Advance Contract Award Notice (ACAN)

ACAN 23-58092

Thermal Analysis Laboratory Renewal

1. Advance Contract Award Notice (ACAN)

   An ACAN is a public notice indicating to the supplier community that a department or agency intends to award a contract for goods, services or construction to a pre-identified supplier, thereby allowing other suppliers to signal their interest in bidding, by submitting a statement of capabilities. If no supplier submits a statement of capabilities that meets the requirements set out in the ACAN, on or before the closing date stated in the ACAN, the contracting officer may then proceed with the award to the pre-identified supplier.

2. Definition of the requirement

   - The Construction Research Center of the National Research Council Canada has a requirement to replace 1 non-functioning Modulated Differential Scanning Calorimeter and 1 non-functioning Thermal Gravimetric Analyzer in the Thermal Analysis Laboratory in order to meet upcoming contractual obligations.

3. Criteria for assessment of the Statement of Capabilities (Minimum Essential Requirements)

   - Any interested supplier must demonstrate by way of a statement of capabilities that its equipment meets the following requirements:

     The Modulated Differential Scanning Calorimeter (quantity of 1) must meet or exceed the following technical specifications with no post-test desmearing, deconvolution or other manipulation:

     1. an operational temperature range of -180°C to 725°C;
     2. a liquid nitrogen cooling system to provide the lower -180C temperature limit;
     3. a 54 position autosampler;
     4. a direct Cp (heat capacity) measurement;
     5. a user replaceable cell;
     6. a dual input gas delivery manifold;
     7. a calibration kit;
     8. a sample press and appropriate pans;
     9. a footprint no greater than 76 cm wide x 48 cm deep;
     10. a 5-year warranty on DSC cells and furnace;
     11. a software and communication kits for instrument control and data analysis and management; all software must be capable of reading,

opening, analyzing and processing archived data, methods and protocols, which are in TA Instruments format, without the use of a conversion program

12. the Modulated Differential Scanning Calorimeter must meet the following minimum specifications:

- Baseline Linearity (-50°-300°C) <5 μW
- Baseline Repeatability (-50°-300°C) <10 μW
- Baseline Accuracy (-50°-300°C) ±20 μW
- Heat Flow Digital Resolution 0.001 μW
- Baseline Noise (-50°-300°C) <0.2 μW
- Temperature Accuracy ±0.025°C
- Temperature Precision ±0.005°C
- Temperature Repeatability ±0.025°C
- Enthalpy Precision ±0.04%
- Enthalpy Repeatability ±0.25%
- Indium Response Ratio ≥100

The Thermal Gravimetric Analyzer (quantity of 1) must meet or exceed the following technical specifications when evaluated as described for each value:

1. an operational temperature ranges from ambient to 1200°C;
2. a high resolution TGA, modulated TGA and auto-stepwise TGA functionality;
3. a 25 position autosampler;
4. a dual input gas delivery manifold;
5. an integrated electromagnet;
6. a temperature calibration melting point standard;
7. a temperature calibration as per ASTM E1582;
8. a footprint no great than 76 cm wide x 48 cm deep;
9. a 5-year warranty on furnaces;
10. a software and communication kits for instrument control and data analysis and management; all software must be capable of reading, opening, analyzing and processing archived data, methods and protocols, which are in TA Instruments format, without the use of a conversion program
11. the Thermal Gravimetric Analyzer must meet the following minimum specifications:

- Sample Weight Capacity: 1000 mg
- Dynamic Weighing Range: 1000 mg
- Weighing Precision: ± 0.01%
- Dynamic Baseline Drift (50°C to 1,000 °C): <10 µg, with platinum pans
- Baseline Linearity (50°C to 1,000 °C): <1 µg, with platinum pans

- Signal Resolution: 0.002 μg
- Sensitivity: < 0.1 μg (1 ppm)
- Temperature Range: ambient to 1200 °C
- Temperature Accuracy: ±1 °C
- Dynamic Temperature Precision: ±1 °C
- Isothermal Temperature Precision: ±0.1 °C
- Linear Heating Rates: 0.1 to 500 °C/min in 0.01 °C/min increments
- Ballistic Heating Rates: > 1600 °C/min
- Furnace Cooling: Forced Air 1000 °C to 35 °C in < 10 min.

4. Applicability of the trade agreement(s) to the procurement

   This procurement is subject to the following trade agreement(s):

   - Canada-Chile free trade agreement (CCFTA)
   - Canada-Peru Free Trade Agreement (CPFTA)
   - Canada-Columbia free trade agreement (CCOFTA)
   - Canada-Panama Free Trade Agreement (CPAFTA)
   - Canada-Honduras Free Trade Agreement (CHFTA)
   - Canada-Korea Free Trade Agreement (CKFTA)
   - Canada-Ukraine free trade agreement (CUFTA)
   - Canadian Free Trade Agreement (CFTA)
   - Comprehensive Economic and Trade Agreement (CETA)
   - World Trade Organization - Agreement on Government Procurement (WTO-AGP)
   - Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)

5. Justification for the Pre-Identified Supplier

   The pre-identified supplier is related to commonality and compatibility with existing equipment and is the only one capable to provide the equipment required to perform the research. The Construction Research Center has a suite of thermal analysis equipment (DHR3 Dynamic Shear Rheometer, Q800 Differential Mechanical Analyzer, Q600 Simultaneous Differential Thermal Analyzer and Discovery Q650 SDT) to which the MDSC and TGA belong. Commonality of equipment leads to ease of operations, and reduced training and servicing times and costs. With multiple sources of equipment, costs for operational training, and servicing would be greatly increased in comparison to having only one provider. Data and results can be quickly and easily compared

and compiled without have to use a third-party converter software necessary when using thermal analysis equipment from a different manufacturer.

6. Government Contracts Regulations Exception

   The following exception(s) to the *Government Contracts Regulations* is *(are)* invoked for this procurement under subsection 6 (d) – “only one company is capable of performing the work”.

7. Exclusions and/or Limited Tendering Reasons

   Canadian Free Trade Agreement, Article 513: Limited Tendering (b, iii.):

   The goods can be supplied only by a particular supplier and no reasonable alternative or substitute goods or services exist due to an absence of competition for technical reasons due to an absence of competition for technical reasons;

8. Ownership of Intellectual Property

   - Ownership of any Foreground Intellectual Property arising out of the proposed contract will vest to Canada.

9. Delivery date

   - The equipment must be delivered by February 28, 2024.

10. Cost estimate of the proposed contract

    The estimated value of the contract, is $272,638.60 CAD (Applicable taxes are extra).

11. Name and address of the pre-identified supplier

    The pre-identified supplier is:

    TA Instruments – Waters LLC, 159 Lukens Drive, New Castle, DE 19720 USA.

12. Suppliers' right to submit a statement of capabilities

    Suppliers who consider themselves fully qualified and available to provide the goods, services or construction services described in the ACAN may submit a statement of capabilities in writing to the contact person identified in this notice on or before the closing date of this notice. The statement of capabilities must clearly demonstrate how the supplier meets the advertised requirements.

13. Closing date for a submission of a statement of capabilities

    The closing date and time for accepting statements of capabilities is

    September 15, 2023 at 2:00 p.m., EDT

14. Inquiries and submission of statements of capabilities

    Inquiries and statements of capabilities are to be directed to:

    Stéphane Lajoie, Senior Contracting Officer

    E-mail: stephane.lajoie@nrc-cnrc.gc.ca