Control No. N-10-24

JUSTIFICATION AND APPROVAL
FOR OTHER THAN FULL AND OPEN COMPETITION

Program: Aerosol System Tests of Chemical/Biological Ensembles

Authority: 10 U.S.C. 2304 (C) (2)Amount: $304,796

Prepared By:
[redacted]
DSN: [redacted]
Title: Chemical Engineer, Chemical Technology Team
Date: 28 April 28, 2010

Procuring Contracting Officer:

Darlene L. Rideout
DSN: 256-4125
Title: Contracting Officer
Date:

Technical Representative:
[redacted]
DSN: [redacted]
Title: Chemical Engineer, Chemical Technology Team
Date: 28 April 28, 2010

Requirements Representative:
[redacted]
DSN: [redacted]
Title: Team Leader, Chemical Techology Team, WARSTAR
Date: 28 April 10

Reviews: I have reviewed this justification and find it adequate to support other than full and open competition.

[redacted]

Legal Counsel
Typed Name:
DSN:
Signature:
Date: 6/1/10

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1. CONTRACTING ACTIVITY

United States Army Research, Development & Engineering Command (RDECOM) Contracting Center, Natick Contracting Division, Natick, MA 01760-5011.

2. DESCRIPTION OF ACTION BEING APPROVED

Approval is requested to solicit for a new contract in support of The Natick Soldier Research Development and Engineering Center's (NSRDEC)-Warfighter Science Technology and Applied Research (WarSTAR) Directorate's Materials and Defense Sciences Division (MaDSci) on the basis of other than full and open competition. A single Firm Fixed Price (FFP) type contract is contemplated for award to Research Triangle Institute (RTI) International, 3040 Comwallis Road, Research Triangle park, NC 27709 for testing and evaluation of protective chemical/biological (CB) garments against an aerosol challenge.

3. DESCRIPTION OF SUPPLIES/SERVICES:

CB users are Joint Services, including the Army, Air Force, Navy and Marine Corps and the National Guard for Homeland Defense operations. In addition, various components of the Homeland Security sector leverage technologies developed by DOD to meet emergency responder needs.

This Test &Evaluation (T&E) effort is in support of two separate projects that NSRDEC is leading for the Defense Threat Reduction Agency (DTRA) / Joint Science & Technology Office (JSTO). The primary objective of the first project, the "Closures Effort" is to improve aerosol protection by addressing leakage at the closures and interfaces of CB ensembles. The primary objective of the second effort, the "Chemical/Biological and Ground Soldier System Combined Technology Demonstration" is to demonstrate the reduced thermal burden of current industry and government CB material technologies. The overall purpose of this T&E effort is to determine the aerosol protection of the CB ensembles to be tested. Two separate series of Aerosol System Tests (AST) are required for the two separate projects. The only way to perform a complete assessment of how an ensemble protects against aerosols is through AST analysis, thus this test is a critical milestone for both projects.

The contractor shall conduct AST of chemical/biological ensembles that the US Army NSRDEC will supply to the contractor. The contractor shall supply the volunteer test participants needed to conduct the testing. The testing shall be conducted in accordance with the procedures described in;

> Test Operations Procedure (TOP 10-2-022): Chemical Vapor and Aerosol System Level Testing of Chemical/Biological Protective Suits: James A. Hanzelka, Andrew Neafsey, J.M. Baker, Daniel Blodgett, Thomas Lindsey, James Hanley (RTI); U.S. Army Dugway Proving Ground, West Desert Test Center, Dugway, UT 84022-5000, February 2002.

The test facility shall have Federal Wide Assurance (FWA) for the protection of test participants by the U.S. Department of Health and Human Services (HHS) Office for Human Research Protections (OHRP). Additionally, the facility shall have approval from their Institutional Review Board (IRB) to conduct AST with human subjects.

The conditions of the AST are herein described in brief. The target test conditions will be a 10 mph wind speed, an air temperature of 70 oF +/- 5 oF and a relative humidity of 50% +/- 10 %. The exposure period will be 30 minutes providing an aerosol CT of approximately 5,000 mg m3/min. During the exposure, the test volunteer will perform a prescribed series of motions (including standing, walking, running in place, bending, reaching, crawling, dropping to a prone firing position and rolling onto back). The challenge aerosol will be micron-sized silica powder tagged with a fluorescent tracer. The aerosol should span the

size range from 0.1 to 10 μm. The aerosol that penetrates the suit during the test and deposits on the volunteer's skin should be rinsed from the skin and quantified by fluorometric analysis.

The estimated cost for this effort is $304,796. Type of funds to be used will be RDT&E.

4. AUTHORITY CITED:

The statutory authority permitting other than full and open competition is 10 U.S.C. 2304 (c)(2), as implemented by FAR 6.302-1(a), entitled "Only one responsible source and no other supplies or services will satisfy agency requirements."

5. REASON FOR AUTHORITY CITED:

RTI is the only company known to conduct AST as described by TOP 10-2-022. RTI was involved with developing this test back in the 1980's, first with mannequins and later with human test subjects. James Hanley of RTI is listed as an author of TOP 10-2-022 and is intimately familiar with the details of this test. Since the inception of this test, RTI has conducted numerous AST of CB ensembles for the military and for the first responder community.

The results from previous AST on military CB ensembles that were tested by RTI will be a basis for comparison to the proposed AST to be conducted in this effort, thus serve as a baseline in order to determine any benefits in aerosol protection. As such, it is required that the test procedures and analytical methods of the AST of chemical/biological ensembles to be conducted, be compatible with the previous testing conducted.

Currently, the only known AST facility is at RTI. Even if another entity were to construct a chamber and offer AST testing, the newly constructed chamber would need to be validated for confidence to be established in the test capability. Validation is a time consuming process that requires a series of tests and would require significant lead time for the facility to have test services readily available. Additionally, there would be significant lead time required to approvals needed to conduct this testing with human test participants. The estimated minimum lead time for a company to establish and validate an AST facility is six (6) to twelve (12) months.

The testing required under this effort is in support of two separate projects that DTRA/JSTO has funded NSRDEC to lead. The schedule for the, "Chemical/Biological and Ground Soldier System Combined Technology Demonstration," requires that the AST be completed by the end of August 2010. In order to meet project milestones under the "Closures Effort," NSRDEC needs this testing completed by October 2010. The necessary completion dates for these series of tests are approximately three (3) to five (5) months away.

In order to meet the project milestone schedules for both of these programs, the testing needs to be conducted at RTI.

6. EFFORTS TO OBTAIN COMPETITION:

AST is documented in a formal Test Operating Procedure (TOP) that has been published by the Department of Defense, thus the methodology is available for any company who would like to build an AST chamber and offer services to conduct the test. Interested parties can request TOP 10-2-022 through the website for the US Army Developmental Test Command; http://www.dtc.army.mil/.

Additionally a sources sought notice was prepared and solicited through the Federal Business Opportunities website on 30 April 2010. The sources sought notice requested information on the types and sizes of businesses that will be able to compete on future contracting actions for this type of testing. As indicated in pargaraph 8 below, only one response was received and that was from RTI International.

7. ACTIONS TAKEN TO INCREASE COMPETITION:

Any barriers to competition are likely related to the high start-up costs associated with building a re-circulating wind tunnel capable of dispersing an aerosol, obtaining the necessary safety approvals, and validating the test processes.

A request for proposal (RFP) for a multiyear competitive contract is planned for the fall 2010 timeframe. This contract is planned to include AST as well as additional aerosol tests of CB materials.

8. MARKET SURVEY:

A sources sought notice (Solicitation Number: W911QY-0430-2010) was prepared and solicited through the Army Single Face to Industry and Federal Business Opertunities websites from 30 APR 10 until 15 May 10. The sources sought notice requested information regarding companies and their capabilities to perform AST. There was only one respondent to the sources sought notice and that was RTI.

In addition, as part of the "Closures Effort" NSRDEC has been performing a literature review of all aerosol testing performed on CB ensembles. This literature review has included literature searches performed by the NSRDEC Alvin O. Ramsley Technical Library and searched relevant Defense Department sources. All literature has shown that RTI is the only facility to have conducted AST to date.

Jeffrey Dunn, prepared and solicited the sources sought notice issued through FedBiz Opps. Mr. Dunn is a Chemical Engineer on the Chemical Technology Team at the NSRDEC and has been working in the CB community since August 2006. He has been a principle investigator on two projects, one of which has been focused on developing an improved AST analytical test methodology since 2008.

Walter Zukas is the principle investigator for the "Closures Effort" and was responsible for conducting the literature review described above. Dr. Walter Zukas is a Research Chemical Engineer on the Chemical Technology Team at the NSRDEC serving as the project officer on research projects expanding the scientific knowledge base in polymeric materials and composites for CB protection applications with government, industrial, and academic laboratories. He has been a Principal Investigator and technical contributor for a broad range of research projects in the polymeric materials and composites areas for both Army and industrial laboratories for more than 25 years. He is the author/coauthor of over fifty-six technical publications and has made numerous invited public presentations of his research. In addition to his technical experience described below, Dr. Zukas is currently an elected member of the Polymer Analysis Division Board of Directors of the Society of Plastics Engineers (SPE); a member of NSRDEC's Senior Technical Advisory Council; NSRDEC's SBIR Team Chief for Advanced Materials and Manufacturing and Directorate Agent for new topic development; and a member of the American Chemical Society and the Society of Plastics Engineers.

9. INTERESTED SOURCES:

No other interested parties or sources are known to date. The sources sought notice had only one respondent and that was RTI.

In accordance with FAR 5.201, a notice of intent to award a sole source contract to RTI will be published in the FedBiz Opps which will state that any proposals received shall be considered.

10. OTHER FACTORS:

The facility must have Federalwide Assurance (FWA) for the protection of human subjects by the U.S. Department of Health and Human Services (HHS) Office for Human Research Protections (OHRP). Additionally, the facility must have approval from their Institutional Review Board (IRB) for conducting AST with human subjects. RTI has received both certifications.

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11. Technical Certification:

I hereby certify that the supporting data under my cognizance which are included in the justification are accurate and complete to the best of my knowledge and belief.

Name: [redacted]
Date: 27 May 2010
Title: Chemical Engineer, Chemical Technology Team

Signature: [redacted]

12. Requirements Certification:

I certify that the supporting data under my cognizance, which are included in the J&A, are accurate, complete and to the best of my knowledge and belief.

Name: [redacted]
Date: 27 May 2010
Title: Team Leader, Chemical Technology Team, WARSTAR

Signatur[redacted]
13. Fair and Reasonable Price Determination

The Government Price Analyst will conduct a cost analysis of the contractor's proposal and will utilizing Price Analysis of cost and price proposals submitted by Metro Surveillance Inc. Therefore, I determine that the anticipated cost to the Government for this contract action will be fair and reasonable.

Date: 6/2/10
Contracting Officer

Signature: [redacted]

15. Procuring Contracting Officer's Certification

I certify that this justification is accurate and complete to the best of my knowledge and belief.

Date: 6/2/10
Contracting Officer
Signature: [redacted]