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**Comptroller General  
of the United States**

**United States Government Accountability Office  
Washington, DC 20548**

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## Decision

**Matter of:** Armorworks Enterprises, LLC

**File:** B-400394; B-400394.2

**Date:** September 23, 2008

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Christopher R. Yukins, Esq., Kelly Busby, Esq., and Jill Newell, Esq., Arnold & Porter LLP, for the protester.

Major Walter Dukes and David Scott, Esq. U.S. Army Materiel Command, for the agency.

Edward Goldstein, Esq., and Christine S. Melody, Esq., Office of the General Counsel, GAO, participated in the preparation of the decision.

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### DIGEST

1. Protest allegations challenging agency's methodology for testing body armor are dismissed as untimely where the alleged problems were apparent from the face of the solicitation and the protester failed to raise its concerns prior to the time set for receipt of proposals.

2. To be timely, challenge to solicitation amendment, issued after initial proposals had been submitted and which did not provide offerors with an opportunity to submit revised proposals, should have been filed within 10 days of the issuance of the amendment.

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### DECISION

Armorworks Enterprises, LLC protests the exclusion of its proposal from the competitive range under request for proposals (RFP) No. W91CRB-07-R-0041, issued by the Army Materiel Command (AMC) for body armor. The protester challenges the agency's testing methodology and the testing failures of its body armor.

We dismiss the protest in part and deny it in part.

The RFP, issued on May 25, 2007, contemplates the award of multiple fixed-price, indefinite-delivery/indefinite-quantity (ID/IQ) contracts for Interceptor Body Armor Enhanced Small Arms Protective Inserts (ESAPI), as well as "the next generation of hard ballistic inserts" for Interceptor Body Armor, X Small Arms Protective Inserts

(XSAPI).<sup>1</sup> These ESAPI and XSAPI are essentially plates, which are placed inside vests worn by U.S. combat troops, and are designed to protect them against small arms gunfire.

In order to be eligible for award, proposed body armor designs (referred to as Preliminary Design Models (PDM)) had to first pass extensive ballistics testing conducted by AMC's Aberdeen Test Center.<sup>2</sup> The methodology and procedures for testing the different types of body armor were described in purchase descriptions (PD) referenced in the solicitation.<sup>3</sup> Pursuant to the PDs, body armor plates were subjected to various stresses designed to test the durability of a proposed design, to include, among others: impact, oil soak, diesel soak, saltwater soak, weathering, extreme temperatures, and extreme altitude. AMC also tested a number of "ambient" or control plates for each design. After a plate was subjected to a particular durability test (e.g., impact testing or soaking the plate in diesel fuel), AMC conducted ballistic testing, which involved a gunner firing shots at the plate as the plate rested in a protective jacket on a clay testing block (clay substitute for soldier's body mass).

Several different types of projectiles, referred to as "threats," were utilized in the ballistic testing of the PDMs and they were fired using two protocols ( $V_0$  and  $V_{50}$ ), which varied shot velocity, shot angle, and the number of shots. As a general matter, the PDs indicated that a failure of a body armor plate occurred during testing when a shot created an indentation in the clay testing block (referred to as "back face deformation") in excess of 43 mm.<sup>4</sup> AR, Tabs 8 and 9, Purchase Description.

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<sup>1</sup> The solicitation also contemplated the award of contracts for delivery of Flexible Small Arms Protective Vests (FSAPV-E and FSAPV-X). Because the protester proposed only the ESAPI and XSAPI plates, this aspect of the solicitation is not at issue.

<sup>2</sup> Offerors could propose multiple ESAPI and XSAPI PDMs for testing.

<sup>3</sup> AMC also hosted a "Contractor Body Armor Demonstration Day," during which offerors were provided a tour of the test facilities, observed a live fire test, witnessed post shot inspection, and were able to ask questions regarding the testing procedures. Contracting Officer's (CO) Statement at 2.

<sup>4</sup> We recognize that this characterization is a simplification of the pass/fail criteria established in the PDs, which were based upon numerous variables, including the type of body armor, the type of threat, the degree of penetration of the body armor, the amount of back face deformation, and whether the penetration or deformation occurred on the first shot or a subsequent shot, and provided for "limited" versus "catastrophic" failures. Agency Report (AR), Tabs 8 and 9, Purchase Description. For example, regarding certain threats (identified as a, b, and c), a catastrophic failure resulted when there was complete penetration of the hard armor (ESAPI or

(continued...)

Regarding the measurement of back face deformation, the PDs indicated that the clay material on which the test plates rested would consist of a single block “at least 4.0-inches thick and 24 x 24 inches in length and height.” PDs ¶ 4.9.9.3. As originally issued, the PDs indicated that “the clay shall be conditioned for at least 3.0 hours at a temperature between 60 and 95 degrees Fahrenheit and worked thoroughly to remove any voids.” RFP, Attachs. 1 and 2, PDs ¶ 4.9.9.3. This language, however, was removed via an amendment to the solicitation. In final form, the PDs indicated that the clay backing material would be conditioned “using a heated chamber or enclosure”; that conditioning time and temperature may change; and that satisfactory clay consistency would be determined based upon “drop test” performance, “such that a depression of 25 +/- 3 mm in depth is obtained” when a cylindrical steel mass, with a specified diameter and weight, is dropped from a specified height onto the face of the clay. PDs, para. 4.9.9.3. The depressions in the clay backing created by the drop testing would be filled with additional clay, which had been conditioned to the same initial temperature as the clay backing. *Id.* In addition, the agency issued amendment 14 to clarify that back face deformation “will be measured at the point of intended impact following impact.” RFP, Amend. 14.

In response to the RFP, Armorworks proposed a total of [deleted] different PDMs ([deleted] ESAPI and [deleted] XSAPI). In performing the ballistic testing, AMC tested 300 of Armorworks’ plates and at least one plate for each PDM suffered a “catastrophic” failure under the  $V_0$  firing protocol ([deleted] of the PDMs suffered catastrophic failures for multiple plates); a total of 17 of the 300 plates failed. In all but one instance the catastrophic failure was the result of a shot completely penetrating the hard and soft body armor. The one remaining failure resulted where the shot produced a back face deformation greater than 48 mm. Because each PDM submitted by Armorworks failed testing, AMC eliminated Armorworks from the competition, and sent Armorworks a letter, dated July 2, to this effect. On July 17, AMC provided Armorworks with a debriefing of its decision and thereafter, Armorworks filed this protest.<sup>5</sup>

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XSAPI) and soft armor on any shots or if back face deformation exceeded 48 mm on any shots. For a different threat (threat d), however, these criteria only resulted in a catastrophic failure if they occurred on the first shot. For purposes of addressing the protest issues here, it is sufficient to note that an offeror could suffer several “limited” failures and pass testing, but could not pass with a “catastrophic” failure.

<sup>5</sup> While Armorworks argues that its debriefing was inadequate and otherwise flawed, we will not consider these issues, inasmuch as the adequacy and conduct of a debriefing is a procedural matter that does not involve the validity of an award. Healthcare Tech. Solutions Int’l, B-299781, July 19, 2007, 2007 CPD ¶ 132 at 5.

## Untimely Issues

In its protest, Armorworks raises numerous concerns regarding the agency's methodology for preparing the clay backing material and testing its "plasticity" or "consistency." In this regard, Armorworks explains that proper conditioning of the clay backing is a critical aspect of testing the body armor. According to Armorworks, a soldier's body is part of the armor system since the plates not only stop bullets but also dissipate the force of impact and spread that force through a wider surface area of the body, which helps the body absorb the force of impact without causing serious injury. Since the clay backing behind the body armor acts like the human body to absorb a test bullet's force, if the clay is defective during testing, the armor system will fail. Comments at 18.

In challenging AMC's testing to ensure that the clay backing material was of a proper plasticity, Armorworks contends that the drop testing methodology used was not sufficient because it only tested plasticity to a depth of 25 mm (plus or minus 3 mm) and did not calibrate the clay's plasticity at the critical depth of 43 mm, the depth at which back face deformation may cause a ballistic test failure. Id. at 19-20. While AMC's drop testing "may have satisfied the letter of the specifications, that approach failed the broader test for reasonable testing, because, contrary to industry practice, it left a looming risk of inconsistent testing," according to Armorworks. Id. at 20.

Armorworks also takes issue with AMC's methodology for obtaining satisfactory plasticity of the clay. Specifically, the protester asserts that "[m]aintaining the clay at a minimal heat level in conjunction with repeated clay working methods is the optimal means of achieving uniform clay plasticity throughout the full depth of the clay" and it is the method used by private laboratories. Id. at 20. In this regard, Armorworks discusses in great detail alleged industry standard methods for calibrating and maintaining clay plasticity. Id. at 21-22. According to Armorworks, AMC abandoned these methods, however, and instead used heat to calibrate the clay, which provides less consistency throughout the full depth of the clay, creates a situation where the clay is either too hard or too soft, and thereby results in inconsistent and unequal test results. Id. at 20-25.

In addition, Armorworks takes issue with the procedures utilized by AMC to test back face deformation. Armorworks notes that AMC used "point of aim" as the point for measuring back face deformation, which, according to Armorworks, was a deviation from testing requirements, "a departure in test methodology from all historical ESAPI tests performed, and "a radical departure from all known body armor testing standards." Id. at 16. Armorworks maintains that back face deformation "is always measured at the deepest point (depth) within the post impact clay depression" since it is often the case that the deepest point of back face deformation is not the same as the point of aim. Id. Using point of aim "could make the plate appear (score) better than it really is." Comments, Exh. A, Decl. of Christian Action, Sept. 1, 2008, at 4.

We conclude that the above issues are untimely and therefore not for consideration by our Office. Our Bid Protest Regulations contain strict rules for the timely submission of protests. These timeliness rules reflect the dual requirements of giving parties a fair opportunity to present their cases and resolving protests expeditiously without disrupting or delaying the procurement process. Peacock, Myers & Adams, B-279327, Mar. 24, 1998, 98-1 CPD ¶ 94 at 3-4; Professional Rehab. Consultants, Inc., B-275871, Feb. 28, 1997, 97-1 CPD ¶ 94 at 2. Under these rules, a protest based on alleged improprieties in a solicitation that are apparent prior to closing time for receipt of proposals must be filed before that time. 4 C.F.R. § 21.2(a)(1) (2008). Where alleged improprieties do not exist in the initial solicitation, but are subsequently incorporated into the solicitation (e.g., via an amendment to the solicitation), they must be protested not later than the next closing time for receipt of proposals following the incorporation. Id.; see Cessna Aircraft Co., B-261953.5, Feb. 5, 1996, 96-1 CPD ¶ 132 at 16.

Here, as discussed above, the solicitation clearly stated that heating the clay would be the method used to prepare the clay for testing and that proper consistency or plasticity of the clay would be determined based upon whether the clay passed drop testing as described in the solicitation. In fact, as noted above, the agency issued an amendment which clearly placed offerors on notice of its intended testing procedures. With regard to the actual drop testing methodology, the solicitation specified that the clay would be conditioned to a point such that drop tests resulted in a depression of 25 mm. While Armorworks now contends that these procedures and testing methods were inherently unreliable and deviated from industry practice, it was incumbent upon Armorworks to raise these issues before the RFP closed since the alleged problems were apparent from the face of the solicitation. Knit-Rite, Inc., B-293088.3, Aug. 5, 2004, 2004 CPD ¶ 159 at 3-4 n.4.

We also find Armorworks' challenge to the agency's use of the intended point of aim measure to evaluate back face deformation to be an untimely challenge to the solicitation; however, a different timeliness rule applies with regard to this argument. As noted above, where an alleged solicitation impropriety is incorporated into the solicitation—e.g., by an amendment, as in this case—after proposals have already been submitted, that impropriety must be protested before the next closing time established for submitting proposals. This rule, however, is silent regarding a situation where the agency does not provide an opportunity to submit revised proposals as a consequence of the solicitation change. That, however, is the situation here.

After offerors had submitted their proposals and PDMs for ballistics testing, AMC, on April 17, issued Amendment 14, “as a clarification” regarding how the agency intended to measure back face deformation. Amendment 14 expressly stated that back face deformation “will be measured at the point of intended impact following impact.” This amendment clearly put Armorworks on notice of how the agency

intended to measure and test back face deformation, but did not provide offerors with an opportunity to revise their proposals in any way. In our view, to the extent Armorworks believed that the agency's testing methodology was flawed, Armorworks was obligated to protest this issue, which concerns the fundamental ground rules of the procurement, within 10 days of receiving the April 17 amendment.

In applying the 10-day rule, we find instructive those cases where a solicitation defect only became apparent after the closing date for receipt of proposals and we held that the alleged impropriety had to be protested not later than 10 days after the defect became apparent. See LBM, Inc., B-290682, Sept. 18, 2002, 2002 CPD ¶ 157 at 6-7; N&N Travel & Tours, Inc. et al., B-285164.2, B-285164.3, Aug. 31, 2000, 2000 CPD ¶ 146 at 7; Ocuto Blacktop & Paving Co., Inc., B-284165, Mar. 1, 2000, 2000 CPD ¶ 32 at 6; Vitro Servs. Corp., B-233040, Feb. 9, 1989, 89-1 CPD ¶ 136 at 3 n.1. These cases are similar to the situation at hand since they define the timeframe for protesting a solicitation impropriety where the solicitation closing date has passed. Since Armorworks waited until after it learned of its elimination from the competition, several months after the agency issued the clarifying amendment, to challenge the application of that amendment, its protest allegation is untimely and not for consideration by our Office.<sup>6</sup>

One could argue--although Armorworks has not in fact made this argument--that, under our Bid Protest Regulations, Armorworks' protest is timely since it was filed within 10 days of its debriefing. Pursuant to our Regulations, all protests other than solicitation improprieties must be filed not later than 10 days after the basis of protest is known or should have been known, with the exception of protests challenging a procurement conducted on the basis of competitive proposals, as in this case. In such cases, our Regulations expressly provide that "any protest basis which is known or should have been known either before the debriefing or as a result of the debriefing . . . shall not be filed before the debriefing date offered to the protester, but shall be filed not later than 10 days after the date on which the debriefing is held." 4 C.F.R. § 21.2(a)(2).

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<sup>6</sup> Even if Armorworks' protest were timely filed, we fail to understand how Armorworks was prejudiced by the agency's method for measuring back face deformation as indicated in Amendment 14. In its protest, Armorworks explains that the agency's method can result in body armor scoring better than it should otherwise, thereby suggesting that the testing should have been more stringent and resulted in more test failures. Armorworks' PDMs, however, failed under the less stringent testing criteria about which it complains. Moreover, its argument in this regard is counter to the entire thrust of its protest, which is that AMC's testing failed too many of the plates it tested, body armor which has previously been tested and passed, and which is currently used in the field. See Comments at 29.

Since Armorworks' basis of protest concerns the incorporation of a solicitation impropriety through an amendment, and the agency did not establish a time for the submission of revised proposals, there might be some question as to whether the debriefing timeliness rules should apply since they broadly apply to "any basis of protest," including those known before the debriefing.

As noted above, our timeliness rules reflect the dual requirements of giving parties a fair opportunity to present their cases and resolving protests expeditiously without unduly disrupting or delaying the procurement process. More specifically, underlying our timeliness rules regarding solicitation improprieties is the principle that challenges which go to the heart of the underlying ground rules by which a competition is conducted, should be resolved as early as practicable during the solicitation process, but certainly in advance of an award decision if possible, not afterwards. Continental Staffing, Inc., B-299054, Jan. 29, 2007, 2007 CPD ¶ 18 at 4-5. Such a rule promotes fundamental fairness in the competitive process by preventing an offeror from taking advantage of the government as well as other offerors, by waiting silently only to spring forward with an alleged defect in an effort to restart the procurement process, potentially armed with increased knowledge of its competitors' position or information. Blue & Gold, Fleet, L.P. v. United States, 492 F.3d 1308, 1313-14 (Fed. Cir. 2007). It also promotes efficiency by ensuring that concerns regarding a solicitation are raised before contractor and government resources are expended in pursuing and awarding the contract, thus avoiding costly and unproductive litigation after the fact. Id.

The purpose of the exception to the timeliness rules for negotiated procurements, on the other hand, is to encourage offerors to seek, and contracting agencies to give, early and meaningful debriefings prior to the offeror's deciding whether or not to file a protest and to preclude strategic or defensive protests—*i.e.*, protests filed before actual knowledge that a basis for protest exists or in anticipation of improper actions by the contracting agency. The Real Estate Center, B-274081, Aug. 20, 1996, 96-2 CPD ¶ 74 at 2.

Because Armorworks' allegations clearly concern the terms of the solicitation as established by the agency and therefore implicate the fundamental ground rules of the procurement, issues which were apparent to Armorworks before its elimination from the competition, its protest allegation implicates the policy considerations attendant to the solicitation impropriety timeliness rules outlined above, as opposed to those associated with the debriefing rules. We therefore find it appropriate in this case to apply the solicitation impropriety timeliness rules, consistent with our decisions holding that solicitation defects not apparent before the solicitation's closing date must be protested not later than 10 days after the defect becomes apparent, and we expressly decline to apply the debriefing timeliness rules under these circumstances.

## Remaining Issues

In its comments on the agency report, Armorworks raised concerns about shot placement during the testing. Specifically, it complained that the first shot placement “made it impossible to fire a second shot at the ballistically weakest point of the plate,” which was contrary to the solicitation, and therefore did not “probe the plates’ weakest points.” Comments at 15. Our Office asked Armorworks to address, among other things, how it was prejudiced by the agency’s alleged failure in this regard. GAO E-mail to Parties, Sept. 3, 2008. Assuming Armorworks’ allegation to be true, prejudice was not apparent, in our view, since Armorworks’ PDMs failed testing under the arguably less demanding standards. Armorworks, however, simply did not respond to this question. As a consequence, we dismiss this aspect of Armorworks’ protest.<sup>7</sup>

In a supplemental protest, Armorworks asserts that AMC’s testing facilities are not certified in accordance with Justice Department standards, and that without those standards there were no meaningful controls to ensure consistency among the three test ranges used and that consistency was further undermined by a change of personnel during testing. Beyond these general concerns, Armorworks fails to offer any specific indication of how these concerns negatively affected the ballistic testing. Notwithstanding that the agency provided Armorworks with the detailed results of the ballistics testing, there is no indication that shots were misfired, that the agency deviated from the standards set forth in the solicitation regarding shot velocity or angle, that measurements were improper, or that the agency did not follow timing procedures. Absent some indication or evidence to suggest that the alleged lack of standards in some way compromised the actual test results, we find that Armorworks’ general allegations in this regard fail to comply with the requirement that a protest provide a sufficiently detailed statement of the legal and factual grounds for the protest, 4 C.F.R. § 21.1(c)(4) and (f); accordingly, they are insufficient to warrant further consideration by our Office. View One, Inc., B-400346, July 30, 2008, 2008 CPD ¶ 142.

Armorworks also argues that the drop testing performed by the agency during testing was flawed. According to Armorworks, the agency stated that it performed drop tests “at the edge of the chest mold area,” which was unreasonable since “measurements taken near the edge of the clay may result in excessive softness in

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<sup>7</sup> Prejudice is an essential element of any protest and our Office will not sustain a protest unless the protester demonstrates a reasonable possibility that it was prejudiced by the agency’s actions, that is, unless the protester demonstrates that, but for the agency’s actions, it would have had a substantial chance of receiving the award. McDonald-Bradley, B-270126, Feb. 8, 1996, 96-1 CPD ¶ 54 at 3; see Statistica, Inc., v. Christopher, 102 F.3d 1577, 1581 (Fed. Cir. 1996).



the center of the clay (where the test bullets actually impact)” and using clay that is too soft “will lead to excessive back face deformation and, thus, excessive test failures.” Comments, Exh. A, Decl. of Christian Action at 2. Then, turning this argument on its head, Armorworks complains that the agency did not follow its flawed methodology in a consistent manner, noting that in connection with the testing of one of its PDMs (candidate 11), an equal number of the drop tests were done in the “center of the mold.” Comments at 16.

As an initial matter, it is significant to note that all of Armorworks’ PDMs, to include candidate 11, failed ballistic testing, not as a result of excessive back face deformation, but because there was a complete penetration of the body armor for at least one of the plates tested. Moreover, the drop testing results for the one plate which failed testing for PDM candidate 11 appear to be one of those instances where the agency performed the drop tests in the center of the mold, which the protester contends was the proper testing methodology.<sup>8</sup> See AR, Tab 11, Candidate 11 Test Report. Given the inherent inconsistency of the protester’s arguments, the underlying record of the ballistics testing, and absent any specific showing by the protester that its failures were the result of improper drop testing, there is simply nothing to suggest that the agency’s testing methodology in any way prejudiced Armorworks and was a material cause of its body armor failures.

As a final matter, Armorworks argues that one of its failed plates never should have been the subject of testing since, before ballistic testing, the agency noticed what it described as a “manufactured flaw at the top left perimeter” in the plate. The agency explains that it performed an initial x-ray inspection of all plates and that “a minor change in density” was noted for the plate as a result of this inspection. Absent obvious shipping damage, any plate supplied was, as the agency describes, “fair game” for testing. AR, Encl. 1, at 2. Given the harsh environment in which the body armor must function, the extensive durability testing to which the body armor was subjected, and the critical life and safety issues inherent in the body armor testing, we do not think that the agency acted unreasonably in testing Armorworks’ plate, notwithstanding the identified flaw.

The protest is dismissed in part and denied in part.

Gary L. Kepplinger  
General Counsel

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<sup>8</sup> The ballistic test reports for candidate 11 include the location of the drop tests for each plate tested. The drop tests for the one plate failure in this batch are obviously closer to the center of the clay as compared to the other plates.