

DECISION



**THE COMPTROLLER GENERAL
OF THE UNITED STATES**
WASHINGTON, D. C. 20548

FILE: B-216258; B-216258.2 **DATE:** September 19, 1985
B-216258.3
MATTER OF: Cosmodyne, Inc.; Goulds Pumps, Inc.;
Prosser-East Division, Purex Corporation

DIGEST:

1. Discussions are adequate if, following a diligent effort by the agency to identify deficiencies in the proposals, each offeror is made aware of the agency's concerns about its proposal and is subsequently afforded an opportunity to revise its proposal to correct the deficiencies. An agency need not furnish information in any particular form, such as by furnishing calculations, provided the nature and gravity of its concerns are communicated to the offeror.
2. Whether discussions are meaningful must be determined by examining information available at the time discussions were held. An agency is not required to reopen discussions where a deficiency becomes apparent only after the agency has evaluated data an offeror submits to correct informational deficiencies that were addressed during discussions.
3. Protester is not prejudiced by an agency's failure to advise it during discussions that its design appears to be underpowered where the protester fails to convince the agency that other offered equipment would perform as claimed.

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Cosmodyne, Inc., Goulds Pumps, Inc., and Prosser-East Division, Purex Corporation, protest the rejection of their proposals by the Department of the Navy in the first step of a two-step formally advertised procurement, solicitation No. N00104-83-Y-VQ01. We deny the protests.

Background

The solicitation was for the procurement of a portable fire pump unit consisting of a centrifugal pump driven by an internal combustion engine. Such pumps are used to control fires on Navy ships and, thus, are vital to the safety of the Navy's surface fleet. The Navy's current pumps perform poorly and have a failure rate the Navy views as dangerously high. The entire inventory of 3,000 pumps is to be replaced.

To accomplish this, the Navy conducted a two-step procurement. In response to the step one request for technical proposals (RFTP), it received 26 technical proposals from 16 firms. Following discussions, the Navy rejected all of the proposals received from nine firms. The proposals submitted by eight of these firms, including all proposals submitted by the protesters, were rejected because the Navy concluded that the engines proposed did not have sufficient power to drive the proposed pumps.

According to the Navy, the protesters' proposed designs failed to meet the following specification:

"The engine shall be capable of developing 110 percent of the required brake horsepower (BHp) to drive the centrifugal pump at rated conditions . . . when operated at any ambient air temperature in the range -20 thru 140°F."

The Navy evaluated each proposal by computing the power it thought the pump would require, by multiplying this figure by 110 percent, and by comparing the result with performance data for the proposed engine operating at 140°F. The 140°F limit was used because all of the proposed engines would produce their lowest horsepower at that temperature. Pump power requirements were calculated

using standard formulae which were not released to the protesters until after award.^{1/}

The protesters contend that the discussions held with them were not adequate to place them on notice of the alleged underpowering of their proposed equipment. They also challenge the validity and accuracy of the Navy's calculations.

Interpretation of the 110-
Percent/140°F Criterion

We first consider an allegation by Prosser-East and Cosmodyne that they were misled by the Navy concerning the meaning of the 110-percent/140°F requirements. Prosser-East asserts that the meaning of this provision was discussed at the preproposal conference and during discussions, at which time the Navy stated that the tests were not to be applied additively. Cosmodyne states that the Navy advised it during discussions that the two requirements were not additive and that it understood the Navy to say that the 110-percent requirement would be applied only at 60°F. In both protesters' views, the 110-percent/140°F requirement should be treated as met if the engine can supply 110 percent of the power required at

^{1/}The basic formula is as follows:

$$\text{BHp required} = \frac{Q \times H \times S}{3960 \times \text{eff}}$$

where H = total of head in feet,
 Q = pump capacity in gallons per minute,
 S = specific gravity of liquid being
 pumped, and
 eff = the efficiency of the pump.

A variation of this formula was used in evaluating Prosser-East's proposal. The modified formula is BHp required equals $\frac{(Q + WR) \times H \times S}{3960 \times \text{eff}}$ where the additional term, WR, accounted for losses due to water recirculation in the pump.

60°F and is capable of powering the pump at 140°F, a test both offeror's equipment would meet.^{2/}

In response, the Navy admits that it advised at least Cosmodyne that the 110-percent and 140°F criteria were not additive. However, the Navy states that it did not intend by this that it was relaxing the specification.

The Navy points out that engine performance is usually defined under standard atmospheric conditions at approximately 60°F and is corrected for nonstandard conditions. At an ambient temperature of 140°F, the Navy says, an engine will produce approximately 8.6 percent less power than it would produce at 60°F, and power can be calculated by multiplying the power available at standard temperature by 0.914 (100 percent less 8.6 percent converted to decimal format). Thus, in determining whether the 110-percent/140°F test was met, the Navy multiplied the power required by the pump by 1.1 and compared the result with horsepower multiplied by 0.914 to determine whether the power delivered could at least equal 110 percent of the power required at 140°F.

^{2/}Although Prosser-East may have relied on this interpretation in preparing its best and final technical proposal, it appears doubtful that Cosmodyne did. In Cosmodyne's best and final technical proposal, it states:

"The pump requires 27.6 horsepower at rated conditions including allowance of 2.5 G.P.M. flow for exhaust cooling. The engine will produce up to 37.1 H.P. at standard ambient conditions, and up to 32.1 H.P. at 140 degrees F ambient. Therefore, a H.P. reserve of 16% is available compared to the 10% required."

32.1 is 116 percent of 27.6, indicating that Cosmodyne assumed the 110-percent requirement applied to power available at 140°F. Had Cosmodyne believed the 110-percent factor applied at 60°F only, it presumably would have compared the pump horsepower requirement with 37.1 horsepower.

Alternatively, a second method can be employed to directly calculate the horsepower required at standard conditions. Using this method, the power required by the pump is successively multiplied by 110 percent and by a conversion factor. This method produces results that are algebraically equivalent to the results achieved using the Navy's method provided the conversion factor used is 1.094 ($1 \div 1.086$). It is possible, however, to approximate the conversion factor by simply adding 1 to the 8.6-percent engine derating factor, with results that would differ from the Navy's method by approximately 0.7. It is this approximate method in which the engine derating factor is added to 1 that the Navy refers to as "additive."

On the record before us, it is apparent that the Navy sought in good faith to explain its choice of methodology when the question arose during discussions. On the other hand, it is equally clear that the Navy may have confused offerors. During a discussion of its interpretation of the solicitation at the conference conducted in this case, the Navy was less than clear in articulating its position.

However, although we accept the protesters' contention that the Navy's explanation was misleading, we reject their interpretation of the 110-percent/140°F requirement. We do so because we believe that even if offerors had understood the Navy to say that performance would be satisfactory, provided their engines could furnish 110 percent of power required at 60°F^{3/}, the protesters were on notice that their interpretation conflicted with the solicitation requirement and, therefore, was mistaken. Omitting irrelevant portions of the solicitation language, the clause in question provides that "the engine shall be capable of developing 110 percent of . . . required brake horsepower . . . when operated at . . . 140°F." This language clearly imposes an obligation beyond that of providing 110 percent of 60°F. The clear unamended language

^{3/}Additionally, the protesters suggest that their designs were required to be capable of operating at 140°F. This adds nothing to their interpretation because an engine that can provide 110-percent power at 60°F would also provide 100 percent of derating power at 140°F if an 8.6-percent derating factor is used.

of the solicitation must be viewed as controlling^{4/} and the protesters' assertion that they reasonably believed that 110 percent was not required at 140°F must be rejected since the protesters should have known that any such material relaxation of the specification should be communicated to all offerors through a written amendment to the RFP. See Standard Conveyor Company, B-187805, Mar. 29, 1977, 77-1 CPD ¶ 220.

The Prosser-East Protest

Prosser-East further argues that the discussions conducted by the Navy were not meaningful because the Navy did not disclose the actual calculations on which it ultimately rejected Prosser-East's proposals as underpowered. Specifically, Prosser-East states that the sole reason for the rejection of Prosser-East's proposals was that the unit did not offer 110 percent of BHp at an ambient temperature of 140°F, a fact that would have been explicitly revealed had the actual calculations been made available. The Navy says it was required to disclose only the nature of the deficiency, and that it did just that during its discussions with Prosser-East.

Generally, in conducting discussions in connection with the first step of a two-step procurement, the contracting officer is required to identify the nature of the deficiencies in the proposal or the nature of the additional information required. See Defense Acquisition Regulation (DAR) § 2-503.1(e). Regarding the use of technical data, we have held that, while it is appropriate for agencies in evaluating proposals to use relevant extrinsic information such as technical data and calculations, the use of such information must be consistent with established procurement practice, including the requirement for meaningful discussions. Univox California, Inc., B-210941, Sept. 30, 1983, 83-2 CPD ¶ 395. The discussion requirement is met, however, if the agency, having diligently evaluated proposals to identify deficiencies in them, makes each offeror aware of its underlying concerns and allows offerors a subsequent opportunity to revise

^{4/}To the extent that the 110-percent/140°F requirement might be viewed as ambiguous with respect to use of the Navy's so-called "additive" approximation discussed in the text, we note that the difference in result (0.7 percent) has no effect on the outcome of the protests.

their proposals to correct the deficiencies. Univox California, Inc., B-210941.5, Nov. 14, 1984, 84-2 CPD ¶ 527. Consistent with this rule, it is not necessary for an agency to furnish information in any particular form, such as by furnishing its own calculations, provided it finds some means of communicating the nature and gravity of its concerns.

We deny this portion of Prosser-East's protest because it is clear on the record that the protester was told during discussions that the Navy considered its designs to be underpowered. In fact, the Navy appears to have not only discussed the power deficiency problem with Prosser-East, but to have furnished the firm with a written outline of its deficiencies. The outline indicated that the Navy had evaluated the firm's proposed pump as requiring an engine capable of delivering 38.3 horsepower, that the Navy's interpretation of Prosser-East's data indicated the engines proposed would deliver only 26.75 horsepower, and that it was mandatory for Prosser-East to address this problem and to furnish supporting data and calculations.

Prosser-East did furnish additional information in its best and final technical proposals. The additional information, however, did not overcome the Navy's concern because the Navy evaluators thought Prosser-East's claim of increased performance was gained by ignoring losses due to water recirculation in the pump. In this connection, the Navy points out that Prosser-East's final proposal was based on a pump efficiency of 63 percent, an increase from a 57-percent efficiency claimed in the firm's initial proposal. The increase, which was not explained by Prosser-East, is exactly equal to the difference in efficiency which the Navy calculated would result from failing to account for internal water recirculation losses.

Nevertheless, Prosser-East asserts that this portion of the Navy's evaluation was flawed because the Navy applied a formula that included the water recirculation factor.^{5/} The protester's argument is twofold: (1) that the Navy should not have applied one formula to it and another to evaluate its competitors' proposals and (2) that the Navy's evaluation is in error because

^{5/}The difference in formulas is set out in footnote 1.

Prosser-East had properly accounted for water recirculation in calculating its 63-percent efficiency. Neither argument has merit.

We do not agree that agencies necessarily should use identical formulae in evaluating all proposals. Agencies should apply similar standards of review in evaluating proposals. To do so, however, may require that different considerations be taken into account to reflect differences in proposals. Cf. Univox California, Inc., supra, (B-210941, Sept. 30, 1983, 83-2 CPD ¶ 395) (sustaining a protest where the agency failed to adequately consider detailed calculations the protester submitted in its proposal, which if correct, required different calculations than those the agency performed). On the record before us, the Navy's choice of the formula used to evaluate Prosser-East's proposals appears to have been appropriate in evaluating a proposal that did not indicate that water recirculation losses were taken into account.

We also reject Prosser-East's assertion that the Navy acted improperly in including the water recirculation factor. In evaluating best and final technical proposals in connection with a two-step procurement, it is incumbent upon the agency to determine the acceptability of those proposals. See DAR § 2-503.1(e), (f). While agencies should attempt to qualify as many firms as possible to broaden step-two price competition, they are not required to and should not accept proposals that are not shown to meet their stated requirements. As indicated, Prosser-East was clearly placed on notice during discussions of its responsibility to address and support the adequacy of its proposals with regard to power. The Navy accounted for water recirculation losses because Prosser-East failed to indicate how it had calculated the increased pump efficiency it claimed and because water recirculation losses did not appear to have been considered. Contrary to the protester's view, the Navy's action, in effect to perform a worst-case analysis in lieu of rejecting Prosser-East's proposals outright once the firm failed to adequately explain its proposal, was consistent with the Navy's responsibility in evaluating technical proposals during step one of a two step procurement to reject those firms whose proposals could not be shown to be acceptable.

The Cosmodyne Protest

During discussions, Cosmodyne was advised that the hydraulic calculations to support pump performance were missing from its proposal. It was told that it would have to provide hydraulic calculations to support its proposed pump performance. Cosmodyne maintains, however, that it was not told that its equipment appeared to be underpowered, and it says the Navy's failure to indicate this seriously impaired its ability to submit an acceptable technical proposal which, as indicated, was ultimately rejected as underpowered.

In response, the Navy says it did not determine that Cosmodyne's designs were underpowered until it evaluated additional data Cosmodyne furnished in its best and final technical proposal. The Navy further contends that it could not have been reasonably expected to evaluate this aspect of the proposal prior to conducting discussions because the data included in Cosmodyne's initial proposal was contradictory and incomplete.

We deny this portion of Cosmodyne's protest. As noted earlier,^{6/} Cosmodyne claimed that its pump would require 27.6 horsepower at rated conditions and that its engine would produce 32.1 horsepower at 140°F. A graph included in the firm's initial proposal indicated that the pump could achieve an efficiency of 67 percent. Based on these numbers, our review shows that Cosmodyne's proposed design would have had adequate power. Cosmodyne's proposal was rejected after Cosmodyne failed, following discussions, to justify its proposed 67-percent pump efficiency and, consequently, its claim that the pump required only 27.6 horsepower. In evaluating the proposal, the Navy gave Cosmodyne credit for the engine horsepower it claimed and, indeed, allowed the firm 33.45 BHp at 140°F (an increase from the 32.1 BHp Cosmodyne claimed). However, the Navy allowed Cosmodyne a pump efficiency of only 64 percent because the data submitted in the firm's best and final technical proposal appeared to have been based on fresh water testing at lower flow rates than required and would not support any higher figure. Using 64 percent, the Navy calculated that the proposed pump would require at least 30.94 horsepower with a resulting difference between available and required horsepower (33.45 less 30.94 or 2.51

^{6/}See footnote 2.

horsepower) of no more than 8.1 percent ($2.51 \times 100 \div 30.94$). The Navy concluded, therefore, that the 10-percent solicitation criterion was not met.

It is evident on these facts that it was only in response to the information submitted following discussions, in response to the Navy's request for substantiating data, that concern with the sufficiency of the design arose. It is reasonable to assume in conducting discussions both that offerors can furnish missing information to support their performance claims and that offerors will understand the potential implications of a failure to do so. In the circumstances, we do not think the Navy was required to go further than it did in its discussions with Cosmodyne. Compare Kinton Corp., B-183105, June 16, 1975, 75-1 CPD ¶ 365, p. 4 (where the agency reasonably believed the protester proposed a 1:1 testing ratio and did not realize that it had not until best and final offers were received). Moreover, the Navy was under no duty to reopen discussions once the deficiency was discovered because the deficiency at issue could not have been discovered earlier due to inadequacies in Cosmodyne's initial proposal. Ibid., p. 5.

This portion of the protest is denied.

The Goulds Protest

Goulds also complains that the first time it became aware of any underpowering deficiency in its unit was at the debriefing after award. During discussions, Goulds was advised that it had not submitted hydraulic calculations to support pump performance. It was specifically asked to do so and to explain technical pump factors such as impeller diameter, number of vanes, vane angle, number of balancing holes, velocity triangle, slip factor and similar considerations. Moreover, Gould was told to recheck its essential calculations and technical data.

The circumstances in this case are similar to those in Cosmodyne's protest to the extent that the record shows the Navy would have concluded that Goulds' pump was adequately powered had the Navy evaluated this issue prior to conducting discussions. Goulds proposed a pump efficiency of 70 percent (and contends before our office that it would achieve 73 percent) and claimed its proposed engine would deliver 34.5 horsepower (at 60°F) at a design shaft speed of 5200 rpm. Goulds' proposal indicates and the firm admitted at the conference that its efficiency claims are based in

part on proprietary pump design data. At the conference, Goulds stated that it will not release that data to the Navy. As in the Cosmodyne case, power became a significant concern because, after reviewing the analysis Goulds submitted following discussions, all of which was based on proprietary data that Goulds declined to submit, the Navy concluded that the highest efficiency it could credit Goulds was 67.5 percent.

On the other hand, Goulds, unlike Cosmodyne, was not given full credit for its claimed engine horsepower when the Navy did evaluate the power requirements of its design. In fact, Cosmodyne and Prosser-East, which proposed the same engine, were given credit for higher power than was Goulds. According to the Navy, it downgraded Goulds' claimed horsepower because it believed Goulds was proposing a stock engine, whereas Cosmodyne and Prosser-East had submitted data from the engine manufacturer indicating that higher power would be achieved by tuning intake, exhaust and other engine subcomponents.

In its argument to our Office, Goulds suggests the Navy should have known that it was proposing a tuned engine because the data it did submit corresponds to such an engine. It argues that it could have provided substantiating data had the Navy told it during discussions to provide further information concerning engine horsepower performance claims.

Having reviewed the data Goulds has submitted in this regard, we are, however, of the view that the Navy's failure during discussions to address Goulds' claimed engine performance had no bearing on the rejection of its proposal. This is because, while the data submitted in support of the protest might have been sufficient to establish that its engine could deliver the power claimed, evaluation using the Navy's formulae indicates it would still not have had sufficient power to drive the pump (assuming a 67.5 percent efficiency) at the design shaft speed Goulds proposed. Beyond the design point, moreover, Goulds' data indicates that the power required by the pump increases while the efficiency decreases. Thus, the propriety of the rejection of Goulds' proposed design as underpowered appears to depend solely on Goulds' failure to satisfy the Navy's concern regarding the performance and, particularly, the efficiency of its proposed pump.

In this respect, Goulds contends, the calculations on which the Navy concluded that Goulds' pump would achieve an efficiency of only 67.5 percent are in error. Indeed, Goulds asserts, the calculations contain numerous errors. According to Goulds, the Navy would have concluded that the pump would achieve a 72.5-percent efficiency had the calculations been performed correctly. Goulds has supported its contention by submitting a detailed technical analysis.

In response, the Navy argues:

1. Goulds' analysis magnifies minor discrepancies without addressing the Navy's evaluation fairly. The Navy says Goulds focuses on those instances in which the Navy's calculations, for example in rounding numbers, had a negative impact on the evaluation, but did not point out those instances in which the Navy's estimates favored Goulds.
2. Similarly, although Goulds cites instances in which errors were made, for example in typing equations in the materials submitted with the agency report, Goulds failed to point out that the results of the calculations were correctly reported.
3. The Navy and Goulds approach the calculation of efficiency entirely differently. According to the Navy, it calculated efficiency using well-established methods by computing the maximum theoretical efficiency and deducting losses attributable to water recirculation and mechanical and hydraulic friction caused by moving parts in the pump.

At Goulds' request, we have examined its and the Navy's calculations in some detail. Our examination indicates that the Navy did make an arithmetic error which had it been recognized at the time of the evaluation, could have resulted in an increase in the calculated efficiency of Goulds' pump from 67.5 percent to 68.4 percent.

The increase, however, would not be sufficient to have altered the Navy's conclusions that Goulds' pump was underpowered. (Nor would the increase have been sufficient to alter our conclusion that the Navy would have considered Goulds' design as underpowered giving Goulds credit for its claimed engine performance.)

We also find that while Goulds contends that the Navy's calculation is seriously in error, much of the difference in the results calculated by Goulds and the Navy is attributable to Goulds' use, in its proposal, of methods it has developed based on proprietary data it did not disclose. The differences disclosed in Goulds' critique of the Navy's calculations, moreover, stem from Goulds' choice of a method of calculating overall efficiency that differs from the method, based on a deduction of losses, that the Navy adopted.

Concerning the latter, we point out that the evaluation of predicted pump efficiency is to some degree an inexact science, requiring the exercise of judgment. Our Office has frequently pointed out that a contracting agency's judgment in evaluating proposals will not be questioned unless it is shown to be arbitrary or in violation of procurement statutes or regulations. See SDC Integrated Sciences, Inc., B-195624, Jan. 15, 1980, 80-1 CPD ¶ 44. Goulds has established that there are other formulas the Navy might have adopted that would have resulted in a more favorable evaluation of its design; Goulds has not shown that the Navy could not have reasonably selected the loss deduction method it employed.

Regarding Goulds' failure to explain and support its calculations in its proposal with sufficient data to permit the Navy to evaluate Goulds' approach, we point out that it is incumbent on offerors to demonstrate the acceptability of their proposals. See Anderson Engineering and Testing Co., B-208632, Jan. 31, 1983, 83-1 CPD ¶ 99. The Navy was not required to accept Goulds' representations on faith, see Kinton Corp., *supra*, p. 4, with the consequence that Goulds failed to support its calculations at its own risk. See Electronic Communications, Inc., B-183677, Jan. 9, 1976, 76-1 CPD ¶ 15.

For the reasons stated, this portion of Goulds' protest is denied.

Contract Modification

Finally, the protesters question a Navy modification of the subsequent contract, negotiated a month after the award, under which Hale Fire Pump Company, the awardee, is to furnish a 55-HP engine instead of a 35-HP engine that it had originally proposed. While the modification, on its face, is at no cost, the protesters argue that relaxation of many specifications actually greatly reduce Hale's costs.

Our Office will review a protest concerning such modifications only if it is alleged that at the time of award, the agency intended to modify the contract after award, Aul Instruments, Inc., B-199416.2, Jan. 19, 1981, 81-1 CPD ¶ 31, or that the modification went beyond the scope of the procurement and should have been the subject of a new procurement. Webcraft Packaging, Division of Beatrice Foods Co., B-194087, Aug. 14, 1979, 79-2 CPD ¶ 120.

There is no direct evidence that agency officials awarded the contract with the intent of modifying it after award. We will not infer such an improper intent on the basis of suspicion simply because the modification occurred within 1 month after award.

Further, a modification is not outside the scope of a procurement where the change is of a nature potential offerors would have reasonably anticipated under the changes clause. American Air Filter Co.--DLA Request for Reconsideration, 57 Comp. Gen. 567, 573 (1978), 78-1 CPD ¶ 443. Although it may be theoretically possible to satisfy the solicitation with lightweight, two-cycle engines tuned to deliver 35 to 40 horsepower, the foregoing discussions of these protests surely indicate that the performance margin would be thin, particularly at high ambient temperatures. The contract awarded is for the development and testing as well as for the production of a portable fire pump. In the circumstances, we think offerors should have anticipated the possibility of engine changes during the development and testing phases of contract performance.

The protests are denied.

Since the protests are denied, related claims filed by the parties for proposal preparation costs are also denied. Holmes & Narver Services, Inc., B-208652, June 6, 1983, 83-1 CPD ¶ 605.

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