



DEPARTMENT OF THE NAVY

NAVAL RESEARCH LABORATORY
STENNIS SPACE CENTER, MISSISSIPPI 39529-5004

IN REPLY REFER TO

JUSTIFICATION FOR OTHER THAN FULL AND OPEN COMPETITION

1. The Department of the Navy, contracting through the Naval Research Laboratory (NRL), proposes to enter into a contract on the basis of other than full-and-open competition with Saint Gobain Crystals, Inc. for provision of Lanthanum Bromide gamma-ray detectors.

2. **Nature and/or description of the action being approved.**

The Naval Research Lab is developing a prototype radiation detection system for the Office of Naval Research Maritime Weapons of Mass Destruction Detection Program. The NRL System will consist of a mobile platform transporting state-of-the-art gamma ray detectors and imaging systems. Some of the required detectors are Cerium-doped Lanthanum Bromide detectors.

3. **Description of the supplies or services required to meet the needs of the Naval Research Laboratory and the estimated value.**

The required detectors shall be individually packaged Lanthanum Bromide gamma-ray detectors.

- (a) The detector shall consist of a sealed cylindrical Lanthanum Bromide crystal and a photomultiplier tube with a circular face;
- (b) The detector shall have a Cerium doped Lanthanum Bromide crystal with an active volume of 3 inch diameter and 4 inches in length;
- (c) The crystal shall be housed in an aluminum housing, with a mounting flange. The mounting flange shall have 6 through-holes for 1/4-20 screws.
- (d) The actual blueprints shall be approved by NRL before fabrication begins.
- (e) The photomultiplier tube shall have a 3.5 inch face and a 14 pin connector for the photomultiplier base.
- (f) The photomultiplier shall be in a mu-metal shield.
- (g) The detector shall be provided with a demountable base with a BNC connector for the signal connection and an SHV connector for the high voltage connection.
- (h) The detector shall have an energy resolution of better than 3.5% (full width at half maximum) for 662 keV photons when illuminated end on at room temperature (25 C).
- (i) The detector shall have a light decay constant of < 35 nanoseconds.

(j) The detector shall have an internal background rate of < 0.15 counts per second per cubic centimeter between 1.6 MeV and 2.6 MeV.

(k) The detector shall have an operational temperature range between 5 C and 50 C (with temperature ramping rates < 8C/hour).

3.1 A statement of delivery requirements (e.g., include a list of ships and/or shore activities and required delivery dates for each).

The Contractor shall deliver a minimum of 10 through a maximum of 12 detectors within 12 months of receipt of order.

3.2 The total estimated dollar value (including all options) for the acquisition(s) covered by the justification.

The total estimated dollar value is between 450 and 500 thousand dollars, to be awarded in FY09.

4. Identification of the statutory authority permitting other than full and open competition.

10 U.S.C. 2304 (c)(1), FAR 6.302-1: Only One Responsible Source

5. Demonstration that proposed contractor's unique qualifications or nature of the acquisition requires use of the authority cited.

The required large Cerium-doped Lanthanum Bromide gamma-ray detector technology is protected under numerous patents (e.g.: US7,067,815B2; US7,067,816B2; EP1255796B1; et. al.), and is licensed to Saint-Gobain Crystals. These specific crystals are required for their unique light yield and fast response time. The large volume of crystals required are necessary to meet operating efficiencies for the prototype radiation detection system.

6. A description of efforts made to ensure offers are solicited from as many potential sources as is practicable.

The requirement will be publicized in FedBizOps as a notice of intent to contract with Saint-Gobain Crystals on the basis of less than full and open competition. Alternate sources will be offered the opportunity to present documentation and justifications supporting their capability to provide the required supplies.

7. Determination by the Contracting Officer that the anticipated cost to the Government will be fair and reasonable.

The Contracting Officer will perform a price analysis to determine whether the proposed price is fair and reasonable. The maximum projected price for this effort is estimated to be approximately \$500,000.00.

8. Description of the market survey conducted and results or statement of the reasons a market survey was not conducted.

Market research indicated that only one source of large Cerium-doped Lanthanum Bromide gamma-ray detectors was available due to patent and licensing protections.

9. Any other facts supporting the use of other than full and open competition:

9.1 Acquisition Plan

Not applicable.

9.2 Automatic data processing (ADP) requirements.

Not applicable.

9.3 Spare Parts

Not applicable.

10. A listing of the sources, if any that expressed, in writing an interest in the acquisition.

As noted in Paragraph 6, above, this requirement will be publicized in FedBizOps as a notice of intent to contract with Saint-Gobain Crystals on the basis of less than full and open competition. Information received from any alternate sources in response to advertisement of these requirements will be incorporated into the Contract File.

11. A statement of the actions, if any, the agency may take to remove or overcome any to competition before any subsequent acquisition for the supplies or services required.

Sole source acquisition of the required supplies is a one-time purchase. No further acquisitions of the required supplies on a sole-source basis are anticipated by the Government.

12. Certification and Approval signatures.

TECHNICAL AND REQUIREMENTS CERTIFICATION
REQUIRED BY FAR 6.303-2(b)

I certify that the facts and representations under my cognizance which are included in this justification which form a basis for this justification are complete and accurate.

Technical Cognizance

(Signature) W. Neil Johnson 7650 [Redacted] 4/27/09
Name and Title Code Phone Date
W. Neil Johnson Supv Astrophysicist

Requirements Cognizance

(Signature) Jill Dahburg 7600 [Redacted] 4/30/09
Name and Title Code Phone Date
JILL DAHBURG, SSD Superintendent

Review by Legal Counsel

Armanor V. Bahl, Associate Counsel 1008.3 [Redacted] 6/11/2009
(Signature) Name and Title Code Phone Date

CONTRACTING OFFICER CERTIFICATION REQUIRED BY FAR 6.303-2(a) (12)

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

(Signature) Patricia A. Lewis 3235 [Redacted] 6/1/09
Name and Title Code Phone Date