paragraph C.*
  - *Excellent - Of exceptional merit; exemplary performance in a timely, efficient, and economical manner; very minor (if any) deficiencies with no adverse effect on overall performance; and experience that is highly relevant to this procurement.*
  - *Very good - Very effective performance; fully responsive to contract requirements; contract requirements accomplished in a timely, efficient, and economical manner for the most part; only minor deficiencies with minimal effect on overall performance; and experience is very relevant to this procurement.*

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Rating System (con't.)

- Good - Effective performance; fully responsive to contract requirements; reportable deficiencies, but with little identifiable effect on overall performance; and experience is relevant to this procurement.
- Satisfactory - Meets or slightly exceeds minimum acceptable standards; adequate results; reportable deficiencies with identifiable, but not substantial, effects on overall performance; and experience is at least somewhat relevant to this procurement.

Rating System (con't)

- Poor/Unsatisfactory - Does not meet minimum acceptable standards in one or more areas; remedial action required in one or more areas; deficiencies in one or more areas which adversely affect overall performance.
- Neutral - no record of relevant past performance or past performance information is not available.

Relative Importance of Evaluation Factors

(Section M, Paragraph M.4)

- *The weights to be used in the scoring of the Mission Suitability subfactors are presented below:*

LN2 Plant Production Capacity	*450*
Project Management	*200*
Plant Efficiency, Reliability and Maintainability	*200*
SDB Participation Program	*50*
Safety and Health	*100*
	Total 1000

Relative Importance of Evaluation Factors (con't)

(Section M, Paragraph M.4)

- The numerical weights assigned to the above subfactors are indicative of the relative importance of those evaluation areas. Overall, in the selection of a Contractor(s) for contract award, Mission Suitability and Past Performance are approximately equal to one another and more important individually than Price. All evaluation factors other than Price, when combined, are significantly more important than Price.

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Project Personnel

Procurement	
Contracting Officer	Panice Clark
Source Selection Authority	Kim Stone
Contract Specialist	Kim Duncan
Technical	
Project Manager & COTR*	George Sydnor
Deputy Project Manager & Alt. COTR*	Ellen Carpenter

* COTR – Contracting Officer's Technical Representative

Procurement Schedule

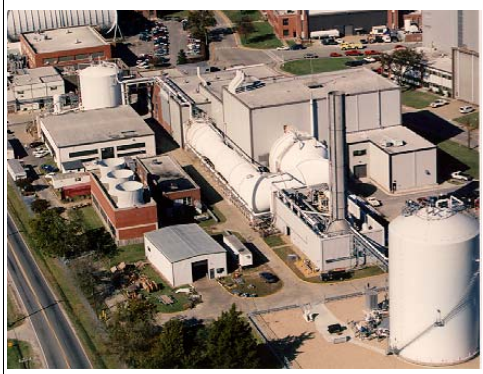
Synopsis Issued	05/25/05
Draft RFP Posted	07/21/05
Solicitation Final RFP Issued	09/02/05
Pre-Proposal Conference	09/14/05
Offers Due	
Volume III – Past Performance	09/23/05
Volume I – Technical Proposal	10/07/05
Volume II – Business Proposal	10/07/05

Project Overview

Description of the National Transonic Facility (NTF)

A fan-driven, closed-circuit, continuous flow, pressurized cryogenic wind tunnel

Mach Number:	*0.1 to 1.2*
Pressure:	*15 to 125 psia*
Temperature:	*-250°F to 150°F*
Reynolds #:	*146 million/ft @ M=1*
Test Gas:	*Nitrogen, Dry Air*
Drive Power:	*101 MW, 45 MW*
Speed Range:	*60-600 rpm*
Circuit Length:	*497 ft.*
Test Section:	*8.2 ft x 8.2 ft*
Area:	*67.2 ft²*
Length:	*25 ft*
Operational:	*1984*
Upgrades:	*1997*



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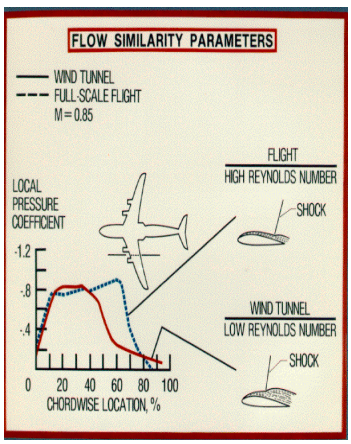
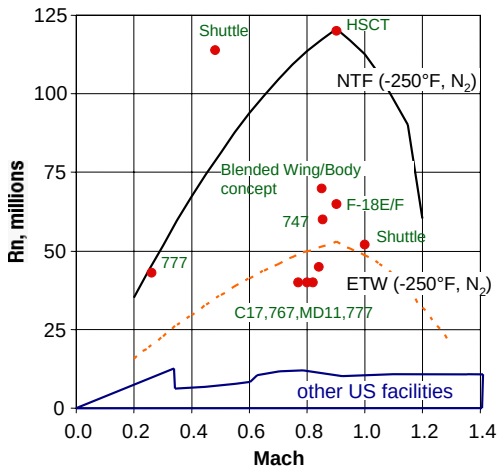
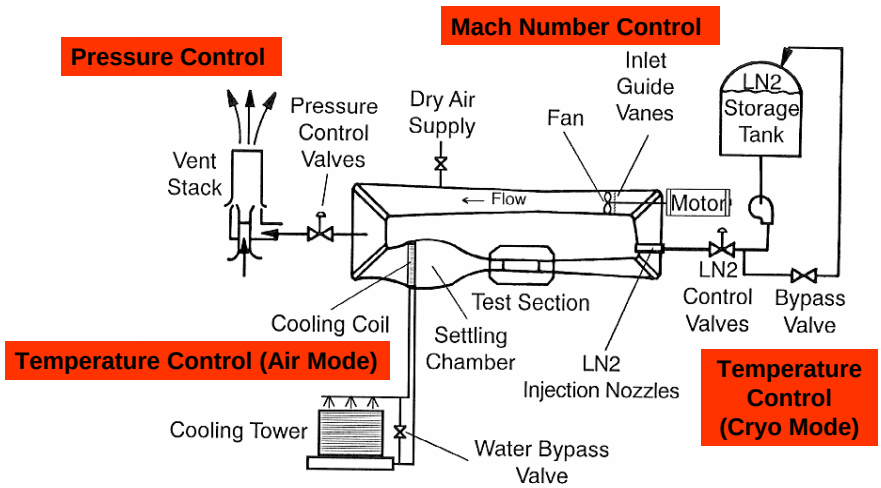
NTF's Reynolds Number Capability





NTF Simplified Schematic



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Basis of Need

- *NTF is the largest single LN2 user in the world, having the highest cryogenic Reynolds (Rn) number capability in the world*
- *Cryogenic testing requires large quantities of LN2 to reduce the temperature and increase the density of the test gas*
- *Research program needs have always been irregular, making the LN2 consumption highly variable on a daily basis*
- *Usage of LN2 has ranged from 21,665 tons (2004) to 73,696 tons (1996)*
- *A Government owned, Contractor operated LN2 plant will provide significant cost savings to research customers by providing low cost LN2*
- *Cryogenic testing will be more affordable and will be attractive to a wider range of customers because cost per data point is reduced*

LN2 Plant characteristics compliant with NTF's needs

- Production rate minimum 300 tons/day
- On-stream availability 98.5%
- Specific power as low as possible
- Design Life of 25 years
- Purity in accordance with MS PRF-24701D, Type II, Grade B
- Additional characteristics
    - Atmospheric design point
    - Location
    - Start/Stop cycles
    - Interface definition
    - Infrastructure

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Division of Work

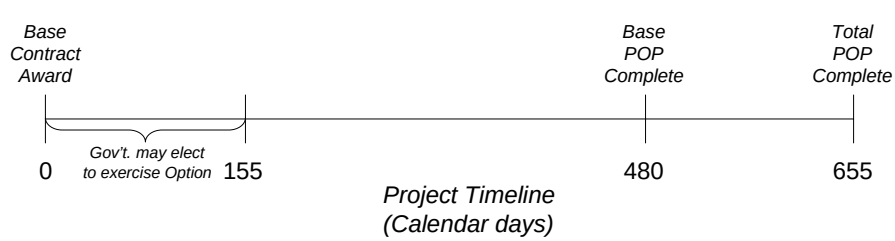
- Work is divided into two phases:
- Base – Funding limited to $10.650M
    - Shall consist of engineering, design, manufacturing, testing, and delivery of equipment to the site for a complete LN2 plant that meets the requirements set forth in the SOW.
- Option – Funding limited to $5.5M
    - Shall consist of all site work, training, commissioning, and demonstration of the LN2 plant's performance.
- Total funding constraint is $16.150M
- Offerors that fail to comply with these funding constraints will be eliminated from further consideration
- All requirements for both the Base and Option portions are detailed in the Statement of Work (SOW), Exhibit A of Solicitation

Division of Work (con't.)

- *Any offer for a plant that produces less than 300 tons per day will be considered technically unacceptable and rejected without further consideration. NASA will place greater value on a plant that will produce more than 300 tons per day, provided it meets the requirements of the SOW and does not exceed the price limitations set forth in Solicitation, Section L.9.C. Business Proposal – Volume II, Factor 2 – Cost/Price Analysis.*

Period of Performance (POP)

- *Base period of performance is 480 consecutive calendar days from the date of contract award*
- *Option period of performance shall begin no later than 155 consecutive calendar days from contract award*
- *Total period of performance is 655 consecutive calendar days from the date of Base award*



LN2 Plant Base Requirements

Exhibit A, SOW Section 1.2.3

- *Project management including personnel, plans, schedules, submittals, progress meetings, risk mitigation, and progress reporting.*
- *Engineering and design including studies, calculations, analyses, design reviews, presentations, drawings, specifications, hazard reviews, and test plans.*
- *Providing new air separation equipment, including all piping, instrumentation and controls, safety devices, electrical equipment, and heat exchanging equipment delivered to the site.*
- *Providing new liquefaction equipment including all piping, instrumentation and controls, safety devices, electrical equipment, analyzers, and cooling equipment delivered to the site.*

LN2 Plant Option Requirements

Exhibit A, SOW Section 1.2.4

- *Site management, construction meetings, risk mitigation, and progress reporting.*
- *Unpacking and rigging of LN2 plant equipment. Any shipping or handling damage shall be the responsibility of the Contractor and shall be repaired or replaced prior to installation.*
- *Assembly and installation of LN2 plant equipment.*
- *Initial fills of all chemicals, lubricants, refrigerant gases, adsorbent materials, analyzer calibration gases, ink, paper, and insulation materials.*
- *Building modifications.*
- *Connection to the existing 6.6 kV, 3 phase, 60 cycle power distribution system in Building 1241.*
- *Installation of the lightning protection system.*
- *Cooling water supply construction and integration.*

LN2 Plant Option Requirements (con't.)

- Connection to the existing instrument air system in Building 1241 for a start-up air supply.
- New interface piping to the NTF LN2 storage system, including all subcoolers, pumps, valves, filters, analyzers, and instrumentation.
- New interface to the NTF control system, including plant control hardware and software.
- Site preparation and equipment erection.
- Control system checkout, including instrumentation calibrations, activation, and operation. Set and connect the control room.
- Installation, connection, and startup of all equipment, piping, wiring, and auxiliaries.
- Commissioning of the LN2 plant, training, performance demonstration, and warranty.

Site Map has been deleted intentionally. If you would like a copy of this, please submit a request in writing in accordance with Solicitation Section L.9.2.

LN2 Plant Project Site drawing has been deleted intentionally. If you would like a copy of this, please submit a request in writing in accordance with Solicitation Section L.9.2.

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Aerial View of Project Site picture has been deleted intentionally. If you would like a copy of this, please submit a request in writing in accordance with Solicitation Section L.9.2.

Site Preparation Work for Building 1241

- *Building previously housed wind tunnel variable speed drives auxiliaries*
- *Separate task order with NASA's on-site Contractor has been issued*
- *Remove rotating machinery and obsolete switchgear*
- *Prepare 6.6kV switchgear for interface*
- *Cover equipment pads for personnel protection*

Building 1241 Interior

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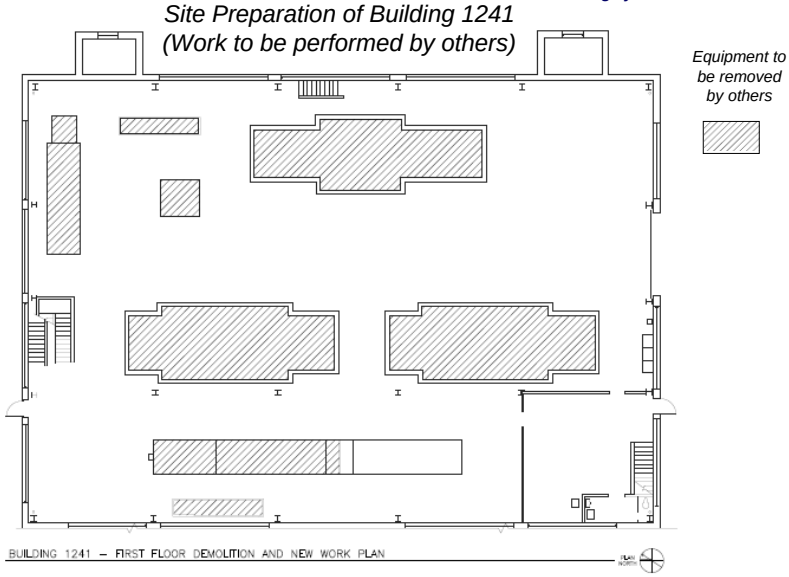
Site Preparation of Building 1241
(Work to be performed by others)



LN2 Plant Interfaces

- LN2 Subsystem – SOW Section 3.1.3.a
- Electrical 6.6kV – SOW Section 3.1.4.b
- Tunnel Controls Interface – SOW Section 3.4.14.1
- Cooling Water Tower (if required) – SOW Section 3.1.3.e
- Utilities
    - Instrument air - SOW Section 3.1.3.d
    - Potable water -SOW Appendix B

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Site Tour

- Building 1241 and Parking Lot
- Existing Cooling Water Tower
- LN2 Subsystem Tie-in area
- 800 Ton Run Tank, 3000 Ton Storage Tank
- Remote control room in Building 1236
- Return to conference room to submit questions