NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
STENNIS SPACE CENTER (SSC)
JUSTIFICATION FOR OTHER THAN FULL AND OPEN COMPETITION
(JOFOC)
LIQUID OXYGEN (LOX) PRESSURE CONTROL VALVES

1. **Federal Acquisition Regulation (FAR) 6.104-1(a)(1) – Identification of the agency and the contracting activity, and specific identification of the document as a "Justification for other than full and open competition."**

   This document is a justification for other than full and open competition prepared by the National Aeronautics and Space Administration (NASA) Stennis Space Center (SSC).

   The procuring agency is NASA, and the contracting activity is the NASA Shared Services Center (NSSC).

2. **FAR 6.104-1(a)(2) – The nature and/or description of the action being approved:**

   This justification provides the rationale for contracting by other than full and open competition to award a sole-source Purchase Order with Gosco Valves for multi-stage liquid oxygen (LOX) pressure control valves.

3. **FAR 6.104-1(a)(3) – A description of the supplies or services required, to meet the Agency's needs (including the estimated value):**

   The supplier shall provide for: fabrication; assembly; LOX cleaning; functional testing; packaging; and all supporting documentation for two (2) multi-stage liquid oxygen (LOX) pressure control valves in accordance with the following:

   - Valves shall be cleaned for LOX service and undergo all standard factory testing appropriate for cryogenic pressure-control valves. Test results and cleanliness certification shall be included with delivery.
   - The supplier shall provide drawings, test reports, material certifications, cleaning certificates, and any special tools or soft-goods kits required for maintenance.
   - Valves shall be delivered fully assembled, cleaned, bagged, and ready for installation. All supporting documentation must accompany the shipment.
   - Acceptance will occur upon verification that the delivered valves match the technical data sheet, meet cleanliness and testing requirements, and include all required documentation.

   The estimated delivery is 32 weeks and the estimated cost is [redacted].

4. **<u>FAR 6.104-1(a)(4) – An identification of the statutory authority permitting other than full and open competition:</u>**

The statutory authority permitting other than full and open competition is 10 U.S.C. 3204(a)(1), as implemented by FAR 6.103-1 Only one responsible source and no other supplies or services will satisfy agency requirements.

5. **<u>FAR 6.104-1(a)(5) – A demonstration that the proposed contractor's unique qualifications or the nature of the acquisition requires use of the authority cited:</u>**

The rationale supporting the use of 10 U.S.C. 3204(a)(1) is that Gosco Valves is the only responsible source capable of providing the specific two-stage dual-ball Liquid Oxygen (LOX) valve design required to meet NASA Stennis Space Center's safety, compatibility, and performance needs for throttling high flow liquid oxygen at pressures typically experienced in ground based, component level rocket propulsion testing.

[redacted]

Gosco is the sole manufacturer of the required two stage dual-ball cryogenic valve with the material properties, internal geometry, and 8,500 psig performance rating originally specified in the LOX_PCV_SOW and the multi-stage LOX PCV data sheet. No other known vendor produces a functionally equivalent dual-ball assembly or can replicate the proprietary internal sealing, ball-rotation, and throttling characteristics required to safely interface with the E-1 Test Stand's highly unique LOX system. Substituting a different valve supplier would require complete system reanalysis, oxygen compatibility retesting, and requalification, incurring significant cost and schedule impact.

The two valves will be installed at the E-1 test stand, where system controls, actuator interfaces, and flow-control algorithms have already been engineered specifically around the Gosco dual-ball design characteristics. Introduction of a valve built by a different manufacturer would require redesign of these interfaces, reevaluation of hazard controls, and recharacterization of response and controllability originally developed to mitigate R-1543. NASA SSC would incur a significant cost and schedule impact if it were required to consider a different valve type for this highly unique and complex type of testing. Estimates for cost range from $250-$500k, while estimates for schedule impact could be longer than a year.

Gosco is the only known manufacturer to possess the proprietary design authority and manufacturing capability needed to deliver hardware compliant with NASA SSC's material compatibility and performance requirements.
Accordingly, Gosco Valves is the only responsible source capable of meeting NASA's requirements, and full and open competition is not feasible.

6. **FAR 6.104-1(a)(6) – A description of the efforts made to ensure that offers are solicited from as many potential sources as practicable, including whether a notice was or will be publicized as required by Part 5 and, if not, which exception under part 5 applies:**

A notice to the Government Point of Entry (GPE) website (Sam.gov) was published on March 16, 2026 and closed on March 31, 2026, in accordance with FAR Subpart 5.2. This posting informed potential sources of NASA's intent to award this sole-source Purchase Order to Gosco Valves. The results of this synopsis are summarized in Section 10 below.

7. **FAR 6.104-1(a)(7) – A determination by the contracting officer that the anticipated cost to the Government will be fair and reasonable:**

The Contracting Officer's signature on this document indicates that the Contracting Officer has determined that the anticipated cost to the government will be fair and reasonable. The Contractor must be required to submit a proposal to be evaluated and negotiated by the Government. Prior to execution of the contractual instrument, a proposal analysis will be performed. The proposal analysis will ensure that the final agreed-to price for the contract action is fair and reasonable, in accordance with FAR Part 15. The CO will utilize analysis techniques such as published price lists, other than certified cost or pricing data and comparison to the Government estimate. Should there be any major discrepancies in cost elements, the government will request the offeror to submit cost information concerning that element. Additionally, proposed pricing may be compared to other similar types of work as well as the material components compared to the costs of equivalent, commercially available items.

8. **FAR 6.104-1(a)(8) – Description of the market research conducted, and the results, or a statement of the reasons market research was not conducted (e.g., urgent, and compelling requirement):**

Market research was conducted through engagement with NASA technical personnel, industry knowledge surveys, prior procurement history, and review of commercially available LOX valve technologies. This research determined that the required two-stage, dual-ball, high-pressure LOX valve is not offered by any known valve manufacturer other than Gosco Valves.

The technical requirements for this procurement, specifically the dual-ball cryogenic architecture, 8,500-psig operating class, and the associated throttling and safety characteristics are unique and not met by conventional LOX valve designs available on the commercial market. Industry manufacturers of cryogenic valves typically produce globe-style, plug-style, or single-ball control valves; however, none were identified that

provide the multi-stage dual-ball configuration required for NASA SSC's LOX system. No alternative vendor was found to produce an equivalent design or to manufacture a valve with comparable ignition mitigation features, internal geometry, or material configuration suitable for substitution.
Discussions with engineering and procurement personnel indicate that no competitive sources have historically supplied this type of valve to NASA or other propulsion test organizations. A notice of sole-source intent was posted publicly to determine if any additional sources could meet the requirement. At the time of this justification, no vendors have identified themselves as capable of producing a technically compliant, form-fit-function-equivalent dual-ball LOX valve meeting the performance, safety, and integration needs of the E-1 facility.

Based on the results of this market research, NASA SSC has determined that Gosco Valves is the only known source capable of providing the required valve design. No reasonably available alternatives were identified that meet the Government's minimum needs.

9. **FAR 6.104-1(a)(9) – Any other facts supporting the use of other than full and open competition:**

   See Section 5, paragraph 4.

10. **FAR 6.104-1(a)(10) – A listing of the sources, if any, that expressed an interest in writing in the acquisition:**

    A notice of NASA's intent to award this sole-source action was synopsized on the GPE website (Sam.gov) per FAR Subpart 5.2 (See Section 6 above). NASA received no responses from industry.

11. **FAR 6.104-1(a)(11) – A statement of actions, if any, the agency may take to remove or overcome any barriers to competition before any subsequent acquisition for the supplies or services required:**

    The Agency will continue to examine the market in the future for alternative solutions or new sources before executing any subsequent acquisitions for the same requirements.

Attachments:

Statement Of Work (80SSC026R0006_LOX_PCV_SOW)
Data Sheets (80SSC026R0006_LOX_PCV_Data_Sheets)