DOCUMENT RESUME

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[Protest against Allegedly Defective Specifications]. B-189886. January 9, 1978. 5 pp. + enclosure (1 pp.).

Decision re: Science Spectrum; by Paul G. Dembling (for Elmer B. Staats, Comptroller General).

Issue Area: Federal Procurement of Goods and Services: Definition of Performance Requirements in Relation to Need of the Procuring Agency (1902).
Contact: Office of the General Counsel: Procurement Law II.
Budget Function: General Government: Other General Government (806).
Organization Concerned: National Aeronautics and Space Administration: Lewis Research Center, Cleveland, OH.
Authority: B-187126 (1976). B-174770 (1972). B-169365 (1970). B-188920 (1977). B-188921 (1977). 53 Comp. Gen. 478.

A protester to a proposed contract award requested that the solicitation be cancelled on grounds that specifications were defective and contended that a certain requirement should be deleted. The protest was denied because the allegation that performance requirements in specifications cannot be met was not supported. There was no showing that the requirement should be deleted as it did not exceed agency's minimum needs or render the contract impossible to perform. (HTW)

DECISION

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

FILE: B-189886 DATE: January 9, 1978

MATTER OF: Science Spectrum

DIGEST:

1. Protest that specifications are defective is denied where protester has not supported its allegation that performance requirements in specifications cannot be met using general design described.

2. Protest that requirement for unattended operation of electro-optical particle sensor should be deleted is denied because protester has not shown that this requirement exceeded the agency's minimum needs or that it rendered the contract impossible to perform.

Science Spectrum protests the proposed award of a contract under Request for Proposals (RFP) 3-718595, issued by the National Aeronautics and Space Administration (NASA) Lewis Research Center, Cleveland, Ohio. The RFP requested proposals for an electro-optical particle sensor. Science Spectrum requests that the RFP be cancelled on the grounds that the specifications are defective.

The subject particle sensors are to be used in conjunction with pulse height analyzers that are part of NASA's Global Air Sampling Program (GASP). The purpose of this program is to gather data on minor constituents in the upper atmosphere, making a data base to aid in studies of the atmosphere and atmospheric pollution. An automated measuring system has been installed on four aircraft used in regular commercial service and is designed to measure six different atmospheric constituents and to automatically re these data on magnetic tape along with pertinent aircraft pos and meteorologic data.

NASA has provided a narrative description of the required equipment, as follows:

> "The kind of sensor specified in the subject RFP is one which measures particles in a sample air stream by detecting light scattered by each particle as it passes through an illuminated sensing volume. * * * The scattered light is optically collected over some solid angle (depending on individual sensor design) and detected with some kind of photo sensor. Since a particle is in the illuminated volume for only a short time, scattered light falls on the photo sensor for only a short time and the resultant output signal is an electrical pulse. Under certain conditions, the amount of scattered light and therefore the amplitude of the electrical pulse can be related to the size of the particle. These conditions can be met with latex particles used to calibrate the sensor. In this case, then, both the number and the size of the particles can be measured in the sense that their scattering characteristics are equivalent to the calibration particles. In GASP the intent is to count the number of particles and sort them into five equivalent size categories through the use of an existing pulse height analyzer."

The specification for the particle sensor contains both a general description of the instrument and performance requirements. The specification provides in part, that

> "The sensor shall incorporate wide angle optics which collect particle-scattered light over the range of near-forward to right-angle scattering. The included solid angle shall be greater than five steradians."

Other sections specify how the flow of particles is to be directed through the sensor and how the sensor is to be automatically calibrated.

The protester asserts that a sensor constructed pursuant to the general design described above cannot meet the measurement accuracy requirements in the specifications. For example, the sensor must be capable of detecting all particles greater than 0.3 micron, equivalent diameter, entering the sample tubing and calibration must be made using at least five latex particles of

different diameters showing compliance with the standard deviation of pulse height for specified particle diameters. The protester contends that a particle sensor meeting the general design requirements cannot be calibrated because even the specified latex calibration particles will yield inconsistent results. The protester states that tests performed on a system similar to that specified in the present procurement yielded "inconsistent results." The protester also argues that the proposed calibration particles are irrelevant to the atmospheric particles which the particle sensor will be used to measure. The firm asserts that: (1) the specified sensor measures, at best, the total scattering cross section of the particle; (2) the total scattering cross section bears no monotonic relationship to particle size in the "resonance region" (i.e., the range of particle sizes to be measured); (3) the electro-optical pulse measured by the sensor when the particles are light-absorbent will not be proportional to the total scattering cross section because light absorbed by the particle will not be detected by the sensor; (4) inhomogenous, anisotropic and irregularly-shaped particles will yield electro-optical pulses bearing even smaller correlation with their projected geometrical area; (5) calibration of the instrument with latex particles will not enable the instrument to measure real particles with unknown refractive indices; and (6) particles which enter the sensor off the optical axis will be perceived differently by the detector.

NASA has responded that the previously-conducted tests cited by the protester were conducted on near-forward angle scattering instruments, whereas the specified instrument allows collection over any solid angle greater than five steradians. The protester subsequently has conceded that the test particles would probably have a near linear response in the Climet unit, one type of unit meeting the specified design, provided the particles were insured an injection on the correct optical axis. The protester has not contended that particles could not be so injected into the proposed sensor.

NASA concedes that the instrument may be able to measure only the total scattering cross section. However, NASA asserts that this measurement should bear a monotonic relationship to particle size, even in the "resonance region." The protester has conceded that integrated "side" scattering measurements should yield equivalent monotonicities in instrument response for non-absorbing, spherical particles. NASA concedes that the instrument could yield erroneous results for light-absorbent particles but a significant concentration

of absorbing particles is not anticipated in the regions to be measured. The agency also admits that erroneous results could occur where the particles are anisotropic, inhomogeneous and irregularly-shaped but that such unpredictable measurements are common practice in high-altitude atmospheric particle measurement, citing several examples of such measurements.

This Office has long recognized the broad discretion of procuring activities in drafting specifications reflective of their minimum needs. We will not disturb a procuring activity's determination of minimum needs unless it is clearly shown to be without reasonable basis. Tele-Dynamics Division of Ambac Industries, Inc., B-187126, December 17, 1976, 76-2 CPD 503; B-174770, July 14, 1972; B-169365, June 30, 1970.

We conclude that the protester has not shown that the solicitation was defective due to impossibility of compliance with the calibration requirements. We are not persuaded that the solicitation did not reflect the agency's minimum needs. In our opinion the protester has not proven that an instrument meeting the general description contained in the solicitation is not capable of being calibrated using the specified test particles. The evidence it relies upon to question the unit's accuracy relates to a different design which could have responses different from the wide angle optics specified in the solicitation. The protester admits that, given certain conditions, the test particles would probably have a near-linear response in a unit meeting the solicitation's general design description. Ultimately the protester seeks to persuade the Government to require no less than the type of equipment it produces. Its equipment is of a higher order and more expensive and under certain circumstances produces reliable measurements of particle size for nonspherical or light-absorbent particles. In our opinion, however, the fact that the protester's particle sensor might achieve superior measurements of the size of certain types of particles does not render the instant specifications defective. Furthermore, GAO will not consider bid protest objections concerning an agency determination that less restrictive specifications will meet the Government's needs in the absence of a clear showing that the Government's specifications are defective. See Transtector Systems and Joslyn Mfg. & Supply Co., B-188920, B-188921, September 19, 1977, 77-2 CPD 202.

Finally the protester contends that the requirement that the particle sensor be automated should be deleted from the solicitation. The agency has asserted that automatic operation is essential because the particle sensor is to be integrated into an existent automated measuring system. The protester does not argue that this requirement exceeded the agency's minimum needs, Cf. Winslow Associates, 53 Comp. Gen. 478 (1974), 74-1 CPD 14, and it has not been shown that the automatic-operation requirement rendered the solicitation unduly restrictive.

Accordingly, the protest is denied.

Paul G. Dembling

For the Comptroller General
of the United States

Keith Baker

UNITED STATES GOVERNMENT
GENERAL ACCOUNTING OFFICE PL2

Memorandum

TO : Director, PSAD - Richard W. Gutmann January 9, 1978

FROM : General Counsel - Paul G. Dembling

SUBJECT: Technical Opinion on Protest by Science Spectrum, Inc. (B-189866)

We appreciate the rapid assistance rendered by Dr. John G. Barmby of your staff which was helpful in preparing the attached bid protest decision.

Attachment