



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

D-173526

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August 15, 1973

Salco Inc.  
23 Arrow Street  
Cambridge, Massachusetts 02138

Attention: Mr. William W. Ahern  
President

Gentlemen:

Reference is made to your letter of June 19, 1973, and prior correspondence, protesting against the award of a contract to Electronic Space Systems Corporation (ESSCO) under Request for Quotations (RFQ) DAHC6C-73-Q-0126, issued by the U.S. Army Safeguard System Command, Huntsville, Alabama.

The RFQ was issued on January 9, 1973, for the procurement of telemetry antenna radomes on a sole-source basis from ESSCO. As the result of an inquiry from your firm, the procurement was changed to a competitive basis. Both your concern and ESSCO submitted proposals by the closing date of February 9, 1973, with prices as follows:

Salco	\$138,134
ESSCO	\$160,000

The Army rejected your proposal, by letter of March 22, 1973, as being technically unacceptable for failure to comply with the requirements of paragraph 3.4 of the specifications. On April 11, 1973, award was made to ESSCO, the lowest-priced technically acceptable offeror.

By letter of April 24, 1973, you protested to our Office. Your basic contention deals with paragraph 3.4 of the specifications and the ability of the offerors to offer equipment complying with it. Paragraph 3.4 provided in pertinent part:

"3.4 Radome Electromagnetic Characteristics -  
The design of the radomes shall optimize the electro-  
magnetic propagation characteristics of the antenna/

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radome installation. The antenna characteristics shall not be degraded by the radome more than specified below.

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3.4.4 Transmission Loss of Radome - shall not exceed 0.50 db with dry radome and 0.75 db with 40 mm/hr of rain."

Your offer took exception to this requirement because you believe that the best available test data shows that no radome meeting the structural and environmental requirements of the specification will meet the specified transmission loss requirement during 40 mm/hr of rain. Your contention is therefore that the Army erred in establishing a specification requirement which is beyond the state of the art, in rejecting your proposal for taking exception to such specification, and in accepting ESSCO's proposal as purporting to comply with it. In addition, you have questioned why award was not made to your company, since you were the low offeror and your radomes are generally superior to ESSCO's, and why you were not informed of the award.

The administrative report advises that available test data on transmission loss caused by rain on rigid frame radomes consists of two studies. The first is an ESSCO study which was published in 1966. The second, entitled "Effect of Rain on Radomes," is of more recent origin and was sponsored by an affiliate of your concern. ESSCO included its test data as part of its proposal. Your study was furnished to the contracting agency on March 30, 1973, after your proposal had been rejected as technically unacceptable.

The two test studies reached different conclusions as to the amount of transmission loss to be expected from a 40 mm/hr. rain. The contracting officer has summarized the reasons why, after technical evaluation, the contracting agency determined that the ESSCO test data established that its radome could meet the transmission loss requirements and why the Selco test data did not override this conclusion:

"The test data from Selco was compared with the test data ESSCO submitted as part of their proposal.

(1) The following points were noted in the tests ESSCO conducted on their radome:

- (a) A full size 55-foot diameter radome was tested.
- (b) Three adjustable rotating water sprinklers and rainfall indicators were used to establish the desired rainfall rate.
- (c) A 30-foot parabolic antenna was mounted in the radome to receive the transmitted test signal.
- (d) A 6-foot parabolic antenna was used as the transmitting antenna.
- (e) With the transmitting and receiving antennas calibrated, the signal transmission loss through the radome was recorded at various rainfall rates.

(f) In comparison, the following points were noted in the tests conducted on the Selco radome:

- (a) A full size radome was not used, only seven panel segments from a 40-foot diameter radome.
- (b) An attempt was made to establish a uniform film of water on the panels with rain simulators. Losses through the panels were measured with a transmitting and receiving antenna. Because of the 'fairly large spread in the results, mainly due to difficulties in reproducing the surface condition from one measurement to the next,' an equivalent uniform water film thickness was computed for different rainfall rates.
- (c) The final radome test results were derived by using the computed water film thickness and assuming a uniformly illuminated transmitting antenna mounted inside the radome."

The contracting officer also rejected the conclusion in your test data that all radome surface membrane materials result in the same transmission loss--specifically, that Tedlar (the brand name surface coating used by EBSCO) has the same results as Selcoat (the brand name coating which your concern uses):

"(3) The conclusion drawn by Selco cannot realistically be applied to ESSCO's radomes because of the following deficiencies noted in reaching the above conclusions:

- (a) The panel segments being used were not ESSCO's membranes which are a proprietary product of ESSCO and have water-shedding capabilities of their own which are enhanced by the Tedlar film (which is a product of DuPont).
- (b) The Selco report states that the Tedlar sheet 'was draped over a panel under test.' This test set-up is not considered to be a valid test procedure for determining the transmission loss of ESSCO panel materials, since the Tedlar film used by ESSCO is treated and integrally bonded to the panel membrane under high pressure and temperature to enhance the panel membrane's water-shedding ability. Considering all of the above and both reports, the following conclusion is reached: The figures pertaining to the Selco panels and Selcoat contained in the Selco report agree with Selco's proposal in that the Selco radome will not meet the transmission loss requirements. The report submitted by Selco does not substantiate Selco's claim that no other radome can meet the transmission loss requirements. Test data submitted by ESSCO substantiates their offer to comply with the transmission loss requirements of the Scope of Work."

In your letter of June 19, 1973, to our Office commenting upon the Army's report, you criticize the ESSCO test data as being "rudimentary" and further contend that the Army's reliance thereon is arbitrary. You question the objectivity of the ESSCO data, since the tests were performed in-house, and also raise questions concerning its scientific methodology--for example, the method of rainfall simulation used and the fact that the tests were performed at only one antenna elevation angle. You also question whether the ESSCO test data actually states that transmission loss in a 40 mm/hr-rain is less than .75 db.

Initially, we note that the ESSCO study states at page 6 that the following conclusions were reached:

"The results of the measurement program show that even with rain rates as high as 40 mm/hr. the transmission loss through the untreated surface of a 55-foot rigid metal space frame radome is only 1.0 - 2.7 dB. The transmission loss decreases to 0.8 - 1.2 dB at 20 mm/hr. and to 0.3 - 0.5 dB at 10 mm/hr.

If the radome surface is treated so as to inhibit the formation of any water film, the transmission loss will decrease to less than 0.3 dB at the highest rain rate of 40 mm/hr. \* \* \*

As far as the objectivity of the study is concerned, there is no indication on its face that the tests were conducted in other than good faith. It is also stated that the tests were witnessed by an outside observer, Dr. John Ruse of the Massachusetts Institute of Technology, who subsequently reported the results at a scientific conference in 1966.

The central issue in this controversy does not appear to be the sponsorship or the results of the tests themselves but the scientific methodology employed in the testing. As stated above, you have questioned certain aspects of ESSCO's testing procedures; however, it is noted that your June 19, 1973, letter did not reply directly to the Army's criticism set forth in the contracting officer's statement of certain aspects of your testing procedures.

Our Office does not possess the resources to render an independent scientific judgment on the merits of a technical issue as the one involved here. In such situations, in view of the wide range of discretion vested in the contracting officials, we must defer to their judgment unless evidence is presented which clearly demonstrates that the technical determination is incorrect, E-176395, June 15, 1973, 52 Comp. Gen. \_\_\_, or which otherwise shows that the contracting officials acted arbitrarily. 49 Comp. Gen. 156 (1969); 48 *id.* 314 (1968). In the present case, resolution of the question of the optimum scientific methodology to be employed in such tests, and the accuracy of the results derived therefrom, will apparently have to await the results of further research. We do not believe your allegations clearly demonstrate that

the Army's conclusion in this matter was incorrect. Also, the record adequately demonstrates that the contracting officials acted upon careful consideration of the technical issues involved and not in an arbitrary manner. Nor has any showing been made that the specified transmission line requirement does not represent the minimum needs of the Army.

With regard to your question why award was not made to you as the low offeror, and your contention that your radomes are technically superior overall to ESSCO's, it must be noted that the competitive range in a negotiated procurement encompasses both price and technical considerations, 50 Comp. Gen. 1 (1970). Either factor can be determinative of whether an offeror is within the competitive range, and price need not be considered when a totally unacceptable technical proposal is submitted, 52 Comp. Gen. 382 (1972). In the instant case, you took exception to one of the basic requirements of the Government's minimum needs as set forth in paragraph 3.4 of the specifications. The Army in its technical evaluation determined that your proposal was technically unacceptable for this reason and also that your proposal could not be made acceptable without major revisions. Under these circumstances, the Army was under no obligation to enter into technical discussions with you, 51 Comp. Gen. 431 (1972); B-169438, August 19, 1970. Though you offered a lower price, and though it is possible that your radomes may be superior in an overall sense to ESSCO's, the fact remains that ESSCO submitted the lowest-priced technically acceptable offer, and award to ESSCO under the circumstances is not subject to objection.

As to your question why you were not informed of the award to ESSCO, we agree with the rationale of the contracting officer's report that stated that since a notice of technical unacceptability was sent to you dated March 22, 1973, pursuant to Armed Services Procurement Regulation (ASPR) 3-508.2(a), no notice of the subsequent award was legally required to be made. See ASPR 3-508.3(a). In this regard, we note that you met with Safeguard's contracting officials on March 30, 1973, to discuss this matter, at which time you provided them with the more recent test data discussed above. Apparently the parties left this meeting with different impressions concerning its results. Though the contracting officials agreed to receive your test data, their belief, documented in a memorandum in the contract file, is that you were informed that the determination of technical unacceptability was final and conclusive. You, on the other hand, apparently received the impression that the Army would reevaluate the technical specification and your proposal. While it is regrettable

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that a misunderstanding occurred, based on the written record we must conclude that there was no failure to comply with the notice requirements set forth in ASFR.

In view of the foregoing, we find no legal basis for objection to the award, and your protest is denied.

Sincerely yours,

Paul G. Dembling

For the Comptroller General  
of the United States