JUSTIFICATION FOR OTHER THAN FULL AND OPEN COMPETITION

Upon the basis of the following justification, I as Contracting Officer hereby approve use of the other than Full and Open competition for the proposed contractual action pursuant to the authority of 10 USC 2304(c)(1), only one responsible source and no other supplier or servicing activity will satisfy agency requirements, as implemented by FAR 6.302-1.

1. Contracting Activity

Naval Postgraduate School
Department of Contracting and Logistics
1 University Circle
Monterey, CA 93943

2. Description of the Action Being Approved

This justification covers the procurement of two ballistic chambers and one gas launcher to support ongoing research efforts at NPS. To ensure comparable safety procedures and computability of results with other launchers/chambers operated by the Navy, this purchase requires sole-source authority for Physics Applications Inc. This justification for other than full and open competition will be posted at the Government wide Point of Entry.

3. Description of Supplies/Services

Naval Postgraduate School (NPS) needs to acquire two ballistic chambers and one gas launcher to support ongoing projects in reactive materials and electromagnetic launcher technology. We require the following items for this purchase:

Item 1: Single-stage gas launcher with enclosed ballistic range to conduct terminal ballistics experiments. The launcher should be capable of launching projectiles with sabots to velocities between 50 and 1200 m/s, with the 1200 m/s figure achievable for a 10mm aluminum sphere and sabot combination. The gas launcher should be able to operate on nitrogen or helium, with helium being required for the highest velocity performance. The system should include the following items:

- Smooth bore launch tube, roughly 0.5" in diameter and 120" long.
- High pressure reservoir with fast-opening value. Reservoir pressures capable of up to 5000 psi.
- Blast tank to contain gas exit from the muzzle of the launcher. Blast tank should contain a sabot stop assembly and a port to vent.
- Floor mount to support entire launch assembly and blast tank (42" centerline height).
- Drift tube at downrange end of blast tank with two pairs of ports for optical velocity measurement system. Drift tube should have a square cross section.
- 2-station optical (light screen) projectile velocity measurement system.
- Target chamber past the velocity measurement system, 12" diameter by 12" long with three radially oriented instrumentation ports.
- Catch tank (12" diameter by 30" long) to collect impact debris.
- Stand to support garget tank and catch tank and position them on the range centerline. The catch should be able to be slide off-axis for easy servicing.
- Remote operated gas handling system to fill reservoir and activate the fast release valve to launch the sabot/projectile.

- Air-driven gas booster system to increase pressure of user-supplied bottled gas up to 6000 psi. 1.5 cubic feet, 6000 psi storage cylinder with connecting hose should be included and ready to hook up to shop air supply (80-100 psi).
- Shipping to NPS applied physics facility.
- Operation manual.

Item 2: Sabots for 0.5" bore gas launcher to conduct ballistics testing. These sabots must be ensured to work with the gas launcher system in Item 1. Sabots should meet the following specifications:

- 4-piece serrated sabot to launch sub-caliber projectiles from smoothbore launch tube described in Item 1. Sabots should be made from glass-reinforced polymer.
- Sabot design should be able to accommodate either spherical or cylindrical projectiles with diameters from 2mm to 10mm.
- NPS requires 50 sabots to launch spherical 10mm projectiles, and 50 sabots to launch 10mm diameter cylinders. A total of 100 sabots are requested for this contract.

Item 3: An enclosed ballistic range that will be coupled to an electromagnetic launcher system. The system must be able to contain the muzzle blast, plasma, and impact debris associated with a small-caliber electromagnetic launcher. The following items must be included in this range system:

- Blast tank to contain the muzzle blast of electromagnetic launcher. This should contain features downrange for mountain of a sabot stop assembly. The tank should be supported on four legs at a 42" centerline height. Must include a port to vent the tank.
- Drift tube downrange of blast tank with two pairs of ports for break-screen holders. Drift tube will have a square cross section.
- 2-station break screen projectile velocity measurement system.
- Target chamber (12" diameter and 24" long) with three radially oriented instrumentation ports.
- Catch tank (12" diameter by 24" long) to collect impact debris.
- Stand to support target tank and catch tank on the range centerline and allow catch tank to be easily moved off-axis for servicing.
- Shipment to NPS via a standard carrier.

Delivery must occur within four months of award of contract. [redacted]

4. Statutory Authority Permitting Sole Source

- 6.302-1 -- Only One Responsible Source and No Other Supplies or Services Will Satisfy Agency Requirements.

5. Rational Justifying Use of Cited Statutory Authority

The Navy currently operates similar gas-launcher/ballistic chamber systems at several locations, including NSWC Indian Head, NSWC Dahlgren, and NRL. To ensure compatibility of safety and standard operating procedures as well as scientific results with other launchers/chambers operated by the Navy, this purchase requires sole-source authority for Physics Applications Inc. Discussions with Navy investigators at the above facilities revealed that there is no feasible supplier other than Physics Applications Inc. that can provide this manner of highly specialized system. In addition, purchase of the system from Physics Applications Inc. will

allow us to utilize existing safety/SOP documents from other Navy facilities, saving time and money by avoiding completely new development of procedures at NPS.

6. Description of Efforts Made to Solicit Offers from as Many Offerors as Practicable

We did extensive research to contact other Navy scientists with experience on comparable systems. We spoke with [redacted] at NSWC Indian Head, [redacted] at NSWC Dahlgren/Naval Research Lab, and [redacted] at Army Research Lab who all specialize in ballistic range and launch systems of the manner described here. In all cases, each investigator confirmed Physics Applications Inc. was the only possible offeror for this project, and that to ensure similarity with other DoD systems a sole-source to Physics Applications Inc. was the best option. All investigators had gone through similar contracting processes that resulted in a sole-source award to Physics Applications Inc.

7. Determination of Fair and Reasonable Cost

Costs will be determined fair and reasonable at time of award by the Contracting Officer and based on previous contracts and similar contracting efforts.

8. Market Research

Our market research for chambers/launcher and related materials was built upon market research performed by several other Navy scientists in purchasing similar systems. In all cases, their contracts were awarded to Physics Applications Inc. A full outline of the market research is given in the enclosed document.

9. Other Facts Supporting Use of Other Than Full and Open Competition:

Physics Applications Inc. has a history of being awarded government contracts for very similar range and launcher systems, and are considered world experts in their design. During our efforts to contact other Navy personnel who had contracted with Physics Applications Inc., the universal response was that their performance had been excellent and their prices very reasonable, especially considering there were no other companies in the United States with expertise in this area. As there are potentially significant safety issues if the system in question is poorly designed, prior performance is especially critical.

10. Actions to Remove Barriers to Future Competition:

The main barrier to competition in this case is that we are requesting a product that is extremely niche; the gas-launcher and range systems we are requesting here are only used by a tiny handful of researchers in the DoD. It is unlikely the market will expand beyond these stakeholders, but if it does then it may be possible in the future for additional companies to offer similar range setups.

CERTIFICATIONS AND APPROVAL

TECHNICAL/REQUIREMENTS CERTIFICATION

I certify that the facts and representations under my cognizance which are included in this Justification and its supporting acquisition planning documents, except as noted herein, are complete and accurate to the best of my knowledge and belief.

Technical and Requirement Cognizance:

[redacted]

Signature | Name (Printed) | Phone No. | Date

CONTRACTING OFFICER CERTIFICATION

To the extent that the LSJ value is between $2,500 and $150K for services and between $3K and $150K for products, the Contracting Officer's signature below also represents approval of the J&A/LSJ.

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

[redacted]