Source Selection Statement
Liquid Oxygen (LOX) Service Centrifugal Pumps
Solicitation Number: NNS09ZDA004R
April 28, 2010

A. Procurement History

The NASA John C. Stennis Space Center (SSC) located in Hancock County, MS, has a need for Liquid Oxygen (LOX) Service Centrifugal Pumps Indefinite Delivery/Indefinite Quantity IDIQ contract with a minimum quantity of 2 pumps and a maximum quantity of 26 pumps. Contract value is a NTE of $2,554,738.00. Contract length is expected to be 2 years. Specific projects will be defined in each of the subsequently issued delivery orders. The work to be performed under this contract consists of designing and delivering LOX pumps to NASA Stennis Space Center. The purchase of the LOX pumps is in accordance with the American Recovery and Reinvestment Act of 2009. The LOX pumps are crucial to the LOX barges. Significant delays could incur very high delay cost and put the overall testing schedule in jeopardy.

A presolicitation informational synopsis/sources sought was posted on March 03, 2010 on the NASA Acquisition Internet Service (NAIS) Business Opportunities and Federal Business Opportunities (FedBizOps) websites. The Final Request for Proposal was released March 17, 2010. Questions and answers were posted to NAIS and FedBizOps on April 12, 2010. Proposals were due no later than April 19, 2010. On April 23, 2010, an amendment was issue to responsive offerors who submitted a proposal in response to the solicitation; the amendment changed the delivery period for delivery order 001.

This procurement is being conducted utilizing Best Value Selection (BVS), which seeks to select an offer based on the best combination of price and qualitative merit (including Technical Compliance, Schedule, Relevant Experience, and Past Performance) of the offers submitted. BVS predefines the value characteristics that will serve as the discriminators among offers and is based on the premise that, if all offers are of approximately equal qualitative merit, award will be made to the offeror with the lowest evaluated price (fixed-price contracts). However, the Government will consider awarding to an offeror with higher qualitative merit if the difference in price is commensurate with added value. Conversely, the Government will consider making award to an offeror whose offer has lower qualitative merit if the price differential between it and other offers warrant doing so.

Award will be made to the responsible Offeror whose proposal is responsive, and offers the best value to the government. The following non-priced evaluation criteria will be used: Technical Compliance, Schedule, Relevant Experience, and Past Performance. Technical Compliance, Schedule, Relevant Experience, and Past Performance are approximately equal. **When combined, these characteristics (Technical Compliance, Schedule, Relevant Experience and Past Performance) are significantly more important than Price.** Award will be based on the best overall value to the Government. The Government reserves the right to award to other than the lowest Offeror. This process will result in the best value by allowing the Government to attain the higher quality of services if it is determined to be the best value.

The rating method that will be utilized consist of the following:

I. Technical Compliance will receive one of the following efficiency ratings:

Each offerors technical compliance information will be evaluated to determine the effectiveness of the proposed solution. The evaluation team will assign a rating between 0 and 80.

II. Schedule will receive one of the following ratings:

Each offerors proposed schedule will be evaluated to determine if the schedule meets the delivery requirements. The evaluation team will assign a rating between 0 and 20.

III. Relevant Experience will receive one of the following adjective ratings based on the evaluation results from the relevant experience narrative received:

RATING	**DEFINITION**	**STANDARD**
Low Risk	Little doubt exists, based on the offeror's experience; that the offeror can satisfactory perform this kind of work.	Extensive experience in projects of similar size, scope, complexity.
Moderate Risk	Some doubt exists, based on the offeror's experience, that the offeror can satisfactorily perform this kind of work.	Limited experience in projects of similar size and scope or extensive experience as the primary subcontractor for projects similar in size and scope.
High Risk	Significant doubt exists, based on the offeror's experience, that the offeror can satisfactorily perform this kind of work.	Very little experience in projects of this kind.

IV. Past Performance will receive one of the following adjectival ratings:

RATING	DEFINITION	STANDARD
Outstanding	Substantially exceeds requirements. Entirely favorable past performance. No Major Breach of Safety within the past three years	A significant majority of sources of information are consistently firm in stating that the offeror's performance was superior and that they would unhesitatingly do business with the offeror again. Complaints are negligible, or unfounded. The offeror has no record of criminal conduct, civil fraud, or negligence, or the record is old and the offeror has demonstrated by more than recent performance that corrective action has made the likelihood of such conduct in the future highly improbable. A major breach of safety is an act or omission of the contractor that consists of an accident, incident or exposure resulting in a fatality or mission failure; or in damage to equipment or property equal to or greater than $1 million dollars or any "willful" or "repeat" violation cited by OSHA or a state agency operating under an OSHA approved plan within the past three years.
Above Average	Somewhat exceeds requirements. More favorable than unfavorable past performance	Most sources of information state that the offeror's performance was good, better than average and that they would willingly do business with the offeror again. Complaints, though perhaps well founded, are few and relatively minor. The offeror has no record of criminal conduct, civil fraud, or negligence, or the record is old and the offeror has demonstrated by more recent performance that corrective action has made the likelihood of such conduct in the future highly improbable.
Neutral	No record exists or the contractor has no past performance to report.	
Satisfactory	Meets requirements. Inconclusive past performance record.	Sources of information are roughly divided over the quality of the offeror's performance. While some state that they would do business with the offeror again, others are doubtful or would not. Complaints are balanced by reports of good work. The offeror has no record of criminal conduct, civil fraud, or negligence, or the record is old.
Marginal	Barely meets requirements. More unfavorable than favorable past performance	Many sources of information make unfavorable reports about the offeror's performance and either express serious doubts about doing business with the offeror again or states that they would refuse to do so. However, there are some favorable reports, and some sources of information indicate that they would do business with the offeror again. There are many significant, serious, and well-founded complaints, but there are some reports of good performance. The offeror may have been indicted, pled guilty, or may have been found guilty on matters of criminal conduct, but issues are unresolved, relatively minor, or do not reflect a company wide or managerial pattern of wrongdoing. The offeror may have lost civil suits for fraud or negligence, but there is no company wide or managerial pattern of fraudulent, negligent, or criminal conduct.
Unsatisfactory	Does not meet requirements. Entirely unfavorable past performance	A significant majority of sources of information are consistently firm in stating that the offeror's performance was entirely unsatisfactory and that they would not do business with the offeror again under any circumstances. Customer complaints are substantial or numerous and are well founded, or, although not debarred or suspended, the offeror is under indictment or has been convicted of criminal conduct, or has been found liable for fraud or negligence. The offeror either has presented no persuasive evidence of having taken appropriate corrective action that will guard against such conduct in the foreseeable future, or it appears unlikely that the corrective action will be effective.

The solicitation closed on April 19, 2010 and the initial review was conducted on the proposals received.

B. Findings

A total of two (2) proposals were received, in response to this Request for Proposal (RFP), from the following offerors: Barber Nichols, Inc (BNI) and Airco Cryogenic Division (ACD). In accordance with the evaluation process outlined in the RFP, all offerors were evaluated in accordance with step one. All offerors provided a responsive proposal.

The initial evaluation of the value characteristics consisted of: Technical Compliance, Schedule, Relevant Experience, Past Performance, and Price. Consistent with step two of the evaluation process identified in the solicitation the Government determined to make selection and award without discussions.

The evaluation team reviewed the proposal from each offeror the results are noted below as follows:

EVALUATION OF PROPOSAL REVISIONS

TECHNICAL COMPLIANCE:
Offerors were required to provide detailed information that showed the design and capability of the proposed LOX Service Centrifugal Pumps. The technical evaluation consisted of: Complete drawings; Detail narrative of cleaning and certifications; Parts list and procedures; Flow curve; Complete BOM; Documentation describing the extent the proposed design is used within NASA or industry; Documentation supporting the proposed use non-metallic material and lubricants; Periodic maintenance required; Instrumentation provided or required Pump performance curve; Complete description of the motor; List of purges, instrumentation, bearing heaters and locations; Identification of maximum loads; Complete information as to the size and type of motor bearings; Installation, operating, maintenance and repair instructions for the pump/motor and; Description of warranty.

BARBER NICHOLS Option 1(a)
This option was evaluated and determined unacceptable. The pumps proposed in this option are pumps that were developed for Kennedy Space Center under a SBIR. Verification was made concerning the status of the pumps and it was noted that they are not available for Stennis Space Center.

BARBER NICHOLS Option 1(b)
Technical proposal describes a pump arrangement that has a conspicuous number of pressure/mechanical interfaces that require precision seals, each of which represents a potential failure mode. The arrangement appears to be less robust than more conventional cryogenic pump designs considered for this application. The proposal indicates that the manufacturer should make most repairs. Based on the proposed solution provided BNI technical compliance rating is 60 out of 80.

ACD
The proposal identifies in detail a robust, simple cryogenic pump arrangement common to the cryogenic industry. The original pump design was introduced in 1964. Modest improvements have been made over that time such as improved mechanical seals and gasket materials but the basic design remains due to its reliability and simplicity. Based on the proposed solution provided ACD technical compliance rating is 75 out of 80.

SCHEDULE:
Each offerors proposed schedule was evaluated to determine if the schedule meets the delivery requirements as outlined in Performance Work Statement (attachment 8, Delivery Order #1). The required delivery schedule was initially two LOX pumps were to be delivered within thirteen (13) weeks after award. On April 23, 2010 an amendment was issued to only the responsive offerors that submitted a proposal; offerors were allowed to revise its bid. The new delivery schedule is two LOX pumps are to be delivered within twenty (20) weeks after award.

BARBER NICHOLS
BNI's initial delivery schedule did not meet the schedule requirements of the solicitation. BNI did not provide a revised delivery schedule. Based on the delivery schedule proposed of 32weeks after award BNI schedule rating was 0.

ACD
ACD's initial delivery schedule did not meet the schedule requirements of the solicitation. ACD proposed a revised delivery scheduled, two LOX centrifugal pumps will be delivered in 20 weeks. ACD's schedule rating was 20.

RELEVANT EXPERIENCE:
All offerors were required to provide details addressing experience in design and manufacture of liquid oxygen centrifugal pumps in industry and aerospace applications.

BARBER NICHOLS
BNI provided evidence and examples of appreciable expertise in designing and manufacturing oxygen pumps. BNI provided a similar LOX pump design to Kennedy Space Center, however; the pump has no performance experience in oxygen. Documentation was provided for aerospace applications but was limited to dissimilar equipment. Based on the experience provided with similar pumps BNI's relevant experience was **High Risk**.

ACD
The Proposal included extensive documentation demonstrating ACD's expertise in cryogenic LOX pump design and manufacturing. Documentation showed approximately 75 pumps of similar size that have been manufactured and sold since 1991, some of which are still in service. ACD also provided data sheets that identified similar pumps in LOX service. These data sheets provided the types of pumps manufactured and purchase dates. Based on the experience provided with similar pumps ACD's relevant experience was **Low Risk**.

PAST PERFORMANCE:
Offeror's past performance on similar projects was evaluated to determine the quality of work previously provided and to assess the relative capability of the offeror to effectively accomplish the requirements of this contract. Past performance information was utilized to assess the extent to which contract objectives (including management, technical management, quality control, and other areas as addressed in attachment 7 of solicitation) have been achieved on comparable or related type work.

BARBER NICHOLS
Past performance for BNI includes relevant contracts performed within the last three years as required in the solicitation with values up to $11 million. Based on the information reviewed and gathered during the evaluation process, BNI was determined to have an overall **Outstanding** past performance rating.

> **Honeywell Aerospace Engines & Systems:** BNI is currently working a build to print contract that provides air turbine subassemblies. Honeywell rated BNI outstanding. Final contract prices exceed $11 million. BNI received 115 points out of a possible 126.

Air turbine assembles and LOX centrifugal pumps are similar in the fact that each has to be fabricated, assembled, and tested. Based on the information received BNI was rated overall **Outstanding**.

NASA, Kennedy Space Center: BNI redesigned LOX pump seals. NASA rated BNI outstanding. Final contract price $5,160.50. BNI received 119 points out of a possible 126. This reference is considered relevant because the proposed pump will require pump seals. Based on the information received BNI was rated overall **Outstanding**.

NASA, Kennedy Space Center: Barber Nichols provided past performance for an additional contract at Kennedi Space Center, however; the contract period of performance ended on May 1, 2006. Offerors were advised in the solicitation that past performance shall be limited to the three (3) most recent years (Attachment 5, 52.212-1(A)(IV)(1). Therefore, this reference was not evaluated.

NASA, Marshall Space Center: BNI is currently providing design, fabrication and test of LOX pumps. NASA rated BNI outstanding. Current contract price is $300,000. BNI received 121 points out of a possible 126. The period of performance for this contract started in October 2009. Based on the information received BNI was rated overall **Outstanding**.

ACD

Past performance for ACD includes relevant contracts performed within the last three years as required in the solicitation with values up to $1.2 million. Based on the information reviewed and gathered during the evaluation process, ACD was determined to have an overall **Outstanding** past performance rating.

Air Liquide: ACD has designed and built LOX centrifugal pumps both hydraulic and mechanical. ACD provides all ongoing service for the pumps after operation. Current contract value identified was $1.2 Million. Liquide rated ACD outstanding. ACD received 117 points out of a possible 126. Based on the information received ACD was rated overall **Outstanding**.

Gordon-Prill, Inc: ACD has designed and built three LOX centrifugal pumps. ACD also provides all service for the pumps after operation. Final contract value identified was $153,228. Gordon-Prill rated ACD outstanding. ACD received 56 points out of a possible 66; 126 points were not utilized because Gordon-Prill marked not applicable to the majority of the items. Based on the information received ACD was rated overall **Outstanding**.

Ranch Cryogenics: ACD has provided LOX centrifugal pumps. Ranch stated, they have worked with ACD over 20 years. The last purchase order was $60,000. Ranch rated ACD outstanding. ACD received 106 points out of a possible 126. Based on the information received ACD was rated overall **Outstanding**.

PRICE:
All offerors were required to provide price information for all CLIN's including options identified on the Standard form 1449. The Government evaluated each offeror's proposed price including all options for reasonableness to determine the best value to the Government. In accordance with the solicitation and FAR 15.404-1 (a)(1) the contracting officer is responsible for evaluating the reasonableness of the offered prices. The analytical techniques and procedures described in subject reference were utilized during the price analysis evaluation. Specifically FAR 15.404-1 (b)(2)(i) and FAR 15.404-1 (b)(2)(v) were used to determine price reasonableness of the proposed prices. During this review a comparison of proposed prices received in response to the solicitation was made.

BARBER NICHOLS
BNI's proposal was reviewed and evaluated as stated in the solicitation. BNI's price was considered reasonable. BNI submitted the 2nd lowest price proposal for delivery order 001. BNI also submitted the 2nd lowest price per LOX Service Centrifugal Pump. BNI offered a quantity discount. The more pumps purchased the less expensive the pump. Even if the Government purchases the mass quantity of pumps the price is still the 2nd lowest price per pump.

ACD
ACD's proposal was reviewed and evaluated as stated in the solicitation. ACD's price was considered reasonable. ACD submitted the lowest price proposal for delivery order 001. ACD submitted the lowest price per LOX Service Centrifugal Pump.

C. Source Selection Decision

With respect to the process and findings, the evaluation plan was followed and the evaluation of the proposals was fair, comprehensive, thorough and well-documented. I made my selection decision based on a comparative assessment of all proposals against all source selection criteria in the RFP.

Offerors	Technical Compliance Rating (Max 80)	Schedule Rating (Max 20)	Relevant Experience	Past Performance	Delivery Order 001 Price
Barber Nichols Option 1a	0	0	High Risk	Outstanding	$246,869.00
Barber Nichols Option 1b	60	0	High Risk	Outstanding	$396,052.00
ACD	75	20	Low Risk	Outstanding	$192,394.00

Before making my selection, I looked at the selection criteria to determine the importance of the price and non-priced factors. The solicitation prescribes that all four non-priced evaluation factors (Technical Compliance, Schedule, Relevant Experience, and Past Performance) are approximately equal. **When combined, these four value characteristics (Technical Compliance, Schedule, Relevant Experience and Past Performance) are significantly more important than Price.** Because the non-priced factors were significantly more important than Price, I first looked at all offerors ratings and compared the ratings to see who the highest rated offeror was. I noticed that based on the evaluation of the non-priced factors ACD received the highest ratings in all areas. Not only did ACD receive the highest ratings in all areas, its proposal was also the low price offer received. ACD's price for delivery order 001 was $203,658.00 lower than the 2nd lowest offer price submitted by BNI. In accordance with the RFP, I then looked further to see if a tradeoff would be in the best interest of the Government.

I further reviewed the ratings for each Offeror for any benefits or risk associated with each proposal. A comparison of the two offerors under technical compliance revealed that ACD's technical compliance rating of 75 was more than the rating received by BNI (60).

The technical proposal from ACD proposed a pump that has been in service since 1964 with moderate updates through the years. ACD's pump could meet the flow and head performance requirements at 3,380 rpm. ACD proposal showed the repair of the pump can be accomplished in place by SSC technicians with minimal training. In-place repair of the pump is accomplished by replacing three parts and does not entail precision alignment of any part. A complete parts list was provided that showed a simple arrangement with minimum parts typical of most cryogenic pumps. The cost of the spare kit is minimal.
BNI proposed a technical solution for a pump that could meet the flow and head performance requirements, however; the pump would have to operate at speeds above 3,600 rpm. The Pump dimensions would require NASA to fabricate new piping spools connecting the proposed pump. The drawings and procedure provided facilitate in-place repair and provides repair instructions,

however; the proposal recommends that repairs be made by BNI. The cost of the spare kit is considered high. The drawings and parts list illustrates that the proposed pump has a high number of metallic parts and nonmetallic seals. This arrangement has a high number of potential failure modes.

In the past performance criteria, I noted that ACD and BNI was rated "Outstanding." As such, there were no discriminators in this value characteristic.

In Schedule, ACD received the max points of 20. BNI rating was 0. The delivery proposed by BNI is outside of the required schedule.

In relevant Experience, ACD received a rating of "low risk". ACD provided evidence of similar experience and demonstrated that it has the required skills needed to satisfactorily perform this requirement. BNI received a rating of "high risk". It did not provide evidence of adequate experience needed and significant doubt exists, based on the offeror's experience, that the offeror can satisfactorily perform this kind of work, specifically dealing with LOX centrifugal pumps.

The solicitation stated that the four non-priced items were approximately equal. When combined these four value characteristics (Technical Compliance, Schedule, Relevant Experience, and Past Performance) are approximately equal to price. ACD ratings were: Technical Compliance (75); Schedule (20); Relevant Experience (Low Risk) and; Past Performance (Outstanding). BNI ratings were: Technical Compliance (60); Schedule (0); Relevant Experience (High Risk) and; Past Performance (Outstanding). ACD also proposed the low price offer. A review and comparison of the price proposals offered by ACD and BNI (option 1b) for delivery order 001, indicate a price difference of $203,658.00, between the proposals. After carefully reviewing the evaluation and findings for both proposals, I could not determine any significant benefit or advantage to the Government that would warrant a trade-off between ACD and BNI that would allow award to BNI.

Based on my deliberations outlined above, I conclude that ACD's proposal is the most advantageous to the Government. ACD's technical compliance rating of 75, Schedule rating of 20, low risk relevant experience rating, and outstanding past performance, coupled with its lower price, amply demonstrate its ability to successfully complete the contract requirements while providing the overall best value to the Government. Accordingly, I select the offer submitted by Airco Cryogenic Division (ACD) for award of the Liquid Oxygen (LOX) Service Centrifugal Pumps IDIQ contract for a total contract value NTE $2,554,738.00 with a first delivery order for $192,394.00 at Stennis Space Center.

Marvin L. Horne
Contracting Specialist

Approve / ~~Disapprove~~

Robert Harris
Contracting Officer