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Proposal Improvements That Work

Rocketdyne Propulsion and Power, an operating location of Boeing in Canoga Park, California is under contract with NASA's Marshall Space Flight Center (MSFC) in Huntsville, Alabama for design, development, production, and mission support of Space Shuttle Main Engines (SSMEs). The contract was restructured in 1996 to emphasize a mission contracting environment under which Rocketdyne supports the Space Transportation System launch manifest of seven flights a year without the need for a detailed list of contract deliverables such as nozzles, turbopumps, and combustion devices. This contract structure is in line with the overall Space Shuttle program goals established by the NASA to fly safely, meet the flight manifest, and reduce cost.

Rocketdyne's Contracts, Pricing, and Estimating team has worked for the past several years with representatives from MSFC, the local Defense Contract Management Command, and the DCAA to improve the quality of cost proposals to MSFC for contract changes on the SSME. The contract changes on the program result primarily from engineering change proposals for product enhancements to improve safety, maintainability, or operability in the space environment. This continuous improvement team effort has been successful in improving proposal quality, reducing cycle time, and reducing cost. Some of the principal lessons learned are highlighted here to show how proposal improvements can be implemented to enhance customer satisfaction and ensure cost proposals can be evaluated easily by external customers.

Understand your customer's most important requirements—Cost proposals are provided to government customer's to establish a basis for an increase in contract value and fee. The government customer's have requirements to perform a technical review, conduct fact-finding, gather audit reports, and prepare a negotiation position which must be approved by government management personnel in procurement and the program office. It is essential that the contractor prepare proposals which are clear and concise and provide an audit trail for the various government personnel who evaluate the proposal. The contractor must listen to the voice of the customer and strive to prepare proposals which exceed stated requirements. The proposal must give the evaluators the information they need whether it be information on rates and factors, estimating methods, actual costs identified in the proposal, supplemental data, subcontract cost analysis, the bill of material, the manufacturing method, or the test approach. Customer requirements can be identified during formal reviews, informal discussions, surveys, technical interchange meetings, or other ways. The point to remember is that the government customer has special requirements to evaluate the proposal within a certain time frame, and it is important to plan, organize, and structure the proposal presentation so they can find the information they need in a format that is easy to follow.

Establish advance agreements on work content—On the SSME program, the business resources teams from Rocketdyne and MSFC meet quarterly to review financial topics such as the Program Operating Plan, the earned value performance,

the cost estimates to complete, proposal status, and special topics. During these face-to-face meetings informal agreements have been reached regarding the proposal approach, the work content, and the estimating methodology. These informal agreements have been very effective at building effective team relationships and paving the way for subsequent fact-finding and negotiation with a minimum of contentious issues. For example on a recent proposal, the Rocketdyne team presented a methodology for determining the number of test seconds expended to certify a new engine component. After extensive discussions and consideration of several alternatives, an informal agreement was reached on this methodology. This agreement will ensure that the customer will be receptive to the proposal, and the significant costs associated with a major proposal rework or difficult and protracted negotiations will be avoided. Another example on the SSME program is advance agreement on the use of logistics models to forecast hardware requirements based on mean time between failures for major engine components. These advance agreements are not binding on the government; however, they are extremely helpful in enabling the contractor to provide proposals which the government evaluators will find meaningful.

Plan proposals to ensure success—The Plan of Action meeting is the key to successful proposals. A core team comprised of the proposal manager, the contract administrator, the pricer should conduct a pre-Plan of Action meeting to plan proposal resources, establish a proposal preparation schedule, and identify a detailed bill of material for the proposal. The proposal manager should review all schedules for the effort to be proposed to ensure consistency across the program.

All proposal information should be available during the Plan of Action meeting to the estimators assigned to the proposal team. The contract administrator should maintain a record of all proposal information and act as the clearing house for the inevitable proposal changes. This duty is essential as it maintains discipline during proposal preparation to ensure that all proposal participants are working to the same pricing instructions, ground rules, make or buy plan, hardware quantities and types, and program schedules. It ensures that the proposal leadership team maintains control, and it keeps all proposal team members focused on the objective of providing a quality proposal, on time, and fully responsive to customer requirements.

A key duty of the pricer is to work with the core team at the beginning of the proposal preparation cycle to establish an outline and format for the final proposal. Specific assignments should be made for completing special sections such as the program overview, the pricing instructions, the program schedule, the test plan, and any disclosures or supplemental pricing data. Text descriptions should be planned for each of the pricing formats to ensure they are clear to the reader. Planning for the cost proposal should include integrating text and pricing runs so the final product is easy to follow and conveys a clear description of the estimated resources.

Build relationships with trust—Effective team-building is essential to proposal success. The proposal team should include the customer's procurement staff and technical personnel as well as other government evaluators. The team should understand their requirements and needs and tailor the proposal to facilitate technical evaluation and audit. Internally, it is essential that all proposal team members communicate any special requirements associated with their estimates

and take actions to resolve issues. Changes to items such as parts types and quantities, schedules, make or buy determinations, and planned suppliers should be coordinated with the proposal manager and communicated by the contract administrator through a Plan of Action amendment. For a major proposal, daily coordination meetings may be required to identify and resolve issues, to communicate changes to the original proposal instructions, and to ensure proposal activities progress on schedule. It is advisable for team members to be aligned with specific customer counter-parts to pre-coordinate estimates or estimating approaches to minimize issues during formal fact-finding and evaluation.

Pay attention to details—During the proposal preparation cycle, the estimators should structure the various estimates so they can be understood and evaluated by the customer. Care must be taken to ensure that each task is adequately defined and the method of estimate and basis of each estimate are clear. It is important that write-ups be tailored to the work content being addressed and that descriptions of work processes are current. The proposal manager and contract administrator should review the organization of the cost proposal to ensure that the estimates flow logically from each proposal section to the next. Special attention should be given to features such as a Work Breakdown Structure, a subcontract cost analysis, a description of rates and factors, or presentation of the bill of material to ensure the proposal is well organized and logical. Charts, graphs, and tables including pricing runs should be accompanied by text to explain the message and show how the separate estimates build up to the total estimated cost. The proposal team should take the time to proof the final product to ensure that the estimates match the pricing

runs for each section of the proposal. If cost estimating relationships are used, it is important to cross reference the data so the estimating base can be identified in the proposal. The overall intent is to ensure that all estimates can be understood and evaluated by the government team.

Use red teams-- A "red team" proposal review should be held with red team members who are not associated with the proposal effort to ensure the proposal will make sense to the customer representatives assigned to fact-finding, audit, and negotiation. The red team should be instructed to make constructive suggestions for improvement rather than just highlight areas for criticism. If a section of the proposal requires a re-write, the red team member should assist in the re-write in consultation with the proposal preparation team. The red team is an invaluable source of lessons learned for future proposals, and results of the red team should be maintained. Further, the use of a red team provides added credibility for the proposal during management review and final approval.

Streamline management reviews—For major proposals with firm deadlines, the management review process should be stream-lined in order to allow as much time as possible for preparation and pricing of the estimates. The proposal team should communicate proposal status to the management team in advance with particular emphasis on proposal issues, total estimated cost, and the proposal rationale and estimating approach. As the separate estimates are compiled and forwarded to pricing, the estimators should review the task descriptions, basis of estimate, and method of estimate with their product management. The proposal manager should take responsibility for conducting formal reviews with Engineering, Production, and

other areas as required by company procedures in advance of final sign-off. Briefings should be held with the financial lead and management approval authority for the proposal in advance so their concerns about strategy, commitments, approach, technical performance, schedule risk, facility requirements, capital investment, financial returns, and resources are addressed in advance. Together, these actions will minimize unnecessary delays associated with final approval of the proposal and ensure on-time delivery to meet customer expectations.

Document Lessons Learned—After the proposal is submitted, the team should document lessons learned to ensure the improvements are incorporated into future proposals. In some instances procedures may have to be revised or proposal team members may need training to reinforce the improvements or share them with proposals in other business areas. Of particular importance is information from the red team evaluators which may need to be shared across product lines or kept for reference in future proposals within the business area. After the proposal is submitted, it is advisable to review the schedule for proposal preparation activities to see how more time could be made available to the estimators and how time could be reduced from the management review within the overall time limitations from the customer for proposal submittal. Improvements to the cycle time can be documented for use on future proposals.

Solicit customer feedback—Customer feedback is vital to ensure that cost proposals clearly communicate resource estimates for labor, material, subcontract effort, travel, and other costs in a format that can be readily understood and evaluated. Formal feedback is normally provided by the customer during the quarterly business

reviews which were referred to earlier. Informal feedback is obtained on a regular basis through discussions with customer counter-parts. Other feedback can be obtained by analysis of fact-finding questions presented during the technical evaluations of proposals. Customer surveys can provide insight into specific areas for proposal improvement. Surveys should be sent to the customer's procurement representative with each proposal. As distribution of the proposal is made at the customer site, the surveys can be provided to technical evaluators so their feedback can be obtained directly. In each instance a postage-paid envelope is provided to ensure the survey data is returned. An example of a customer survey for cost proposals is shown below.

Rocketdyne Division
Boeing North American, Inc.

SSME Contracts & Pricing

Customer Survey

Purpose: **To permit you, the customer, an opportunity to evaluate this cost proposal. Your response will provide us some insight on where we can make improvements to our process which will enable us to be more responsive to your needs.**

1. Was this proposal easy to understand? Yes ☐ No ☐
   If not, please explain.

   _____

   _____

2. What suggestions would you like to make for our consideration in the preparation of future proposals to MSFC?

   _____

   _____

3. If you had specific questions, were you given the name and phone number of Rocketdyne's point of contact for clarification?
   Yes ☐ No ☐

4. What is your overall assessment of this proposal: (check one)
   Excellent ☐ Good ☐ Fair ☐ Poor ☐

FROM: _____

Share negotiation results with the proposal team—After the negotiations for each cost proposal are completed, the contract administrator enters the data into the contract database and issues a general order to notify program personnel and the accounting department that the work is formally on contract. The program office prepares a program directive to issue budgets and schedules. The product teams use the data for cost account planning, earned value assessments, and preparation of internal and external cost estimates at completion.

Our proposal improvement team determined that some elements of the business system were not clearly understood by the program team members at Rocketdyne. As an aid to program planning, we instituted post-negotiation briefings to share information with product team members about what proposal areas incurred negotiation losses and to provide insight into why the losses occurred. Insight into negotiation losses is particularly important to the business office personnel who prepare program directives and to the product team members responsible for performance of the proposal effort. In some instances it was evident that the negotiation losses resulted directly from proposal information that was not clear to the customer's technical evaluators. This knowledge can lead to improvements in future proposals to present information more clearly and reduce losses in negotiations.

Summary--Together these initiatives highlight simple and effective ways to improve proposals. They provide a focus on customer satisfaction as an important component of program success. Improved proposal quality accompanied by reduced cycle time and reduced cost will result in improved morale among members

of the proposal team, enhanced management confidence in the proposal process, and increased customer satisfaction with the proposals submitted to them for evaluation and audit. As you implement proposal improvements, you can have the satisfaction of knowing that you made a difference, and you will know that your results are appreciated by your co-workers, your management, and your customer.

Biographical data--

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