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1 July 1963

IN REPLY REFER TO: 1/4/10-703

Headquarters
Ballistic Systems Division
Air Force Systems Command
Norton Air Force Base
California

Attention: BSRPQ-1

Subject: Program Plan for Value Engineering, Report Number MTO-858-1-7, dated 1 July 1963, Contract AF 04(694)-270, Wing VI, Stage III Minuteman, WS-133

Reference: Exhibit "B," Paragraph IV.J.3

Gentlemen:

In accordance with Exhibit "B" to Contract AF 04(694)-270, one copy of the subject report is hereby submitted. This report is a preliminary program plan which will be incorporated into the next revision of the master program plan, Report No. MTO-858-1B.

Very truly yours,

J. R. BONNER, SUPERINTENDENT
AF CONTRACT SUPPORT

JRB:JLMORSE:dd

Encl (Copy No. 1 of Report No. MTO-858-1-7)

Technical Operating Report
B O B Approval No._____

PROGRAM PLAN
FOR
VALUE ENGINEERING

WING VI, STAGE III MINUTEMAN

MTO-858-1-7

WEAPON SYSTEM 133B

1 July 1963

Letter Contract Number AF 04(694)-270
Exhibit "B", Paragraph IV.J.3

Prepared by

HERCULES POWDER COMPANY
CHEMICAL PROPULSION DIVISION
Bacchus Works
Magna, Utah

Prepared for

AIR FORCE SYSTEMS COMMAND
UNITED STATES AIR FORCE
Los Angeles, California

Report No. MTO-858-1-7

Copy No. 18

Date 1 July 1963

PROGRAM PLAN
FOR
VALUE ENGINEERING

WING VI STAGE III MINUTEMAN

WEAPON SYSTEM 133B

Approved by:

E. F. Shultz, Superintendent
Wing VI Minuteman

Approved by:

W. L. Gunter,
Minuteman Project Manager

FOREWORD

This program plan for value engineering is herewith submitted in accordance with Exhibit B to Letter Contract AF 04(694)-270, Paragraph IV.J.3.

The purpose of this plan is to define the level of effort anticipated for the Wing VI stage III Minuteman Program. Details of the program will be submitted upon approval by BSD of the level of effort defined herein.

Prepared by

The Publications Group
Graphic Services Department
HERCULES POWDER COMPANY
Bacchus Works
Magna, Utah

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SECTION I

SCOPE OF PLAN

A. INTRODUCTION

A value engineering program to include the following tasks as defined in Ballistic Systems Division Exhibit 62-21, Value Engineering Program for Minuteman, as herein amended, will be conducted by the contractor. The items discussed in this plan refer directly to specific tasks in the BSD Exhibit 62-21.

B. COST ANALYSIS

1. Recognizing that many factors contribute to the total cost of a weapons system, Hercules Value Engineering strives to achieve that optimum relationship between performance, reliability, and cost which results in maximum value to the customer.

2. To attain this objective, Value Engineering will participate in the development of cost models and cost targets, conduct cost studies to provide the cognizant engineer with accurate cost data early in the conceptual stage of design, and stimulate him to consider alternate approaches which will ensure actual costs that stay within established targets. (Refer to BSD Exhibit 62-21, para 2.)

C. SPECIFICATION REVIEW

Recognizing that "over-specification" is a major contributor to excessive costs in weapons systems, specifications for model, equipment, and material will be reviewed to ensure that all specified characteristics are both necessary and sufficient to satisfy customer requirements; and measurable to exclude, insofar as possible, subjective evaluation of compliance. (Ibid, para 3.)

D. DESIGN REVIEW

1. All product and tooling design drawings will be subject to Value Engineering review to ensure that the optimum relationship between performance, reliability, and cost are achieved. Such reviews will effect a critical evaluation, from the standpoint of value, of all elements of the design including basic concept, configuration, materials, tolerances, producibility, maintainability, interchangeability, and the use of standards.

2. Designs will be reviewed as they develop in the conceptual and layout stage, and again prior to Class I drawing release. (Ibid, para 4.)

E. PURCHASING VALUE PROGRAM

As explained in BSD Exhibit 62-21, Section I, para 5, strong emphasis will be placed on application of value analysis to purchasing activities. The purchasing program will include, but not limited to, the following:

(1) Participation in design reviews

(2) Use of value checklists with all requests for quotation to subcontractors

(3) Supplier indoctrination in the concepts and techniques of value analysis

(4) Bills-of-material review

(5) Applications of value analysis to make-or-buy decisions

F. TRAINING

A continuing program of training in the concepts and techniques of value analysis will be conducted for all personnel whose duties require that they make decisions affecting the final cost of the product. Such training will include, but not be limited to, the usual lecture-workshop seminars which use, insofar as possible, projects relevant to the weapon system. (Ibid, para 8.)

G. ENGINEERING CHANGE PROPOSALS

1. Class 1 Changes. Class 1 changes are defined in ANA Bulletin No. 391a entitled: "Changes, Engineering, to Aircraft Engines, Propellers, Equipment in Production and Service."

a. All changes requiring an engineering change proposal (ECP) will be subject to a value engineering review prior to submittal to the ECP approval authority.

b. An ECP which represents the culmination of value engineering study and is based primarily on cost considerations will be designated as a Value Engineering Change Proposal. The ECP form will be marked "VECP".

2. Class 2 Changes, Non-ECP Type Proposals. Value engineering proposals which do not require ECP action, will be processed and documented in accordance with internal operating procedures of the contractor. (Ibid, para 9.)

H. REPORTS

Value Engineering activity reports will be submitted in accordance with the requirements set forth in BSD Exhibit 62-21, Value Engineering Program for Minuteman.

SECTION II

APPLICATION OF THE PLAN

A. EMPHASIS

In applying this value engineering plan to the Minuteman program, maximum emphasis will be placed on early stages of design so as to allow the greatest possible cost savings through minimum expenditures for design changes.

B. PERSONNEL

All personnel performing value analysis and engineering tasks will be technically competent by virtue of training and experience in value analysis principles and their application. (Refer BSD Exhibit 62-21, Section II, para 1.)

C. PRACTICE

Value engineering will be applied at each phase of the Wing VI Research and Development Program; from the earliest stages of conceptual design through development, final design, and testing. (Ibid, para 2.)

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