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IN REPLY REFER TO:  
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SEP 16 1976

Major General E.A. Rafalko  
 Commander, Ogden Air Logistics  
 Center  
 Hill Air Force Base, Utah 84406



Dear General Rafalko:

The General Accounting Office (GAO) has completed a pricing review of firm fixed price contract F42600-74-1894, awarded by Ogden Air Logistics Center (OALC), on February 20, 1974, to California Microwave, Inc. (CMI). The contract, as amended, was for the purchase of 284 microwave signal analyzers, six radar simulators, and various data at a negotiated price of \$6,769,943. At the time of our review, delivery of an initial 125 signal analyzers, priced at \$3,143,875, had been completed. Based on CMI's actual costs to date, and projected estimates to completion, it does not appear the overall contract price will be excessive. However, we are concerned that the procedures followed by OALC in evaluating the contractor's proposal and negotiating the contract were not in accordance with provisions of the Armed Services Procurement Regulations (ASPR). In summary, we found the contractor's proposal and OALC's evaluation of it to be inadequate.

The ASPR requires that cost or pricing data submitted by a contractor in support of its proposal include--"all facts which can reasonably be expected to contribute to sound estimates of future costs as well as to the validity of costs already incurred." This should include data relating to any anticipated change in production methods as well as data upon which the contractor's judgment of estimated future costs are based. The ASPR also requires that DOD perform a cost analysis of the contractor's cost or pricing data to form an opinion as to the reasonableness of the proposed costs. The ASPR further requires that the cost analysis include a review and evaluation of the judgmental factors applied by the contractor in projecting from historical data to costs estimated under the contract.

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We reviewed data and documents available in the contractor's price proposal and contract files, and Defense Contract Audit Agency (DCAA) and Defense Contract Administration Region (DCASR) reports and supporting workpapers. We also interviewed contractor and Government officials, including the appropriate OALC price analyst responsible for the procurement. Our objective was to ascertain the adequacy of the cost or pricing data submitted by the contractor in support of his proposal and the adequacy of the cost analysis and reviews performed by OALC, DCASR, and DCAA.

CONTRACTOR'S PROPOSAL AND GOVERNMENT'S  
EVALUATION OF ASSEMBLY LABOR COSTS

CMI proposed assembly labor costs of \$175,364 for the initial 125 of the 284 microwave signal analyzers called for in the contract. In support of this cost, CMI's proposal cited and referenced historical data experienced on a previous sale of 18 analyzers to the Air Force, adjusted for anticipated improved assembly techniques, design changes required by the Air Force, and changes in labor rates. The proposed assembly labor cost included \$120,166 for the 106 analyzers called for in the initial request for quote; \$21,186 for the 19 analyzers subsequently added by the Air Force; and \$34,012 for design changes required by the Air Force. However, the cost or pricing data submitted by CMI did not adequately disclose the specific source data and rationale for the judgmental factors used to estimate these assembly labor costs.

For example, although CMI's proposal addressed the impact of new production assembly techniques on historical costs by estimating a 30 percent reduction in unit assembly labor costs and applying a 90 percent learning curve to the remaining costs, both the DCASR and OALC technical evaluators were unable to analyze the reasonableness of these adjustments to historical costs because neither CMI's proposal nor personnel provided supporting data to satisfactorily explain why these adjustment factors were selected. When asked by the DCASR evaluators to explain the basis for the 30 percent cost reduction factor, CMI responded it was judgmental and that they "pulled it out of the air." Furthermore, OALC was not satisfied with CMI's use of a 90 percent learning curve in changing from the job shop operation under the previous sale to a production shop operation under the OALC procurement.

Despite these weaknesses in CMI's proposal and supporting data, OALC did not request CMI to revise its proposal to more clearly identify the basis and rationale for proposed costs. Instead, the OALC price analyst developed an independent estimate of assembly labor hours by applying his own judgmental factors to historical data from the contractor's previous

job order operation. In doing this, the OALC price analyst rejected CMI's use of an arbitrary 30 percent cost reduction factor, but applied a steeper, seemingly arbitrary learning curve to the historical data.

The DCASR technical evaluator stated in his report he could not understand the "manipulations" made by CMI in proposing assembly labor hours. However, he did not obtain clarification from CMI. Instead he developed his own independent estimates based on his expertise and past experience.

Our comparison of CMI's cost of performance with the negotiated cost by element for the 125 signal analyzers showed a significant cost underrun in direct labor. The negotiated \$596,620 direct labor cost for the 125 units exceeded CMI's reported costs incurred by \$126,614 or 21.2 percent. Further analysis disclosed a significant portion of this labor cost underrun was attributed to a 17,182-hour (40.5 percent) underrun in assembly labor. The negotiated cost for assembly labor exceeded CMI's cost incurred by an estimated \$70,000.

When we questioned CMI concerning the reason for the 40.5 percent underrun in assembly labor cost, we were provided several possible explanations for about \$37,000 of the \$70,000. But for the remaining \$33,000 underrun, CMI had no explanation whatsoever.

In our opinion, it would have been difficult or impossible for CMI to explain the cause of the underrun because the basis and rationale behind the adjustments to historical cost at the time the contract was negotiated were neither identified nor explained. Thus, there would be no way of knowing in specific terms what caused the underrun. We believe CMI should have been required to submit additional and more complete cost or pricing data in support of its proposal, especially the specific changes in production assembly methods anticipated under the contract and the factors and data considered in arriving at the effect of these changes on past historical assembly labor costs.

COMMENTS OBTAINED FROM  
OALC PRICE ANALYST

Our observations on the manner in which assembly labor hours were proposed and evaluated were discussed with the OALC price analyst who was a member of the team which negotiated the contract. He stated independent cost estimates and personal judgment was relied upon to evaluate the proposal, and CMI was not asked to submit more specific information on its proposed assembly labor costs for the following reasons:

--The process of obtaining and evaluating additional information would have been lengthy and time consuming, and the negotiating team was under time constraints to award a contract.

--Additional information would probably not have significantly altered the proposed costs since the same historical data would still have been used as the basis for any new estimates.

--Historical data provides known factors to work with and eliminates arguments over estimates and opinions.

While the use of independent Government cost estimates and personal judgment can be helpful when evaluating a contractor's proposal and establishing negotiation objectives, it should not replace a thorough cost analysis of the contractor's cost or pricing data, including its basis.

In this instance, we believe the contractor, not the Government, was in the best position to make cost projections and to support the basis and rationale for those estimates. However, CMI was not required to do so. In this regard, we disagree that obtaining specific information on the contractor's adjustments to historical data was not important. Since these adjustments were significant, knowledge of the basis for the adjustments was essential to the performance of an adequate cost analysis as defined in ASPR. In our opinion, failure to obtain and evaluate this data resulted in the negotiation of a price which the Government had less than adequate assurance of being fair and reasonable. If time was of the essence, a letter contract could have been entered into, and the price definitized, at a later date.

We are bringing this matter to your attention because it indicates a need for OALC to improve in its evaluations of the adequacy of cost or pricing data contained in contractors' price proposals. We plan no further action on this matter at this time. However, we would appreciate receiving your comments and being advised of any corrective action you may take. We will be pleased to provide additional information if you so desire.

Sincerely yours,

W. N. Conrardy

W. N. Conrardy  
Regional Manager

*A. J. King*  
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