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Comptroller General
of the United States

United States Government Accountability Office
Washington, DC 20548

Decision

Matter of: General Electrodynamics Corporation

File: B-298698; B-298698.2

Date: November 27, 2006

Paul J. Seidman, Esq., and David J. Seidman, Esq., Seidman & Associates, for the protester.
Vera Meza, Esq., Department of the Army, for the agency.
Kenneth Kilgour, Esq., and Christine S. Melody, Esq., Office of the General Counsel, GAO, participated in the preparation of the decision.

DIGEST

Under solicitation for digital aircraft weighing scales, requirement that the scales not utilize hydraulic components or mechanical load sensing devices, which excludes protester's product, is not unduly restrictive of competition where the record supports the reasonableness of the agency's determination that scales utilizing fully electronic load cells are necessary to meet its needs.

DECISION

General Electrodynamics Corporation (GEC) protests the terms of request for proposals (RFP) No. W58RGZ-06-R-0473, issued by the Army Aviation and Missile Systems Command (AMSAM), Army Material Command, Department of the Army, for digital aircraft weighing scales (DAWS). GEC argues that the RFP's requirement that the scales not utilize hydraulic components or mechanical load sensing devices is unduly restrictive of competition.

We deny the protest.

On February 22, 2006, AMSAM synopsized solicitation No. W58RGZ-06-R-0185 on the Federal Business Opportunities (FedBizOpps) website. On March 9, the Army amended the notice to advise that "the proposed contract action is for supplies or services for which the Government intends to solicit and negotiate with one source under authority of [Federal Acquisition Regulation (FAR) §] 6.302." Agency Report (AR), Tab J2, Modification of Presolicitation Notice for 0185, at 1. The notice identified Intercomp Company Inc. as the intended sole-source contractor, but stated that "[i]nterested persons may identify their interest and capability to respond to the

requirement or submit proposals . . . [and that] all proposals received within forty-five days . . . after date of publication of this synopsis will be considered by the government." Id. GEC submitted a response to the synopsis.

The Army issued the solicitation on April 20, including a purchase item description (PID) requiring the purchase of an Intercomp brand DAWS. GEC protested to our Office on May 9, alleging that the Army improperly used other than full and open competition, that the brand-name only PID was unduly restrictive of competition, and that the Army failed to conduct market research and advance procurement planning. The Army canceled the proposed sole-source solicitation and stated that a new solicitation with performance specifications would be issued to provide for full and open competition. We dismissed the protest on May 19.

On May 26, the Army posted a new synopsis of its requirement on FedBizOpps and, on July 28, issued the subject solicitation, calling for award of a 5-year indefinite-delivery/indefinite-quantity contract for DAWS. The scales will be used worldwide to weigh aircraft within the Army inventory, in and out of battle conditions, to ensure that the weight of the aircraft does not exceed safe limits. The PID includes several system requirements, among them ¶ 3.3, which states that the "scale shall not utilize any hydraulic components or mechanical load sensing devices." AR, Tab E3, PID, at 1. GEC requested removal of PID ¶ 3.3 from the solicitation; the contracting officer denied the request. GEC then filed this protest on August 22.[1]

GEC argues that the solicitation is unduly restrictive because ¶ 3.3 of the PID excludes scales with hydraulic or mechanical load sensing devices. In response, the agency maintains that the restriction in ¶ 3.3 properly reflects its requirement for fully electronic scales.[2] In support of its position, the agency argues that scales

[1] Both Intercomp and GEC submitted proposals under the RFP. GEC later withdrew its proposal, stating that the scale that it had offered would have been a modified version of one of its off-the-shelf scales, and that due to an increase in orders it no longer had the time to meet the solicitation's delivery schedule. GEC asserts it should be permitted to furnish its hydraulic technology-based weigh scales under the RFP.

[2] The critical component of a weigh scale's design is the load cell, a mechanism that converts a force acting on it into a measurable electrical output. Load cells are commonly categorized as pneumatic, hydraulic, or electronic; pneumatic and hydraulic are two types of mechanical load cells, and there are several types of electronic ones. AR, Tab Q, Assessment of Load Cell Requirements in the Digital Aircraft Weighing Scale, at 2. Because pneumatic load cells have a relatively low response speed and require clean, dry regulated air or nitrogen, id. at 3, which clearly renders them inappropriate for use under the conditions here, the exclusion of load cells utilizing hydraulic components is essentially a requirement for electronic load cells.

utilizing fully electronic load cells are: easier to calibrate; more reliable and easier to maintain; as the more recent design, are the trend in weighing scale technology, and therefore have less risk of losing supportability due to technological obsolescence; and are better suited to the extremes of geography and the treatment that the scales are likely to receive from Army soldiers in the field. The protester disputes each of these claims and asserts that the PID is unduly restrictive of competition.

A contracting agency has the discretion to determine its needs and the best method to accommodate them. Parcel 47C, LLC, B-286324, B-286324.2, Dec. 26, 2000, 2001 CPD ¶ 44 at 7. In preparing a solicitation, a contracting agency is required to specify its needs in a manner designed to achieve full and open competition, and may include restrictive requirements only to the extent they are necessary to satisfy the agency's legitimate needs. 10 U.S.C. § 2305(a)(1)(B) (2000); Innovative Refrigeration Concepts, B-272370, Sept. 30, 1996, 96-2 CPD ¶ 127 at 3. Where a protester challenges a specification as unduly restrictive, the procuring agency has the responsibility of establishing that the specification is reasonably necessary to meet its needs. The adequacy of the agency's justification is ascertained through examining whether the agency's explanation is reasonable, that is, whether the explanation can withstand logical scrutiny. Chadwick-Helmuth Co., Inc., B-279621.2, Aug. 17, 1998, 98-2 CPD ¶ 44 at 3. A protester's mere disagreement with the agency's judgment concerning the agency's needs and how to accommodate them does not show that the agency's judgment is unreasonable. See Dynamic Access Sys., B-295356, Feb. 8, 2005, 2005 CPD ¶ 34 at 4. Where, as here, a requirement relates to national defense or human safety, an agency has the discretion to define solicitation requirements to achieve not just reasonable results, but the highest possible reliability and/or effectiveness. Vertol Sys. Co., Inc., B-293644.6 et al., July 29, 2004, 2004 CPD ¶ 146 at 3.

The record contains many competing claims about load cell performance. The protester asserts that, unlike the agency, it has provided empirical evidence to support certain of its allegations. Apparently recognizing the lack of an empirical study that would support its position concerning the relative performance of hydraulic and electronic load cells, on August 9 an agency official with extensive knowledge of and participation in the DAWS procurement sent an e-mail message to an Air Force Metrology and Calibration (AFMETCAL) Program employee who was a DAWS mechanical engineer. The e-mail stated in part:

> I was wondering whether a rigorous study had been accomplished. . . . comparing the suitability of the two load cell technologies in platform scale applications for aircraft weighing operations.
>
> If you are not aware of a study, then a brief memo describing your experiences with the technologies would also be useful.

Response to Supplemental AR (SAR), exh. 27, Agency e-mails, at 3. We assume that no written response to this inquiry was received, however, because the agency has provided no such document in any of its filings responding to the protest.

In contrast, the protester offers as empirical evidence slides from an AFMETCAL presentation titled "USAF Metrology & Calibration Program: Platform Scales Analysis," dated November 2004. Protester's Comments to AR, Tab 8. The protester asserts that in this presentation the Air Force "determined GEC scales using hydraulic technology are easier to calibrate than Intercomp Scales." Protester's Response to AR, at 3. We agree that certain slides can reasonably be interpreted to show that the protester's scales are easier to calibrate than Intercomp's. See Slides, p. 12 ("Corner adjustments have increased calibration time from about 2 to 5 hours per platform scale (Intercomp)."); p. 18 ("Added corner check/adjustment to procedures. Mandatory for Intercomp Scales. Only performed on GEC Scales when calibration check fails."). The agency asserts that the scales in the presentation were of a different capacity than those being procured and that the data would not accurately portray what the performance of the scales would be today.

The agency has not challenged that fact that these slides appear to support the conclusion that in certain circumstances GEC's scales with hydraulic load cells outperformed Intercomp's scales with electronic load cells with regard to calibration. The slides in this presentation contain data for scales in actual use by the military, and the fact that the scales are of a different capacity than those being procured is not relevant. (The agency has not asserted that electronic load cells suit its needs better than hydraulic load cells only for certain weights.) The fact that the data is from 2004 makes it, relative to the record as a whole, fairly current. Moreover, these slides were produced by the military in advance of this protest and not in anticipation of it and appear to be objective, if limited, evidence that GEC's scales may be easier to calibrate than Intercomp's.[3] On the record before us, we find unpersuasive the agency's argument that it is reasonable to exclude scales utilizing hydraulic load cells from consideration because scales utilizing electronic load cells are easier to calibrate.

Nevertheless, the agency has other bases for excluding hydraulic load cells which justify the restriction. In this connection, the agency also asserts that scales with

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[3] The protester argues that the AFMETCAL slides also show that GEC's scales are more reliable, because they purportedly remain calibrated longer. We agree that some of the slides can be interpreted to show that GEC scales maintain their calibration for longer periods. See Slides, pp. 14, 16. The protester's reference to reliability is different from the concept as it is used by the agency here, however; as discussed further below, the agency's position regarding the scales' reliability refers to the length of time that scales operate properly without unscheduled downtime due to malfunctions, not to the length of time between scheduled calibrations.

hydraulic load cells and mechanical load sensing devices are less reliable and more difficult to maintain than fully electronic load cells. Contracting Officer's Statement at 3. That determination was made during the early stages of the DAWS reprocurement planning by an AMCOM technical representative. In a memorandum for the record dated July 29, 2005, the technical representative stated:

> Scales based upon hydraulics usually utilize bags of a fluid or a piston (normally oil based). . . . Problems that arise with this technology are that these units have a tendency to leak with age or can burst with overloading the scale. They furthermore have more moving parts than the fully electronic scales that are utilized in more recent designs or dirt can get imbedded in them and cause friction. This comes into play when reliability is being considered. Cleaning or calibration is normally more tedious since the scale is normally required to be taken apart and adjusted or thoroughly cleaned compared to an electronic scale . . .

AR, Tab M, Memorandum for the Record.

The agency argues that because hydraulic load cells contain fluid, the scales are susceptible to leakage, and that diminishes their reliability and maintainability. The protester does not challenge the agency's assertion that a load cell that is susceptible to leakage would be less reliable and harder to maintain. Rather, the protester argues that it hermetically seals its load cells to preclude leakage and "provides mechanical protection to preclude overloads." Response to AR, at 3. The agency asserts, however, that even hermetically sealed load cells must have mechanical and electrical interfaces to the outside of the load cell which are subject to failure. Moreover, the agency argues that, while the protester has offered no evidence in the way of patents for its claimed design enhancements that would end cell leakage, the special design features necessary to prevent hydraulic load cell failures resulting in leakage add complexity to the design of GEC's already more complex load cell. This "significant additional design complexity," claims the agency, "results in more potential failure modes than the fully electronic load cell and increases reliability risk." Combined Agency Response to Supplemental Protest and Comments on AR (Combined Response), exh. 2, Statement of Product Manager for Aviation Ground Support Equipment, at 7. In any event, the contrast that the agency draws between the two types of load cells is this: while it can be stated with absolute certainty that electronic load cells cannot leak, it cannot be stated with absolute certainty that hydraulic load cells will never leak. Id. at 8. Thus, the agency asserts that in the absence of some clear advantage of hydraulic load cells over fully electronic load cells that outweighs the inherent reliability and maintainability risks of hydraulic load cells, the agency reasonably decided to eliminate hydraulic load cells from consideration. We agree.

The agency also asserts that, "when performing technology tradeoffs for performance, reliability, maintainability, and affordability," it must consider "the extremes of environmental design requirements," the skill level and experience of

equipment operators, and the often harsh operating conditions for the Army. Id. at 6. "Because of the uncertainty regarding the magnitude, direction, and frequency of [] additional forces transmitted to the load cells in Army usage," the agency argues, "the best way to mitigate the risk of load cell failure under expected field conditions is to consider scales using only the most robust load cell technologies." Id.

The agency argues that the protester's own patent for a "Highly Accurate Weighing System" supports the agency's assertion that electronic load cells are more suited for combat situations. Specifically, the GEC patent states that it is "an improved weighing system which produces highly accurate measurements, which can be successfully operated by lesser skilled personnel, and which minimizes the expense of maintaining the system in an operable condition." Combined Response, supra, attach. 4, GEC Patent, at 2. This "improved weighing system" includes a fully electronic load cell. The protester does not challenge the agency's description of its patent; the protester instead asserts that electronic cells have their own shortcomings, including susceptibility to moisture and electrical surge damage. In fact, the record appears to show that the advantages of non-electronic cells in these areas--resistance to moisture and electrical surge damage--make non-electronic cells preferable for applications such as food processing plants and truck weigh stations. See Response to Supplemental AR, exh. 30. But the protester does not argue, and we see no basis to assume, that food processing plants and truck weigh stations are comparable to battlefields and that consequently the same load cell types preferable for one application would likewise be preferable for the other. We conclude that the record here, including the claim in the protester's own patent, supports the agency's conclusion that the design of electronic load cells is more suitable for combat situations.

Further, the agency argues that its decision to restrict the procurement to scales utilizing fully electronic load cells reflects the current industry standard. AR, Tab Q, at 3-5. An agency properly may rely on an applicable industry standard to demonstrate the reasonableness of the agency's requirements. RMS Indus., B-247233, B-247234, May 1, 1992, 92-1 CPD ¶ 412 at 3. The agency also asserts that because fully electronic load cells are a more recent design than hydraulic load cells and are the trend in weighing technology, the prospects for future supportability are enhanced if the agency procures electronic cells. The agency offers many industry references in support of these claims. See, e.g., AR, Tab Q3, at 1 ("[S]train gage load cells [one type of electronic load cell] dominate the weighing industry."); Tab Q9, at 1 ("The vast majority . . . of weighing applications depend on the strain gage load cell."); Tab Q10, at 2-3 ("According to survey results, industrial weighing systems are now overwhelmingly electronic. . . . Reasons to convert mechanical weighing systems remain compelling. Electronic scales are more accurate, repeatable, and less susceptible to errors caused by environmental factors such as vibration and shock.").

Again, the protester does not challenge the premise that the agency may reasonably prefer a load cell that enjoys a larger market share and utilizes newer technology.

Rather, the protester counters the agency's claim with an article endorsing the protester's technology. That article quotes a GEC corporate officer and features two photographs of GEC scales and none from any other manufacturer. The article, which carries no by-line, runs beside a large advertisement for GEC scales. We need draw no inferences regarding the credibility of this article's content; the agency has assembled a large array of material from various sources that identify the superior market share of electronic cells and that the trend is away from hydraulic load cells to electronic ones. We think that the agency has reasonably supported its claims that electronic cells are the standard throughout the industry, in part because they are a newer technology.

Inasmuch as the scales will be used in combat to ensure the safe operation of military aircraft, it is reasonable for the agency to place a premium on reliability and maintainability, see Vertol Sys. Co., Inc., supra, at 3, a superior characteristic of electronic load cells. While the agency has not shown the reasonableness of all of its assertions regarding fully electronic load cells, we find that the agency's decision to specify such load cells, on the whole, is reasonable.

GEC further alleges that the agency failed to conduct adequate market research before proceeding with this procurement. However, our review of the record shows that the agency's market research, which included discussions with technical experts and representatives within AMCOM, other Army and Department of Defense agencies, as well as commercial manufacturers, including GEC and Intercomp, see Tab K, was appropriate to the circumstances present here. See FAR § 10.001(a)(2). While the record of the agency's market research for this solicitation is nearly identical to the market research for the canceled solicitation, the requirements are quite similar, as well. Further, the agency employee who conducted the market research asserts that the research was performed a second time, in advance of the second solicitation, using the same sources.

Finally, the protester asserts that the solicitation constitutes an improper de facto sole source procurement. This claim is belied by the fact that, in addition to the awardee, the protester itself submitted a proposal under the current solicitation which it later withdrew. See Wyeth-Ledere Vaccines and Pediatrics, B-274490, B-274490.2, Dec. 13, 1996, 96-2 CPD ¶ 229 at 8 n.5. That proposal is evidence that the protester can compete, even though it may be inconvenient for it to do so on the agency's terms. Staveley Instruments, Inc., B-259548.3, May 24, 1995, 95-1 CPD ¶ 256 at 7. Accordingly, we find there is no merit to the assertion that the agency conducted a de facto sole-source procurement or that the procurement results from a lack of advance planning by the agency.

The protest is denied.

Gary L. Kepplinger
General Counsel