ABSTRACT

Newly proposed methodologies for procuring spares with improved reliability/maintainability and new technology are being considered by the Air Force Logistics Command (AFLC). An approach developed at Warner Robins Air Logistics Center (WR-ALC) is called R&M ECP. An R&M ECP is a government solicited change proposal for enhancing equipment R&M in concert with the USAF R&M 2000 Program. The focus of effort is to encourage technology enhancement to selected reprocurement spares during the solicitation process. The R&M ECP concept will only be applied to known "bad actor" items. The item history is to be provided to confirm a genuine R&M requirement to industry and to provide insight to problems. Alternate proposals will be requested in the solicitation for the item. A life cycle cost evaluation which considers cost of ownership per unit of service life will be the primary award consideration. Verification of service life is to be accomplished by field test or warranty. This concept will also utilize the AFLC FAR Supplement 17.7203-92 and 52.217-9097, entitled "Award of Minimum Essential Quantity." This concept has been proposed for trial application and has not yet been fully coordinated or approved.

BUSINESS STRATEGY

The reliability and maintainability engineering change proposal or R&M ECP is a procurement approach which does not involve any new or unique concepts. It does, however, uniquely combine several existing concepts and procedures. The purpose of an R&M ECP is to allow and encourage industry to apply new technology to our continuous requirement for equipment spares—in particular, to those items which exhibit poor reliability and maintainability, as well as antiquated design technology. The application of the R&M ECP would be made evident to industry in the government's normal solicitation of bids for a production contract. Initially, the application is targeted for spares which are R&M poor performers. The specific request will be made for an alternate proposal: that is, one which will provide for technology/quality enhancements resulting in improved reliability and maintainability. Key features of the approach will be the evaluation of proposals on a simplified life cycle cost basis: that is, on the basis of cost per unit of service life. Consequently, a means for the verification of that service life and appropriate warranty provisions would also be included.

ITEM HISTORY

We would first assure industry this is an item with poor R&M characteristics, with significant room for improvement, and thus we have a genuine need for an improved item. Industry needs to know as much about the performance of the old item as possible. We would provide both maintenance data (D056) and supply data (D041), as well as an analysis of that data relative to the item's performance and usage. An item of current configuration could be made available for review and maintenance personnel could also be made available for discussion.

SOLICITED ALTERNATE PROPOSALS

A specific solicitation of alternate proposals will be issued in conjunction with the AFLC Federal Acquisition Regulation (FAR) Supplement 17.7203-92 and 52.217-9027 entitled "Award of Minimum Essential Quantity." This clause was developed for awarding a small quantity to a known and proven source and also a small quantity to a new and unproven source, for the first time. Each possible award would include option quantities. Thus, a variety of awards will be possible, depending upon the quality of the alternate proposals. A basic quantity and several options are contemplated for both the existing item and any R&M ECP item which might be procured. When possible, a multiyear buy quantity is envisioned to maximize the total quantity. If an R&M ECP or alternate proposal is determined to be the lowest overall cost to the government, most of the total quantities could be so awarded. A production cut-in of the new item into production of the old item is also possible. If no cost effective R&M ECP is proposed, only the basic quantity of the existing item might be awarded. A split award is also a definite possibility with contractor A producing the existing item, and contractor B producing the new R&M ECP item.

AWARD CRITERIA

The award criteria are obviously of major
importance to the selection process. The potential criteria are itemized here in the order of their priority:

1. RLM improvements
2. life cycle cost improvement
3. schedule risk
4. technical risk
5. technology improvements

Definitive elements would be established for each of these criteria prior to the solicitation. All these criteria may be required for a sophisticated item such as an LRU or system; however, a simple item such as a nonrepairable item could require only the LCC criterion. Likewise, a complicated piece of equipment such as an investment item (LRU) may require a mini source selection. The simple item (economic order quantity-E0Q) could be awarded by the contracting officer with minimum effort other than an engineering review for technical adequacy. The criteria are generally self-descriptive; however, LCC deserves further explanation.

LIFE CYCLE COST

The LCC evaluation will determine the cost of ownership per unit of time. This determination will be calculated by the following equation:

\[ \text{LCC} = \frac{\text{R&M ECP}}{\text{Bid Unit Price}} \times \frac{\text{LOG}}{\text{Month Bid Service Life}} \]

* Depends upon repairability
** Demonstrated/warranted

This simple ratio can be the basis of award. The ratio can be dollars per hour using MTBF (etc) in hours or simply total operating hours. Dollars per month can be used. Meantime numbers would have to be demonstrated (tested) in plant or in the field. Operating hours could be measured by elapsed time indicator (ETI). Months could be controlled by labels stating warranty duration or end date. The bid unit price is the total contract cost divided by the contract quantity. The logistics cost to the government includes removal, transportation, storage, installation, and cost of repair if the item is repairable. These costs of acquisition and logistics support are to be divided by bid service life which would be demonstrated by a test program or be warranted in months or hours of operation. If reliability and maintainability become the basis for award, they thus become deliverables to be verified by field or in-plant demonstration or backed by warranty. This warranty would be a repair or replace type of warranty.

VALUE ENGINEERING POTENTIAL

Due to the request for alternate proposals, an additional 60 days should be provided for proposal preparation time in order for industry to develop an RLM ECP. The evaluation time by the government is also expected to require an additional 30 days. The RLM ECP may be submitted pursuant to a value engineering program requirement clause (FAR Part 48.201) and submitted as a preliminary VECP, for production cut-in as production item number one. The cost of a VE program requirement would be an offsetting cost but would allow the contractor to share in any savings thus generated. We anticipate the generation of savings to the government because we have seen this happen rather consistently when new technology has been applied to old items. In accordance with the VE clause and the FAR, gross savings in acquisition, operation, and support can be used to offset VECP development and implementation costs incurred by both the contractor and the government. Net savings can then be shared with the contractor as described in the FAR. It is anticipated that the preliminary VECP can thus become both a formal VECP, as well as an accepted VECP, at the time of contract award.

SUMMARY

In summary, we are attempting to develop a provision by which industry can effectively market a "better product," one of higher quality, without undue risk. The opportunity for increased contract quantities is provided and should produce increased profit in both total dollars and percent. Any VECP savings shared with the contractor would be over and above normal profit and normal profit limitations. Successful production of an enhanced item of new and reliable technology should also enhance a successful contractor's position for repeat business. We fully expect new technology to generate savings to the Air Force and the value engineering incentive clause would thus provide a methodology to fund the expenses of developing and implementing the VECP.