

DECISION

THE COMPTROLLER GENERAL
OF THE UNITED STATES
WASHINGTON, D. C. 20540

119616

FILE: B-204734

DATE: June 7, 1982

MATTER OF: Walter Kidde, Division of Kidde, Inc.

DIGEST:

1. Where protestor alleges that solicitation's specifications for pneumatic fire detection system for C-141 aircraft are unduly restrictive of competition, contracting agency is required to make prima facie case that specifications are related to its minimum needs. However, once contracting agency has made prima facie case, protestor must bear burden of affirmatively proving its case. Protestor fails to carry this burden when its arguments do not clearly show that agency's determination of its actual minimum needs has no reasonable basis.
2. Contrary to protestor's assertion, procurement is not improper sole-source procurement since solicitation allowed offerors to propose new pneumatic fire detection system for agency's consideration and, even if protestor's competitor is the only firm that can supply pneumatic system, GAO has held that so long as such specification is reasonable and necessary, as shown here, the fact that only one firm or a few firms can meet it does not violate competitive procurement requirements.

Walter Kidde, Division of Kidde, Inc. (Kidde), protests the specifications for aircraft fire and overheat detection systems set forth in request for proposals (RFP) No. FD2060-81-99043, issued by the Warner Robins Air Logistics Center (Air Force), Robins Air Force Base, Georgia.

The purpose of the solicitation is to procure a fire detection system which will replace the current system on the Air Force's C-141 aircraft--a system manufactured by Kidde and used on the C-141 since it

first came into the Air Force inventory. The specifications call for a pneumatic-type fire detection system. Kidde, however, produces an electronic-type system and, therefore, argues that the specifications are unduly restrictive of competition and that the RFP is in fact an improper sole-source procurement with the Systron-Donner Corporation (SDC), a manufacturer of a pneumatic-type system.

We find no merit to Kidde's protest.

The Air Force has been flying the C-141 since the 1960's. The Kidde electronic fire detection system, which has been used in the C-141 over the years, is a single-loop system. This system consists of electronic sensing elements located in key spots about the engine to detect fire or overheat conditions. The sensing elements are connected together by a wire which leads out and then back again to a control box, hence a "single loop." The sensing element for the electronic system contains thermistor material which triggers an alarm in a remote indicator in the aircraft cockpit when a change in resistance is caused by a fire or overheat condition in the vicinity of the element.

The operation of the pneumatic system is much like that of the electronic system, but the key difference is in the sensing element. In the pneumatic system, the sensing element contains an inert gas and a certain core material which sense a change in pressure caused by a fire or overheat condition in the vicinity of the sensing element. The pressure change causes a switch to be thrown which in turn triggers the remote indicator in the aircraft cockpit, warning the crew of the danger.

According to the Air Force, the current electronic system is not reliable because it signals too many false fire warnings. The Air Force explains that many of the false warnings are due to the contamination of the electronic system connectors by moisture or foreign substances or due to short circuits in either the sensing elements or the connectors. The Air Force also notes that the sensing elements are often damaged during normal maintenance and these damaged elements in turn trigger false fire warnings.

The false fire warnings have resulted in fuel dumping, aborted missions and in the discharge of engine fire extinguishers. Moreover, these difficulties with the electronic system increased the costs and problems of maintenance. Starting in 1975, Air Force technical personnel began to study the problem and eventually concluded that the solution was the replacement of the electronic system with a pneumatic one. In their opinion, the pneumatic system would be more reliable, easier to maintain, less subject to damage during maintenance and would greatly reduce the rate of false fire warnings. As part of this study, one C-141 was fitted with an SDC pneumatic system and a service test was conducted over a 1-year period during which time the aircraft flew regular missions and accumulated a total of 1171.3 flight hours. The Air Force reports that during this test not one false fire warning occurred.

Initially, the Air Force issued a sole-source solicitation to SDC for the equipment needed to refit its entire fleet of C-141's. Kidde, however, filed a protest against the use of a sole-source procurement. The contracting officer agreed to cancel the sole-source solicitation and Kidde withdrew its protest. More than a year passed before the Air Force issued the present solicitation. Paragraph 1.1 of the specification in this RFP stated that the new fire detection system had to be of the pneumatic type, but paragraph 3.3.1, as amended, also stated in pertinent part:

"In lieu of an existing system, with all major components having service experience, the contractor may propose a new system with major components having successfully met the requirements of MIL-STD-810C qualification test."

As indicated above, Kidde believes that the requirement that the new fire detection system be of the pneumatic type is unduly restrictive of competition. Its various arguments in support of this contention can be summarized as follows:

- (1) the Air Force has unfairly compared Kidde's almost 20 years' old system with SDC's latest pneumatic system and has refused to examine Kidde's newest electronic system in the same detail as it has tested and examined SDC's latest system; if fairly evaluated, the newest Kidde system would satisfy the Air Force's requirements;
- (2) the Air Force has, in effect, exaggerated the benefits of SDC's pneumatic system and downplayed the significance of Kidde's new system; the SDC pneumatic system, for example, has not performed well on the Air Force's fleet of T-78's and all the Air Force's complaints about the old Kidde system would be answered by Kidde's new dual loop system (two paralleled sets of sensing elements which require both sensors to agree on a fire condition before a warning will be given) with a single pin, hermetically sealed, noncoaxial connector plus other relatively simple installation and maintenance procedures which would minimize or eliminate chafing damage to various parts of the fire detection system--chafing damage being a major cause of false fire warnings;
- (3) the Air Force's use of only one C-141 to test the SDC system and its refusal to test Kidde's latest equipment side-by-side with SDC clearly show that the Air Force has used faulty procedures in determining its minimum needs; and
- (4) the Air Force's claim that only a pneumatic system will meet its minimum needs is contradicted by the fact that Kidde's electronic system has recently been selected for installation on both the F-5G and KC-135 aircraft.

Based on these arguments, Kidde concludes that the Air Force's decision to restrict this procurement to only pneumatic systems is not rationally related to the agency's actual minimum needs and is, therefore, arbitrary.

In rebuttal, the Air Force states that its determination that its minimum needs can only be met by a pneumatic-type system is reasonable. It points out that this decision is based on years of experience with the Kidde system as well as years of study on the problems of the C-141. The Air Force further argues that it did in fact review Kidde's latest electronic system and found that the basic weaknesses it has identified in the system design are still present in the new Kidde system. As to the use of only one C-141 to test the SDC system, the Air Force points out that this is a standard procedure which is used to evaluate the effectiveness of a system under normal operating conditions. In regard to the false fire warnings experienced with the SDC system on the T-38, the Air Force notes that this is directly attributable to an engine modification which was ordered after the pneumatic system had already been installed and which interfered with a particular sensing element. According to the Air Force, this problem is being corrected by a rerouting of the system's wiring which will eliminate the interference. As to the installation of a Kidde electronic system on the F-5G and KC-135 aircraft, the Air Force maintains that a fire detection system suitable for the F-5G is not necessarily suitable for the C-141. In the Air Force's opinion, such things as the electronic system's susceptibility to maintenance damage and its inability to withstand the harsh, quick-engine-change environment peculiar to the C-141 make that system inferior to a pneumatic system for application to the C-141.

At the outset, we note that the determination of the Government's minimum needs and the best method of accommodating those needs is primarily the responsibility of the contracting agencies. More specifically, we have recognized that the Government procurement officials, since they are the ones most familiar with the conditions under which supplies, equipment or services have been used in the past and how they are to be used in the future, are generally in the best position to know the Government's actual needs. Consequently, we will not question an agency's determination of its actual minimum needs unless there is a clear showing that the determination has no reasonable basis. Frequency Electronics, Inc., B-204483, April 5, 1982, 82-1 CPD 303.

However, when a protester challenges a specification as unduly restrictive of competition, the burden is on the procuring agency to establish prima facie support for its contention that the restrictions it imposes are needed to meet its minimum needs. But once the agency establishes this prima facie support, the burden is then on the protester to show that the requirements complained of are clearly unreasonable. Mid-Atlantic Industries, Inc., B-202682, August 26, 1981, 81-2 CPD 181.

As indicated above, the Air Force has defended its decision to restrict this procurement to pneumatic fire detection systems by presenting evidence of continuous problems with the current Kidde electronic system as well as evidence that a pneumatic system will reduce or eliminate these problems. We find that this is the prima facie support that the contracting agency must provide when a protester challenges a specification as unduly restrictive of competition. In light of this, the burden is thus on Kidde to prove that the Air Force's requirement for a pneumatic system is clearly unreasonable.

Kidde recognizes that it must carry this burden of proof. Therefore, in support of the general arguments summarized above, Kidde has presented detailed arguments, many of them quite technical in nature, to demonstrate that the Air Force's requirement for a pneumatic system is without a reasonable basis. We have already noted that the determination of an agency's minimum needs is largely a matter of discretion on the part of the agency's contracting officials. It is also important to note that a procuring agency's technical conclusions concerning its actual needs are entitled to great weight and will be accepted unless there is a clear showing that the conclusions are arbitrary. Industrial Acoustics Company, Inc., et al., B-194517, February 19, 1980, 80-1 CPD 139. Kidde concedes that it is not the function of this Office to conduct an independent analysis of a contracting agency's minimum needs. What Kidde does argue is that our Office can review the agency's analysis of its minimum needs and, if that analysis proves to be faulty, we can find the agency's minimum needs determination to be without a reasonable basis. In support of this argument, Kidde cites our decision

in the matter of Memorex Corporation, B-195053,
April 7, 1980, 80-1 CPD 253.

In Memorex Corporation, we found that a specification requiring disk drive interchangeability at the "device level" under a Department of the Army solicitation for plug-to-plug compatible disk storage equipment was not rationally founded and, therefore, unduly restrictive of competition. We reached this conclusion after determining that the mathematical analysis that the agency used to justify this requirement was faulty--in other words, the mathematics had been performed incorrectly. Thus, in Memorex Corporation, it was relatively clear that the contracting agency's technical conclusions did not support the agency's claimed minimum needs.

Here, however, the Air Force's determination of its minimum needs is based on several grounds--grounds which, in contrast with the Memorex case, rest far more on discretion than on objective formulas. In trying to show that the Air Force's various analyses are faulty, Kidde has challenged the Air Force's technical conclusions with technical arguments of its own. For example, Kidde has gone into great detail analyzing the problems that the SDC pneumatic system has had on the T-38, providing figures contrasting the meantime-between-failures and the mean-time-between-maintenance for the Kidde-equipped C-141. Likewise, Kidde has explained the advantages of its latest electronic system, how this system is in many ways superior to a pneumatic system and how it will correct the deficiencies experienced with the older electronic system. Kidde has also stressed the importance that ch. firing damage has played in the poor performance of the old Kidde system, contrasted that with the similar problems experienced with the T-38's pneumatic system and recommended changes in the installation and maintenance of the C-141's fire detection system to eliminate this problem in the future.

For each of Kidde's technical arguments, the Air Force or SDC has presented counterarguments. Thus, in the final result, we are not presented with something like the clear-cut error in mathematics as found in the Memorex Corporation decision, but, rather, with a technical dispute. In other words, Kidde has not shown

that the Air Force's technical conclusions were arbitrary, unreasonable, but only that it can be argued that these conclusions were wrong. We have held that such an argument does not satisfy the protester's burden of proof. See, for example, EMI Medical Inc.; Picker Corporation, B-195487, February 6, 1980, 80-1 CPD 96; see also, London Fog Company, B-205610, May 4, 1982, 82-1 CPD _____. Overall, Kidde has not shown the expert technical opinion of the agency to be unreasonable.

In addition, while we agree with Kidde that the best way of comparing SDC's system and Kidde's latest system would have been to have tested both in an identical fashion, we do not believe that the Air Force's failure to conduct a flight test on Kidde's newest electronic system rendered its minimum needs determination unreasonable. The Air Force has stated that its technical personnel did in fact analyze Kidde's newest system and still found it inadequate. Moreover, the record has been documented with Federal Aviation Administration reports on the Kidde fire detection systems installed on commercial aircraft such as the Boeing 707 and 727. These reports indicate that Kidde's latest system continues to have some of the defects of the older system. The Air Force's use of this information, plus its own technical analysis, as a means of evaluating the new Kidde system was, in our opinion, reasonable and provides a rational basis for the agency's minimum needs determination.

As to the installation of Kidde electronic systems on the F-5G and KC-135, this alone does not show that the Air Force was unreasonable in concluding that an electronic system did not meet its minimum needs. The Air Force has explained that the particular engine environment of the C-141 is unsuitable for Kidde's electronic system. Moreover, in view of our foregoing discussion, we have found no basis to question the Air Force's technical conclusions. Therefore, merely because the Air Force has found the electronic system to be suitable for some purposes does not mean that the system is suitable for all purposes. Consequently, we find no merit to this argument.

We conclude that Kidde has not shown that the Air Force's determination of its actual minimum needs has no reasonable basis. As a result, Kidde has failed to

carry its burden of affirmatively proving its case and we have no basis to find the specification in question unduly restrictive of competition. Mid-Atlantic Industries, Inc., supra.

Concerning Kidde's claim that the RFP is an improper sole-source procurement in the guise of a competitive procurement, we note that the RFP specifically provided that offerors could propose a new pneumatic system. Nevertheless, Kidde argues that only SDC could possibly offer a pneumatic system. However, we have held that, if a specification is reasonable and necessary, as we have concluded here, the fact that only one firm or a few firms can meet it does not violate competitive procurement requirements. 45 Comp. Gen. 365 (1965); Gerber Scientific Instrument Company, B-197265, April 8, 1980, 80-1 CPD 263. Therefore, we do not find that this procurement is an improper sole-source procurement as Kidde claims.

Protest denied.

Milton J. Bowler
for Comptroller General
of the United States