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Comptroller General
of the United States

United States General Accounting Office
Washington, DC 20548

Decision

Matter of: STIDD Systems, Inc.

File: B-292075; B-292075.2

Date: June 17, 2003

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DIGEST

Protest challenging awards under solicitation for lithium-ion batteries for mini-submarines (Advanced SEAL Delivery System) is denied where: (1) based on information in proposal, agency reasonably assessed protester's proposal as weak or deficient based on noncompliance of its proposed system with solicitation requirements; and (2) the awardees, unlike the protester, possessed a full range of research, development, test and production capabilities, such that they could perform the necessary development.

DECISION

STIDD Systems, Inc. protests the Naval Sea Systems Command's (NAVSEA) award of contracts to Yardney Technical Products and SAFT America, Inc., under request for proposals (RFP) No. N00164-02-R-6914, for lithium-ion battery cells or modules for the Advanced SEAL Delivery System (ASDS). STIDD challenges the evaluation of technical proposals.

We deny the protest.

The solicitation contemplated a two-phase procurement, commencing with the award of two Phase I contracts for the procurement of battery samples and battery test data, to determine a source of lithium-ion batteries for the ASDS to replace the current silver-zinc batteries used on the ASDS. ASDS is a battery-powered mini-submarine--approximately 65 feet long and 8 feet in diameter, with a dry, pressurized interior--which can be used to transport Navy special operations forces

and for intelligence collection and reconnaissance. U.S. General Accounting Office, Defense Acquisitions: Advanced SEAL Delivery System Needs Increased Oversight, GAO-03-442 (Washington, D.C.: Mar. 31, 2003), at 3. The solicitation statement of work (SOW) defined the required battery sample as a

> ½-string subassembly (individual cells, interconnects, scanner(s), harnesses, electronics, hardware, and battery management software) that would be housed inside the ASDS titanium battery bottle. The ½-string subassembly shall be representative of the production deliverable to meet the requirement for a complete ship-set ASDS battery.

SOW I at ¶ 1.0. (Each ½-string assembly is contained in a single, titanium "battery bottle"; there are 7 strings--14 ½-strings--in a complete ship-set ASDS battery.)

The RFP provided that, following the completion of Phase I, a competition would be conducted between the two Phase I awardees, resulting in the award of a Phase II indefinite-delivery/indefinite-quantity contract based on the battery developed by the successful offeror under its Phase I contract. In this regard, each offeror for Phase I was required to include in its proposal a not-to-exceed (NTE) pricing matrix for the batteries it would produce if selected for Phase II. The offerors were not permitted under the solicitation to offer a Phase I price of more than $1.5 million or a Phase II NTE price of more than $10 million per battery. RFP Amend. 0002 at 6.

Award in Phase I was to be made to the offerors whose conforming proposals were most advantageous to the government, as determined under a two-step evaluation process. In step one, the agency was to evaluate whether offerors' technical proposals addressed specified go/no go criteria--with respect to the required minimum energy (1,200 kilowatt-hours (kWh)), size, cycle life, and discharge current of the battery--"in sufficient detail to clearly show that its proposal meets these minimum requirements"; if it were determined that any proposal failed to meet any of the go/no go criteria, evaluation of that proposal would immediately stop and the proposal would no longer be considered. RFP at 41. In step two, the "best value" proposals were to be determined based on four evaluation factors: (1) technical, including (in descending order of importance) subfactors for research and development (R&D) methodology, design approach and schedule; (2) past performance; (3) offeror capability, including (in descending order of importance) subfactors for R&D resources available for this effort, management plan and available production facilities; and (4) price. The technical factor was significantly more important than past performance, while past performance was more important than offeror capability; these non-price factors, when combined, were significantly more important than price.

Four offerors submitted proposals. STIDD's, SAFT's and Yardney's proposals were included in the competitive range.

STIDD proposed a lithium-ion rigid cell battery based on the STIDD and Mathews Associates, Inc. "Massive Unit Small Cell Lithium-Ion Energy System" (MUSCLES) approach, under which "the most current" [DELETED] battery cell in production is used as the basic building block for the battery system. According to STIDD's proposal:

> For any size "MUSCLES" battery system, [DELETED].

STIDD Technical Proposal at 2-3. The [DELETED] cell proposed by STIDD is [DELETED] in size and weighs [DELETED]. STIDD proposed to combine [DELETED] (a total of [DELETED] cells) in a single ½-string bottle assembly, for a total cell-only weight of [DELETED] pounds (as calculated by the agency using the stated weight for the [DELETED] cells), thus leaving a margin of approximately [DELETED] percent, or [DELETED] pounds (based on the 1,160-pound battery weight limit established in the specification), for all other mechanical structure, intercell electrical connections, cabling, safety circuitry, and monitoring system components. STIDD Technical Proposal at 6, [DELETED] Product Data Sheet; STIDD Revised Proposal, Feb. 18, 2003, at 8. In contrast, SAFT's proposed design combined eight "strands" of [DELETED] cells each (a total of [DELETED] cells) in a single ½-string bottle assembly, for a total cell-only weight of approximately [DELETED] pounds, thus leaving a margin of [DELETED] percent, or [DELETED] pounds, for all other structural elements. Yardney proposed to rely on a particular configuration combining a number of larger custom cells, with up to [DELETED] cells in a single ½-string bottle assembly, but also proposed to try a number of different approaches using cells of varying sizes and configurations in order to find the best one. The cell-only weight of Yardney's battery was [DELETED] pounds, thus leaving a margin of [DELETED] percent, or [DELETED] pounds, for all other structural elements. Agency Report, Apr. 17, 2003, at 11, 42.

After conducting discussions, NAVSEA requested final proposal revisions (FPR). Based on its evaluation of FPRs, the agency concluded that SAFT's and Yardney's proposals were most advantageous to the government. Although all three offerors received highly favorable past performance ratings, Yardney's and SAFT's proposals received favorable ratings under the technical factor, the most important factor, while STIDD's proposal received an unfavorable rating. In this regard, while NAVSEA evaluated STIDD's proposal as offering several strengths deriving from its use of a proven, commercially-available lithium-ion cell (the [DELETED] model [DELETED] cell), that offered demonstrated performance, quality and safety at the cell level, the agency determined that the proposal nevertheless included major deficiencies and significant weaknesses that might result in moderate to high risk to the overall program. FPR Evaluation Results: STIDD at 2. These included a lack of definition in the design of the mechanical assembly, support structure and cabling which, together with the lack of analytical or modeling data showing an ability to meet the solicitation shock and vibration requirements, left compliance in this regard uncertain. Nor did the agency find an explanation as to how critical subsystems such as the battery monitoring system would be scaled up to the large number of

cells proposed. Further, the agency expressed particular concern that the evaluated weight of the proposed battery cells left only [DELETED] pounds for all other system elements. In addition, NAVSEA questioned whether STIDD's proposed design would meet all of the energy requirements in the specifications, including the requirements for a 205-volt operating voltage and a minimum energy output of 1,200 kWh. In this regard, the agency calculated that the data furnished for STIDD's battery indicated that it would not meet the minimum requirement of 1,200 kWh of energy output when operating at the lower end of the required operating temperature range. NAVSEA's concerns with respect to STIDD's proposal were further enhanced by the protester's failure to describe an R&D methodology or any R&D and modeling capabilities that could be utilized in the event that problems were encountered in the above areas. Finally, the agency questioned whether STIDD's proposed maintenance and repair approach complied with the specification requirements. Id. at 2-10.

NAVSEA likewise found STIDD's proposal less advantageous than the other proposals under the offeror capability factor, under which the agency assigned Yardney's and SAFT's proposals highly favorable ratings and STIDD's proposal only a favorable rating. In significant measure, this disparity resulted from the agency's determination that, while Yardney's and SAFT's proposals described a full range of R&D, test and production capabilities, STIDD's proposal did not describe any R&D or modeling capabilities. Id. at 2, 6; FPR Evaluation Results: SAFT at 2; FPR Evaluation Results: Yardney at 2.

Finally, under the (least important) price factor, Yardney's prices for Phases I and II were $[DELETED] million and $[DELETED] million, respectively; SAFT's were $[DELETED] million and $[DELETED] million; and STIDD's were $[DELETED] million and $[DELETED] million. Given the evaluation findings, NAVSEA determined that SAFT's proposal, with its highly favorable past performance and offeror capability ratings and favorable technical rating, clearly represented the best value to the government, and that Yardney's proposal, with similar overall ratings, represented the second best value, notwithstanding the higher prices.

STIDD challenges several specific aspects of the evaluation, as well as the agency's overall assessment of STIDD's proposal as presenting significant risk. STIDD concludes that its proposal in fact was the low risk proposal and that it should have received one of the Phase I awards instead of Yardney or SAFT. We have considered all of the protester's arguments, and find them to be without merit. We discuss the most significant arguments below.

In reviewing protests against allegedly improper evaluations, it is not our role to reevaluate proposals. Rather, we will examine the record to determine whether the agency's judgment was reasonable and in accord with the RFP criteria as well as with applicable procurement laws and regulations. Abt Assocs., Inc., B-237060.2, Feb. 26, 1990, 90-1 CPD ¶ 223 at 4. It is an offeror's obligation to submit an adequately written proposal for the agency to evaluate, and an offeror fails to do so

at its own risk. United Defense LP, B-286925.3 et al., Apr. 9, 2001, 2001 CPD ¶ 75 at 19. We conclude that the agency reasonably evaluated STIDD's proposal and that the consequent source selection was unobjectionable.

ENERGY OUTPUT

STIDD challenges NAVSEA's determination that its proposal indicated that its battery would not meet the minimum requirement of 1,200 kWh of energy output when operating at the lower end of the required operating temperature range. In this regard, paragraph 3.2.1 of the specification provided that the battery shall furnish a minimum energy output of 1,200 kWh across the operating temperature ranges, as defined in paragraphs 3.4.4.1 and 3.4.4.3; paragraph 3.4.4.1 of the specification established the normal operating temperature range for normal discharge as minus 2 degrees Celsius (C) (also indicated as 29 degrees Fahrenheit) to 35 degrees C (also indicated as 95 degrees Fahrenheit). (The specification also established a goal for an energy output of 1,700 kWh.) RFP Amend. 0004, attach.

Low temperatures tend to result in lower energy output (all other factors being equal). The only detailed temperature performance information in STIDD's proposal, showing how the performance of STIDD's proposed battery varied with temperature, was a copy of [DELETED] product data sheet. This data sheet included a temperature characteristics chart depicting temperature performance curves--showing nominal voltage and capacity--assuming a [DELETED] amp constant current discharge at [DELETED] temperatures, including [DELETED] degrees C. Since the chart did not include a temperature performance curve for the required minimum low temperature of minus 2 degrees C, NAVSEA evaluated the energy output of STIDD's battery at the 0 degree C temperature performance curve, at which temperature energy output would be expected to be better than at minus 2 degrees C. NAVSEA calculated that the output of STIDD's proposed battery at this less challenging temperature was only [DELETED] kWh, that is, [DELETED] percent below the required minimum output of 1,200 kWh. (NAVSEA reports that this calculation actually may overstate energy output, since it does not account for resistance of the energy cell interconnects and cabling. Agency Report, Apr. 17, 2003, at 36 n.28.)

STIDD challenges the agency's calculation on several bases. First, STIDD asserts that the agency failed to account for the effects of battery cell self-heating, that is, the likelihood that a number of lithium-ion cells operating together would generate heat so as to raise the ambient temperature and thereby improve battery performance at low temperatures. In this regard, STIDD notes that the temperature performance curves in [DELETED] product data sheet depict the performance of only a single cell.

We find this argument unpersuasive. As noted by NAVSEA, STIDD's proposal did not refer to self-heating as relevant to low-temperature energy output; indeed, its proposal downplayed the extent of heat generation. According to STIDD's proposal,

"[c]ell heat dissipation is negligible," STIDD Technical Proposal at 17; "[h]eat generated by the cells at the maximum specified current is insignificant, and will be transferred to the bottle by convection," STIDD Proposal Revision, Feb. 25, 2003, at 6; and the "heat generated by the single bottle 'MUSCLES' battery is a function of current provided and is estimated to be on the order of [DELETED] watts during full 100A current draw." STIDD Proposal Revision, Feb. 18, 2003, at 7. (Likewise, SAFT stated in its proposal that its test data indicated that self-heating would increase the temperature of its battery by less than [DELETED] degree C under worst-case conditions. SAFT Technical Proposal at 22.) NAVSEA calculates, and STIDD has not shown otherwise, that the temperature rise in a 1,160-pound battery from [DELETED] watts of heat generation would be only [DELETED] degrees C. Agency Report, May 12, 2003, at 6-7. (Further, as noted above, STIDD stated in its proposal that the heat generated would be transferred to the bottle by convection; the formula used by NAVSEA and STIDD in calculating temperature rise apparently does not take into account heat loss resulting from heat transferred to the battery bottle and then to the ocean. Agency Report, May 20, 2003 at 1-3; STIDD Comments, May 16, 2003, attach., at 4.)

Although STIDD originally based its argument in this regard on the [DELETED] watts heat generation cited in its proposal, STIDD Comments, Apr. 28, 2003, at 30, and attach., at 6, STIDD altered its argument in response to the agency's position. Specifically, when the agency presented calculations demonstrating that any resulting temperature rise would be less than 1 degree C, STIDD responded that the heat generated by the cells actually would be [DELETED] (instead of [DELETED]) watts. This supplemental argument was raised more than 10 days after the protester knew of the basis for the argument, and thus is untimely. 4 C.F.R. § 21.2(a)(2) (2003).

In any case, as noted, STIDD's heat generation argument was not reflected in its proposal; if STIDD believed that sufficient heat would be generated by the cells as to significantly increase the ambient temperature and materially improve battery performance at the low end of the required temperature operating range, STIDD was required to state and support this proposition in its proposal. United Defense LP, supra, at 19.[1] In these circumstances,

[1] The solicitation here highlighted the need for an adequately written proposal, stating as follows:

> Each technical proposal shall enable Government evaluating personnel to make a thorough evaluation and arrive at a sound determination as to whether or not the proposal will meet the requirements of the government. To this end, each technical proposal shall be so specific, detailed and complete as to clearly and fully demonstrate that the prospective contractor has a thorough knowledge and understanding of the requirements and has valid and practical solutions for technical

(continued...)

NAVSEA reasonably relied on STIDD's proposal--which did not indicate that there would be significant heat generated--in calculating the energy output of STIDD's proposed battery.

STIDD also challenges the agency's calculation that the energy output of its proposed battery at a temperature of 0 degrees C was only [DELETED] kWh, asserting that this calculation understated the energy output because it was based on a [DELETED] amp constant current, when the current required actually would be less. STIDD calculates that, given the specification description of typical battery discharge currents, including an average discharge current of 40 amps and a maximum discharge current of 100 amps, Specification ¶ 3.2.4, the required discharge current for each cell would be only [DELETED] amps (at the maximum discharge current) or [DELETED] amps (for the average discharge current).[2]

In response, NAVSEA reports that the evaluators were aware that the [DELETED] amp constant current discharge rate was higher than that required by the specification, but used that rate in its calculation because that was the indicated current discharge level used to generate the temperature performance curves on [DELETED] product data sheet in STIDD's proposal; there were no other discharge rates depicted on the [DELETED] graph; STIDD's proposal included no other discharge data to demonstrate the performance of its proposed [DELETED] cells; and it was not feasible to calculate cell performance at other discharge rates with the information included in the [DELETED] data sheet in STIDD's proposal. Further, the agency reports that, given (1) that the energy output of STIDD's battery using the [DELETED] amp discharge rate and at the less challenging temperature of 0 degrees C indicated on the [DELETED] temperature chart was [DELETED] percent below the required output, and (2) that the energy output at minus 2 degrees C (the lower end of the required temperature performance range) would decrease to nearly [DELETED] percent below (to [DELETED] kWh) the required minimum (1,200 kWh), there was a significant risk that STIDD's battery would fail to furnish

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(...continued)

> problems. Statements which paraphrase the specifications or attest that "standard procedures will be employed," are inadequate to demonstrate how it is proposed to comply with the requirements of the specifications, and this clause.

RFP at 39.

[2] According to the agency, the actual discharge current for each cell given a maximum discharge current of 100 amps for the battery would be closer to [DELETED] amps than the [DELETED] amps cited by STIDD. Agency Report, May 20, 2003, at 4.

the required energy output even at discharge rates of [DELETED] amps. Agency Report, May 20, 2003, at 5.

NAVSEA's evaluation was reasonable. Although STIDD disagrees with NAVSEA's position--asserting that the agency could have derived battery cell performance at lower discharge rates from the [DELETED] data sheet, and disputing the extent of any decrease in energy output associated with a decrease in temperature from 0 degrees C to the required lower limit of minus 2 degrees C--it has not shown that the agency's approach was unreasonable. STIDD itself concedes that the calculations it claims the agency could have performed to derive performance at discharge rates lower than the [DELETED] amp rate shown in the [DELETED] product data sheet were "involved and time-consuming," STIDD Comments, May 21, 2003, at 4, and STIDD has not refuted the agency's position that the [DELETED] data furnished in its proposal did not clearly, directly and reliably allow calculation of the performance of the proposed lithium-ion cell at lower discharge rates. Again, STIDD's technical proposal should have included all information necessary for these calculations. Given STIDD's failure to clearly demonstrate in its proposal the performance of its battery throughout the required operating temperature range, and its failure even now to show that its proposal unequivocally met the low temperature energy requirements, there is no basis to question the agency's determination regarding the energy output of STIDD's battery.

STIDD notes that, even accepting the agency's calculations as correct, SAFT's revised proposal showed an energy output lower than STIDD's, indicating an output of [DELETED] kWh at minus 2 degrees C, which was approximately [DELETED] percent below the required 1,200 kWh. While STIDD is correct, the agency notes that the output of SAFT's battery was calculated at minus 2 degrees C, the required lower end of the temperature range, while the output of STIDD's battery was calculated at the less challenging temperature of 0 degrees C. NAVSEA asserts that, given the likely decrease in battery performance associated with a decrease in temperature at low temperatures, there was no basis for concluding that the difference in output between STIDD's and SAFT's batteries reflected anything other than the more demanding environment in which the SAFT battery was tested. Agency Report, Apr. 17, 2003, at 37-39. We find nothing unreasonable in this position. We also find reasonable NAVSEA's further conclusion that SAFT's shortfall in this regard was less significant than STIDD's. As noted by the agency, the significance of STIDD's failure to demonstrate compliance with the low temperature performance requirements was enhanced by an immature battery assembly design, the lack of any weight margin needed to implement improvements in performance, and a lack of R&D capability to improve cell performance. NAVSEA notes that, in contrast, the proposed SAFT battery had a more mature assembly design and a greater weight margin, and SAFT had a proven R&D capability. Thus, while STIDD's proposal furnished the agency with little basis to conclude that the performance of its proposed battery would improve, it appeared that SAFT would have the opportunity to improve its battery's performance during Phase I so as to ensure compliance with the minimum energy output requirements. Agency Report, May 12, 2003, at 7-8.

We conclude that, based on the information in STIDD's proposal, the agency reasonably found that STIDD's proposed battery would not furnish the required energy output at the low end of the required operating temperature range, and that there was a significant risk that the deficiency in energy output would not be remedied during performance, much less that STIDD could satisfy the agency's stated desire for even higher energy output than 1,200 kWh.

WEIGHT, SHOCK AND BATTERY ASSEMBLY DESIGN

STIDD challenges the evaluation of its proposed battery with respect to weight and battery assembly. In this regard, as discussed above, the specification established a maximum weight of 1,160 pounds for all necessary battery fixturing, spacers, trays, interconnects, harnesses, scanner, electronics, and individual battery cells, and provided that proposals for systems exceeding the maximum allowed weight would receive a lower technical score. Specification ¶ 3.3.2; amend. 0002 at 8 and attach.; and amend. 0004 at 4. In addition, the specification established detailed requirements for resistance to shock and vibration. Specification ¶¶ 3.4.7, 3.4.8.

As noted above, NAVSEA determined that, among the major deficiencies and significant weaknesses characterizing STIDD's proposal, were the lack of definition in the descriptions of the mechanical assembly, support structure and cabling which, together with the lack of analytical or modeling data showing an ability to meet the solicitation shock and vibration requirements, left compliance with these requirements uncertain. In addition, the agency viewed with concern the fact that the weight of the proposed battery cells alone apparently left only [DELETED]--actually [DELETED]--pounds of the 1,160 pounds available under the specification for all other mechanical structure, intercell electrical connections, cabling, safety circuitry, and monitoring system components.[3] NAVSEA maintains that, given the lack of definition of the battery assembly design, including a failure to detail how the proposed battery structure could be restrained and protected from shock and vibration, and the fact that STIDD allowed less than [DELETED] percent of the total assembly weight for all other components other than the battery cells, there was a significant risk that STIDD's proposed battery would be unable to meet the specification shock and vibration requirements.

STIDD asserts that the agency's concern with its battery assembly structure is unwarranted. STIDD notes that it stated in its proposal that "[t]he current physical

[3] We note that because of rounding errors associated with adding the weight of the [DELETED] battery cells in a single ½-string battery bottle assembly, the agency's calculation actually overstated the available weight; the actual weight of the cells alone is approximately [DELETED] pounds, leaving only approximately [DELETED] pounds for all other components. Agency Report, June 9, 2003.

design concept requires no more than [DELETED] lbs for connectors, wires, PC boards and protective structure," explaining that the PC boards and approximately [DELETED] percent of the wires and connectors are lightweight. STIDD Proposal Revisions, Feb. 18, 2003, at 8. When questioned by the agency as to its battery assembly structure, STIDD responded during discussions that [DELETED]. STIDD Proposal Revisions, Feb. 25, 2003, at 7; STIDD Response, Feb. 18, 2003, at 5.

Again, STIDD's argument is unpersuasive. As STIDD itself noted in its proposal, its design was incomplete and it lacked data to establish that it could meet the specification shock and vibration requirements. In this regard, STIDD's proposal stated as follows:

> Because the final design has not yet been completed, exact dimensions and physical characteristics of PC board thickness, wire dress, shock mounting schemes, wire type, wiring harness strategy, encapsulation, strategic point fastening, vibration protection and overall cable run methodology have not yet been finalized in relation to system vibration and shock.

STIDD Proposal Revisions, Feb. 25, 2003, at 5. Likewise, according to STIDD's proposal, "[a]ll aspects of the single bottle mechanical assembly and its internal support structure will be analyzed to ensure that shock and vibration requirements are met." STIDD Response, Feb. 18, 2003, at 5. As a result, when NAVSEA questioned STIDD during discussions as to the lack of definition of its ASDS battery assembly design and the ability of the design to satisfy the specification shock and vibration requirements, STIDD was unable to furnish shock and vibration data with respect to its ASDS design because it had not performed the necessary analysis. STIDD Proposal Revisions, Feb. 25, 2003, at 5-6. We think this provided the agency with a legitimate basis for concern.

Further, we believe that the agency reasonably viewed STIDD's incomplete design as a matter of particular concern in light of the fact that STIDD, unlike SAFT and Yardney, had allocated very little weight to components other than the battery cells. Again, while STIDD allowed only [DELETED]pounds, or approximately [DELETED] percent of the total assembly weight, for all other components other than the battery cells, SAFT allowed [DELETED] pounds, or approximately [DELETED] percent, and Yardney allowed [DELETED] pounds, or approximately [DELETED] percent for all other components. STIDD's allowance in this regard was not only significantly less than that of the other offerors, it was also less than the margins commonly used. In this regard, according to the agency, in the development of battery designs for uses such as ASDS, margins of 8 to 10 percent of total battery assembly weight are generally allocated to mechanical structure. Agency Report, May 12, 2003, at 9. As further confirmation of its view that STIDD allowed too little weight for non-battery cell components, NAVSEA cites data from a prior application of STIDD's battery assembly concept. NAVSEA notes that STIDD submitted a number of sample lithium-ion battery [DELETED] cells) for evaluation for the Navy's Swimmer

Transport Device program. The agency reports that, considering only the non-battery components of these [DELETED], the data indicates that the weight of STIDD's proposed ASDS design would be [DELETED] pounds above the allowed 1,160 pounds per bottle, even before consideration of the weight of the necessary monitoring electronics and cabling to connect the slices of [DELETED]. Agency Report, May 12, 2003, at 3.[4]

We conclude that the lack of definition of STIDD's proposed battery assembly design and the fact that STIDD allowed little of the total assembly weight for other components, reasonably indicated that STIDD had allowed too little weight for non-battery cell components in its design. NAVSEA therefore had a reasonable basis to conclude that there was a significant risk that STIDD's proposed battery would be unable to meet the RFP's shock and vibration requirements.

MAINTENANCE LOGISTICS

STIDD challenges the agency's evaluation of its proposed approach to maintenance logistics. In this regard, the specification established the requirement that the mean time to repair (MTTR) the system not exceed 12 hours, including fault localization, repair, and repair effectiveness verification. Specification ¶ 3.11.3. In addition, the specification stated that a modular design concept shall be used to the extent practicable, with repair limited to the replacement of modular assemblies, Specification ¶ 3.11.4, while the statement of work (SOW) for Phase I provided that "[t]he ½--string subassembly shall be configured such that individual cells can be removed from or installed in the subassembly by the Government without damaging the string." Phase I SOW ¶ 3.1.2. STIDD disagrees with NAVSEA's finding that STIDD's proposed approach to maintenance logistics failed to comply with the solicitation requirements.

NAVSEA's evaluation was reasonable. In response to a NAVSEA question during discussions as to how its proposed battery would meet the 12-hour MTTR requirement, STIDD initially responded that the battery bottle (and thus the entire battery) would be the lowest replaceable unit (LRU), and that the bottle would either

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[4] STIDD notes that its proposal included a cross-section that STIDD claims shows that the battery would fill the battery bottle, and thus restrain movement within the bottle without adding other materials. STIDD Comments, May 16, 2003, at 13. However, as pointed out by NAVSEA, the cross-section cited by STIDD includes open spaces inside the bottle that allow room for movement. STIDD Proposal Revisions, Feb. 25, 2003, at 10. According to the agency, unless the spaces are filled--and the cross-section in STIDD's proposal did not show any such filling--shock loads would be transmitted to the high points, that is, the points of contact around the perimeter, thus generating very large point stresses on the cells and [DELETED]. Agency Report, May 20, 2003, at 7-8.

be returned to STIDD for service or serviced on-site by STIDD-trained and qualified technicians. According to STIDD's response, "[s]ince no government personnel will perform any service or repairs, the 12-hour MTTR is not applicable to any STIDD 'MUSCLES' battery systems." STIDD Proposal Revisions, Feb. 18, 2003, at 5-6. When advised that its response was inadequate--that designation of the bottle as the LRU was still a weakness, and that precluding government personnel from servicing the battery contributed to a significant weakness--STIDD modified its proposal to

> provide the ability for government personnel to remove the battery from the bottle for bottle assembly maintenance . . . . There are no serviceable parts on the battery itself, and during the warranty period the government shall not service the battery or its wiring, but may only service the bottle . . . .
>
> STIDD now proposes the single bottle "MUSCLES" battery with all PC boards and wiring as the LRU, not including the bottle. During the warranty period, replacement of [DELETED], slices or PC boards will require the services of expert STIDD-trained technicians with proper equipment, and is deemed a depot level repair. After the warranty period, the government may service the battery as it sees fit.

STIDD Proposal Revisions, Feb. 25, 2003, at 2-4. However, this revision did not eliminate the weakness; while the solicitation required a modular design in which the modular assemblies could be repaired by replacement, and individual cells could be removed from or installed in the subassemblies by the government, STIDD continued to propose that the entire MUSCLES battery (with all PC boards and wiring) would be the LRU, with replacement of [DELETED], slices or PC boards limited to depot-level replacement by expert STIDD-trained technicians. We agree with the agency that STIDD's refusal to countenance subassembly replacement by government personnel in the field (at least during the warranty period) was inconsistent with the specific solicitation requirement for such a capability and reasonably called into question how STIDD could comply with the 12-hour MTTR.[5]

[5] STIDD maintains that NAVSEA's desire for the ability to replace individual battery cells was inconsistent with good technical practice. STIDD's position, however, amounts to a challenge to the solicitation requirements that STIDD was required to raise prior to the time set for receipt of proposals. 4 C.F.R. § 21.2(a)(1).

R&D

STIDD argues that NAVSEA's downgrading of its proposal for lack of R&D capability was inconsistent with the solicitation, which assertedly did not provide for evaluation of R&D capability, and unreasonable, because STIDD was proposing mature technology that did not require R&D. As noted above, however, the solicitation specifically provided for consideration of R&D methodology, under the technical factor, and of offeror capability, including R&D resources available for this effort. As for the agency's focus on STIDD's lack of R&D capability, we note that this was relevant if for no other reason than that STIDD's proposed approach in fact failed to comply with significant solicitation requirements, thus apparently necessitating some R&D work.

RISK

STIDD asserts that NAVSEA failed to consider risk in the evaluation, as required by the solicitation, and improperly found that STIDD's proposal presented a higher risk than SAFT's and Yardney's proposals. In this regard, the solicitation provided that "[a]s part of the evaluation a risk assessment will be done and a rating assigned to each proposal based on the probability of success of the offeror's proposed technical approach." Amend. 0002 at 6.

We find no basis to question the evaluation. First, it is clear from the record that the agency considered risk in the evaluation. While, as noted by the protester, NAVSEA did not assign a single, overall risk rating to each proposal, the agency, as part of its evaluation, created a matrix that included a risk rating, based on the likelihood of failure and the impact of failure, for each of 121 performance requirements. In addition, the agency noted in its narrative evaluation particular instances of high, moderate or otherwise significant risk. For example, with respect to STIDD's proposal, NAVSEA determined that the undefined modularity of the proposed design, coupled with the lack of reliability data, represented a high risk. Further, the agency concluded that the significant amount of assembly design work that remained to be completed by STIDD could present a schedule risk. FPR Evaluation Results: STIDD at 4.

As for the risk assigned each proposal, STIDD's argument that its proposal offered significantly less risk than SAFT's and Yardney's is based on its view that, unlike those offerors' proposals, its own relied on mature technology. In this regard, and in contrast to its proposal of commercially available battery cells, STIDD attributes some enhanced risk to SAFT's proposal of a "modest" increase in the capacity of an existing cell, from [DELETED] amp hours (Ah) to [DELETED] Ah. STIDD attributes more significant enhanced risk to Yardney's proposal, which provided for three alternative types of design; Yardney proposed [DELETED]. Yardney Technical Proposal at 6-11, 15, 21-24; STIDD Comments, Apr. 2, 2003, at 9-10, attach. at 1-3; STIDD Comments, Apr. 28, 2003, at 23 n.19.

NAVSEA's evaluation of risk was reasonable. First, the agency evaluated SAFT's and Yardney's proposals as indicating that, unlike STIDD, those offerors possessed a full range of R&D, test and production capabilities. In this regard, NAVSEA noted Yardney's experience in bringing lithium-ion batteries from design to prototype, including its work in manufacturing the cells and assembling the batteries for the Mars Explorer Rover Battery. Further, NAVSEA determined that both SAFT and Yardney had proposed significant risk reduction activities. Thus, the agency noted that SAFT had already undertaken significant design, prototyping and test work for the ASDS, and had based its proposal on a shortened 6-month delivery schedule, rather than the 9 months permitted under the solicitation, thus building in a significant schedule margin. NAVSEA concluded that, given the advanced state of SAFT's hardware development, the proposed increase in cell amp hours from the current [DELETED] Ah to[DELETED] Ah was reasonable, and did not pose a significant risk. As for Yardney, the agency noted that it substantially mitigated risk through its proposed phased development plan, which included consideration of [DELETED], and provided for an early evaluation of the [DELETED] energy capacities. Further, the agency concluded that Yardney's proposed [DELETED] design offered a significant weight and energy capacity margin, which reduced the risk associated with the fact that the [DELETED] design of the ASDS battery was still in the engineering concept phase. FPR Evaluation: Yardney at 2.

Finally, the protest in this regard is based on the erroneous premise that STIDD's proposal indicated that the firm was proposing a compliant battery system that would require no development work. As discussed, however, NAVSEA reasonably determined that, based on the information in STIDD's proposal, its proposed battery would not furnish the required energy output at the low end of the required operating temperature range. We similarly have found that the agency reasonably determined both that STIDD allowed too little weight in its ASDS design for non-battery cell components, and that there was a significant risk that STIDD's proposed battery would be unable to meet the specification shock and vibration requirements. We conclude that NAVSEA reasonably determined STIDD's proposal to be of somewhat higher risk than Yardney's and SAFT's proposals.

The protest is denied.

Anthony H. Gamboa
General Counsel