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

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AUG 15 1973

B-163

RELEASED

74-0036

The Honorable Larry Winn, Jr.
House of Representatives

Dear Mr. Winn:

During testimony on June 18, 1973, before the Subcommittee on Buildings and Grounds, Senate Committee on Public Works, you expressed an interest in having GAO examine Federal agencies' use of value engineering. Since we are currently reviewing this area, we felt it might help you if we informed you of the results of our work. Accordingly, we spoke with your executive secretary on June 27, 1973, and agreed to give you a summary of our efforts.

In our review, we are mainly evaluating how Federal agencies responsible for constructing buildings use value engineering incentive programs. These programs generally refer to the use of incentive clauses in construction contracts to provide financial rewards to contractors and subcontractors who initiate approved cost-saving value engineering proposals. We have found that Federal agencies vary in their use of the programs.

We are also examining whether (1) proven value engineering proposals are circulated enough, both within and among the Federal construction agencies, and (2) the methods for applying proven value engineering proposals to future construction projects are effective.

Agencies whose practices we are reviewing are the Army Corps of Engineers; the Department of the Navy; the Department of the Air Force; the General Services Administration; the Federal Aviation Administration; the Veterans Administration; the Atomic Energy Commission; the Tennessee Valley Authority; the Department of Health, Education, and Welfare; and the National Aeronautics and Space Administration.

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Although most of these agencies are, at least to some extent, trying to promote value engineering, they need to increase their efforts in order to realize the full benefits from applying value engineering to the construction process. To obtain these benefits, the agencies should:

1. Establish value engineering incentive programs.

2. Strengthen these programs by promoting contractor and subcontractor participation.

3. Adopt uniform value engineering incentive clauses to be included in all construction contracts over a minimum amount (such as $10,000). The clauses should cover such matters as subcontractor participation in the program and the consideration to be given life-cycle costs.

4. Establish a central organization to (a) review and refine all approved value engineering proposals, (b) develop a procedure for categorizing the proposals by engineering discipline and presenting them in a clear, concise format, and (c) circulate regularly to all interested agencies those proposals having widespread application.

5. Establish formal procedures to insure that each agency considers applying proven value engineering proposals to all its future projects.

Enclosed is a copy of our statement on value engineering which we presented to the Subcommittee on June 18, 1973. This statement provides more details on the scope and results of our review, discusses our previous reviews of value engineering, and sets forth some of the benefits that can be derived from applying value engineering to the construction process.

As noted on page 22 of the statement, we do not consider our current review as the last of our evaluations of the effectiveness of value engineering programs in Federal

construction. Our long-range program is directed rather to a complete and comprehensive analysis, as resources permit, of those management techniques or tools that promote economy and efficiency in Government. In our opinion, value engineering is one of the techniques that can effectively improve Government operations.

We have received your letter of July 20, 1973, requesting that we undertake an extensive examination into the conduct of value engineering in the Department of Defense. We plan to discuss with you in the near future the work necessary to fulfill your need.

We trust the information furnished helps meet your needs and shall be pleased to discuss the matter further. When we issue our report to the Congress, we will send you a copy to give you more details on our review.

Sincerely yours,

Comptroller General
of the United States

Enclosure

ENCLOSURE

UNITED STATES GENERAL ACCOUNTING OFFICE

WASHINGTON, D.C. 20548

FOR RELEASE ON DELIVERY
EXPECTED AT 2:00 P.M., EDST
MONDAY, JUNE 18, 1973

STATEMENT OF
ROBERT G. ROTHWELL, DEPUTY DIRECTOR
LOGISTICS AND COMMUNICATIONS DIVISION
BEFORE
THE SUBCOMMITTEE ON BUILDINGS AND GROUNDS,
COMMITTEE ON PUBLIC WORKS
UNITED STATES SENATE
ON

USE OF VALUE ENGINEERING IN CONSTRUCTION OF FEDERAL FACILITIES

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE:

WE ARE PLEASED TO APPEAR HERE TODAY TO PRESENT OUR OBSERVATIONS ON THE USE OF VALUE ENGINEERING BY FEDERAL AGENCIES ENGAGED IN FACILITY ACQUISITION.

THE SOCIETY OF AMERICAN VALUE ENGINEERS DEFINES THE APPLICATION OF VALUE ENGINEERING TO THE CONSTRUCTION PROCESS

GENERALLY AS THE CONSIDERATION OF ALTERNATIVE WAYS OF CONSTRUCTING A FACILITY, AND THE SELECTION OF THE MOST COST EFFECTIVE ALTERNATIVE. THE COST EFFECTIVENESS CAN BE MEASURED IN REDUCED CONSTRUCTION COST, REDUCED OPERATION AND MAINTENANCE COST, A HIGHER QUALITY PRODUCT FOR THE SAME COST, OR SOME COMBINATION OF THE THREE. IN SHORT, VALUE ENGINEERING CAN BE REGARDED AS A SEARCH FOR EFFICIENCY, ECONOMY AND UTILITY, AND IN THAT SENSE IT HAS UNIVERSAL APPEAL.

THE CONSTRUCTION INDUSTRY IS CURRENTLY IN A PERIOD OF RAPID CHANGE. IN THE LAST FEW YEARS THE PRESSURE OF SHARPLY RISING COSTS OF LABOR, MATERIALS, AND MONEY HAS GIVEN A SENSE OF URGENCY TO ATTEMPTS TO PUT THESE RESOURCES TOGETHER IN WAYS THAT WILL PROMOTE MORE ECONOMICAL CONSTRUCTION. MANY INNOVATIVE CONSTRUCTION TECHNIQUES--INCLUDING CONSTRUCTION MANAGEMENT, TURNKEY, FAST-TRACK, AND INDUSTRIALIZED BUILDING--

ARE BEING TRIED IN BOTH PRIVATE AND GOVERNMENT CONSTRUCTION. ALL THESE TECHNIQUES SEEK THE SAME OBJECTIVES--REDUCTION IN COSTS; SHORTENING OF THE CONSTRUCTION CYCLE; IMPROVEMENT IN DESIGN; SELECTION OF THE BEST BUILDING MATERIALS; AND IMPROVEMENT IN QUALITY.

THESE TECHNIQUES SERVE AS VALUABLE TOOLS TO MANAGEMENT IN ITS QUEST FOR ECONOMY AND EFFICIENCY IN CONSTRUCTION. VALUE ENGINEERING IS ONE OF THESE TOOLS. AS DISCUSSED LATER IN THIS STATEMENT, VALUE ENGINEERING CAN BE USED THROUGHOUT THE CONSTRUCTION PROCESS AND CAN BE ACCOMPLISHED BY BOTH THE IN-HOUSE EFFORTS OF FEDERAL AGENCIES AND BY CONTRACT.

OUR OFFICE HAS BEEN, AND CONTINUES TO BE, INTERESTED IN THE APPLICATION OF VALUE ENGINEERING TO FEDERAL CONSTRUCTION. OUR INTEREST IN VALUE ENGINEERING IS PART OF OUR OVERALL EFFORT TO PROMOTE AND ENCOURAGE THE USE OF BUILDING METHODS AND TECHNIQUES THAT MAY HELP CURB THE CONSTRUCTION COST SPIRAL.

ENCLOSURE

REPORTED BENEFITS OF
VALUE ENGINEERING

BEFORE DISCUSSING GAO'S PAST AND PRESENT REVIEW EFFORTS WITH RESPECT TO VALUE ENGINEERING, I WOULD LIKE TO MENTION (1) SOME OF THE BENEFITS REPORTED BY AGENCIES AS A RESULT OF APPLYING VALUE ENGINEERING TO THE CONSTRUCTION PROCESS, AND (2) SOME SPECIFIC EXAMPLES OF VALUE ENGINEERING IN OPERATION.

AT THE 1972 NATIONAL CONVENTION OF THE SOCIETY OF AMERICAN VALUE ENGINEERS, THE CORPS OF ENGINEERS REPORTED THAT ITS TOTAL VALUE ENGINEERING EFFORT HAS PRODUCED AUDITED SAVINGS OF OVER $200 MILLION SINCE 1964. IN ADDITION, THE CORPS NOTED THAT IT HAS SAVED 14 PERCENT ON THE COST OF REPETITIVE-TYPE BUILDINGS BY APPLYING VALUE ENGINEERING TO PROTOTYPE DESIGNS.

IN DISCUSSING ITS VALUE ENGINEERING INCENTIVE PROGRAM AT THE CONVENTION, THE CORPS STATED THAT SINCE 1964 IT HAS APPROVED ABOUT 1,400 OF THE APPROXIMATELY 2,200 PROPOSALS

SUBMITTED BY CONTRACTORS. (IN GENERAL TERMS, VALUE ENGINEERING INCENTIVE PROGRAMS REFER TO USE OF INCENTIVE CLAUSES IN CONSTRUCTION CONTRACTS THAT PROVIDE FINANCIAL REWARDS TO CONTRACTORS AND SUBCONTRACTORS WHO DEVELOP APPROVED COST-SAVING VALUE ENGINEERING PROPOSALS.) THE CORPS NOTED THAT THE APPROVED PROPOSALS HAVE RESULTED IN SAVINGS OF ABOUT $14 MILLION--$7 MILLION FOR THE CORPS AND $7 MILLION FOR THE CONTRACTORS. THE AVERAGE SAVINGS TO THE GOVERNMENT ON EACH APPROVED CONTRACTOR PROPOSAL WAS APPROXIMATELY $5,000.

AT THIS SAME CONVENTION, THE DEPARTMENT OF HEALTH, EDUCATION AND WELFARE STATED THAT ITS IN-HOUSE VALUE ENGINEERING EFFORTS HAVE RESULTED IN SAVINGS OF $92 MILLION ON ITS DIRECT CONSTRUCTION PROGRAM. THE GENERAL SERVICES ADMINISTRATION, IN ITS PRESENTATION AT THE CONVENTION, REPORTED THAT DURING THE FIRST 9 MONTHS OF ITS VALUE

ENGINEERING INCENTIVE PROGRAM, IT SHARED OVER $1.5 MILLION IN SAVINGS WITH CONTRACTORS.

ANOTHER WAY OF VIEWING A VALUE ENGINEERING PROGRAM IS TO COMPARE SAVINGS FROM THE PROGRAM WITH THE COST OF OPERATING THE PROGRAM. FOR FISCAL YEAR 1972 THE CORPS OF ENGINEERS REPORTED THAT FOR EVERY DOLLAR IT SPENT ON VALUE ENGINEERING IT RECEIVED A RETURN OF $23 IN SAVINGS--$40.8 MILLION IN SAVINGS COMPARED TO $1.75 MILLION IN PROGRAM OPERATING COSTS. FOR THIS SAME FISCAL YEAR, GSA ESTIMATED THAT ITS VALUE ENGINEERING INCENTIVE PROGRAM PRODUCED SAVINGS OF OVER $1 MILLION COMPARED TO OPERATING COSTS OF ABOUT $130,000.

SPECIFIC EXAMPLES OF VALUE ENGINEERING

I WOULD NOW LIKE TO CITE THREE EXAMPLES WHICH, WE BELIEVE, SHOW THAT VALUE ENGINEERING CAN BE APPLIED BENEFICIALLY THROUGHOUT THE CONSTRUCTION PROCESS. THE FIRST

EXAMPLE ILLUSTRATES THE BENEFITS OF HAVING A VALUE ENGINEERING INCENTIVE PROGRAM. THE SECOND EXAMPLE CONCERNS THE APPLICATION OF A PROVEN VALUE ENGINEERING PROPOSAL TO SUBSEQUENT PROJECTS. THE LAST EXAMPLE DESCRIBES THE MEANINGFUL RESULTS THAT CAN BE OBTAINED WHEN VALUE ENGINEERING IS APPLIED TO STANDARD DESIGNS.

EXAMPLE #1

IN AUGUST 1971, PRIOR TO THE ESTABLISHMENT OF ITS FORMAL VALUE ENGINEERING INCENTIVE PROGRAM FOR CONTRACTORS, THE GENERAL SERVICES ADMINISTRATION (GSA) AWARDED A CONTRACT FOR THE CONSTRUCTION OF A FEDERAL OFFICE BUILDING IN CHICAGO. AT THE SUGGESTION OF THE CONTRACTOR GSA INCLUDED A VALUE ENGINEERING INCENTIVE CLAUSE IN THE CONTRACT. THE CLAUSE PROVIDED FOR SAVINGS ON THE INITIAL CONSTRUCTION COST ARISING FROM THE CONTRACTOR'S PROPOSALS TO BE SHARED 70 PERCENT BY THE GOVERNMENT AND 30 PERCENT BY THE CONTRACTOR. (THE VALUE

ENGINEERING INCENTIVE CLAUSE CURRENTLY BEING USED BY GSA UNDER ITS FORMAL PROGPAM PROVIDES THAT THE CONTRACTOR AND GOVERNMENT SHARE EQUALLY IN ANY SAVINGS IN INITIAL CONSTRUCTION COST.)

GSA HAS REPORTED THAT, AS OF JUNE 1972, THE CONTRACTOR'S VALUE ENGINEERING PROPOSALS RESULTED IN SAVINGS TO THE GOVERNMENT OF ABOUT $1,000,000 ON THE INITIAL CONSTRUCTION COST OF THIS PROJECT.

EXAMPLE #2

THE CORPS OF ENGINEER'S FORT WORTH DISTRICT, ACTING AS THE CONSTRUCTION AGENT FOR A RANDOLPH AIR FORCE BASE PROJECT, RECEIVED A VALUE ENGINEERING PROPOSAL FROM A CONTRACTOR SPECIFYING A CHANGE IN THE MATERIAL USED FOR ENCASING UNDERGROUND ELECTRIC CABLES. THE PROPOSAL WAS INITIALLY REJECTED PECAUSE AIR FORCE SPECIFICATIONS DID NOT PERMIT THE USE OF THE SUGGESTED MATERIAL. THE CORPS' FORT

WORTH DISTRICT, WHICH WAS USING THE SUGGESTED MATERIAL ON ITS OWN PROJECTS, ESTIMATED THAT USE OF THIS MATERIAL WOULD SAVE THE AIR FORCE OVER $100,000 PER YEAR ON CONTRACTS ADMINISTERED BY THE CORPS' FORT WORTH DISTRICT ALONE. THE CORPS WAS ABLE TO CONVINCE THE AIR FORCE TO AMEND ITS SPECIFICATIONS TO PERMIT THE USE OF THE NEW MATERIAL.

EXAMPLE #3

THE SAVANNAH DISTRICT OF THE CORPS OF ENGINEERS PERFORMED AN INTERNAL VALUE ENGINEERING STUDY OF THE STANDARD DESIGN FOR FIVE ADMINISTRATION AND STORAGE BUILDINGS. THE STUDY PRODUCED SEVERAL REVISIONS TO THE STANDARD DESIGN THAT WERE SUBSEQUENTLY ADOPTED FOR CORPS-WIDE USE. AT THE SAVANNAH DISTRICT ALONE, THESE DESIGN REVISIONS RESULTED IN ESTIMATED SAVINGS OF $784,000 ON NINE SPECIFIC PROJECTS DURING FISCAL YEARS 1968 THROUGH 1970.

PAST GAO REVIEWS OF VALUE ENGINEERING

IN A REPORT TO THE CONGRESS IN 1965 WE SHOWED THAT THE MARITIME ADMINISTRATION HAD NOT REQUIRED SHIPOWNERS TO INCORPORATE APPROVED COST-SAVING VALUE ENGINEERING PROPOSALS IN THE DESIGN AND CONSTRUCTION OF SHIPS UNDER THE CONSTRUCTION-DIFFERENTIAL SUBSIDY PROGRAM. AS A RESULT, THE SHIPOWNERS HAD NOT REALIZED THE MAXIMUM COST SAVINGS ASSOCIATED WITH CONSTRUCTION, AND MARITIME'S SUBSIDY PAYMENTS HAD BEEN INCREASED BY ABOUT $1 MILLION.

ALTHOUGH THE MARITIME ADMINISTRATION QUESTIONED OUR ASSESSMENT OF THE AMOUNT OF THE REPORTED INCREASE IN SUBSIDY PAYMENTS, IT AGREED TO MAKE PROVEN COST-SAVING VALUE ENGINEERING PROPOSALS MANDATORY FOR SUBSIDY COMPUTATION PURPOSES.

IN JUNE 1971, THE MARITIME ADMINISTRATION DISCONTINUED THE REQUIREMENT THAT VALUE ENGINEERING PROVISIONS BE INCLUDED IN SHIP CONSTRUCTION CONTRACTS. IN MAY 1972 WE REPORTED

THAT MARITIME'S VALUE ENGINEERING PROGRAM HAD ACCOUNTED FOR REPORTED SAVINGS OF $21.5 MILLION IN SHIP CONSTRUCTION COSTS SINCE 1957. BECAUSE OF THE SUBSTANTIAL SAVINGS REALIZED, AND THE POTENTIAL FOR FUTURE SAVINGS, WE EXPRESSED THE BELIEF THAT THE VALUE ENGINEERING PROGRAM SHOULD NOT BE ELIMINATED.

IN RESPONDING TO OUR SUGGESTION, THE DEPARTMENT OF COMMERCE AGREED TO RETAIN CERTAIN FEATURES OF THE SHIP CONSTRUCTION VALUE ENGINEERING PROGRAM BUT CONTINUED TO OPPOSE THE MANDATORY INCLUSION OF PROVEN VALUE ENGINEERING CHANGES IN FUTURE SHIP CONSTRUCTION PLANS AND SPECIFICATIONS BECAUSE IT WOULD BE AN IMPOSITION ON SHIP OPERATORS.

IN 1969, WE ISSUED A REPORT TO THE CONGRESS ON OUR REVIEW OF MANAGEMENT BY THE DEPARTMENT OF DEFENSE (DOD) OF ITS VALUE ENGINEERING INCENTIVE PROGRAM FOR CONTRACTORS. THE PROGRAM WAS INTENDED TO STIMULATE CONTRACTOR DEVELOPMENT

OF VALUE ENGINEERING PROPOSALS FOR REDUCING THE COSTS OF DESIGNING AND MANUFACTURING PRODUCTS. WE FOUND THAT THE PROGRAM WAS NOT PRODUCING THE DESIRED RESULTS, AND WE MADE A NUMBER OF RECOMMENDATIONS TO DOD FOR ENHANCING THE PROGRAM. DOD SUBSTANTIALLY CONCURRED WITH OUR FINDINGS AND AGREED TO TAKE A NUMBER OF CORRECTIVE ACTIONS.

CURRENT GAO REVIEW OF VALUE ENGINEERING

WE ARE CURRENTLY COMPLETING A REVIEW OF THE USE OF VALUE ENGINEERING INCENTIVE PROGRAMS BY THE PRINCIPAL FEDERAL CONSTRUCTION AGENCIES. AS MENTIONED EARLIER, IN OUR OPINION, VALUE ENGINEERING HAS APPLICATION THROUGHOUT THE FACILITY ACQUISITION PROCESS. VALUE ENGINEERING INCENTIVE PROGRAMS APPLY TO THE FINAL PHASE OF THE PROCESS--THE CONSTRUCTION PHASE.

IN THIS REVIEW, WE ALSO EXAMINED INTO (1) THE EXTENT TO WHICH PROVEN VALUE ENGINEERING PROPOSALS ARE CIRCULATED,

BOTH WITHIN AND AMONG FEDERAL AGENCIES, AND (2) THE ADEQUACY OF CURRENT PROCEDURES FOR APPLYING PROVEN VALUE ENGINEERING PROPOSALS TO FUTURE CONSTRUCTION PROJECTS. AGENCIES WHOSE PRACTICES WE REVIEWED ARE GSA, THE FEDERAL AVIATION ADMINISTRATION, THE VETERANS ADMINISTRATION, THE ATOMIC ENERGY COMMISSION, THE TENNESSEE VALLEY AUTHORITY, THE DEPARTMENT OF HEALTH, EDUCATION AND WELFARE, THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION, THE ARMY CORPS OF ENGINEERS, AND THE DEPARTMENTS OF THE NAVY AND THE AIR FORCE.

THE REVIEW SHOWED THAT, ALTHOUGH SEVERAL OF THE AGENCIES ARE ACTIVELY SEEKING TO PROMOTE VALUE ENGINEERING, INCREASED EFFORTS ARE NEEDED FROM ALL THE AGENCIES IN ORDER TO REALIZE THE FULL POTENTIAL BENEFITS THAT CAN BE DERIVED FROM APPLYING VALUE ENGINEERING TO CONSTRUCTION.

VALUE ENGINEERING INCENTIVE PROGRAMS

WE FOUND WIDE VARIANCES IN THE EMPHASIS GIVEN VALUE ENGINEERING INCENTIVE PROGRAMS BY THE AGENCIES WE REVIEWED.

FOUR OF THE AGENCIES HAVE HAD PROGRAMS FOR ABOUT 8 YEARS, TWO HAVE RECENTLY INITIATED PROGRAMS, AND FOUR HAVE NO PROGPAMS. WE ALSO FOUND MAJOR DIFFERENCES IN THE PROCEDURES, OPERATIONS, AND DEGREE OF EMPHASIS GIVEN THE PROGRAMS IN OPERATION. WE BELIEVE THAT THE EXISTENCE OF THESE VARIANCES, PARTICULARLY AS REGARDS THE AMOUNT OF EFFORT PUT FORTH BY THESE AGENCIES TO PROMOTE THEIR PROGRAMS, HELPS EXPLAIN WHY SOME OF THE AGENCIES HAVE EXPERIENCED GREATER SUCCESS THAN OTHERS.

OUR REVIEW SHOWED THAT THE VALUE ENGINEERING INCENTIVE CLAUSE BEING USED BY FOUR OF THE AGENCIES IS TOO UNWIELDLY AND NOT DIRECTED SPECIFICALLY TO CONSTRUCTION. MOST AGENCY PERSONNEL AND CONTRACTORS PREFERRED THE ONE PAGE CLAUSE CURRENTLY BEING USED BY GSA AND THE VETERANS ADMINISTRATION. THIS CLAUSE WAS DESIGNED SPECIFICALLY BY GSA FOP USE IN CONSTRUCTION CONTRACTS.

OTHER PROBLEMS WE FOUND WITH CLAUSES CURRENTLY BEING USED INCLUDED:

(1) CERTAIN OF THE CLAUSES DID NOT PROVIDE SPECIFIC SHARING RATIOS FOR SUBCONTRACTORS AS WELL AS CONTRACTORS. IN OUR OPINION, AN AGENCY SHOULD ATTEMPT TO MAKE USE OF VALUE ENGINEERING IDEAS FROM BOTH CONTRACTORS AND SUBCONTRACTORS.

(2) ONE AGENCY'S INCENTIVE CLAUSE ONLY ALLOWED SAVINGS ON THE INITIAL CONSTRUCTION COST OF A PROJECT. NO CONSIDERATION WAS GIVEN TO SAVINGS IN OPERATION AND MAINTENANCE COSTS. WE BELIEVE THAT LIFE-CYCLE COSTS SHOULD BE SUBJECT TO VALUE ENGINEERING SINCE OPERATION AND MAINTENANCE COSTS SAVINGS COULD FAR EXCEED INITIAL CONSTRUCTION COST SAVINGS.

(3) THERE WERE WIDE VARIANCES REGARDING THE MINIMUM CONTRACT SIZE FOR INCLUDING AN INCENTIVE CLAUSE.

ONE AGENCY USED A $10,000 OR OVER CUT-OFF POINT. OTHER AGENCIES RANGED FROM $50,000 AND OVER TO $500,000 AND OVER. SEVERAL AGENCIES, BY INCLUDING AND INCENTIVE CLAUSE IN ONLY THOSE CONTRACTS EXCEEDING $100,000, EFFECTIVELY ELIMINATED MOST OF THEIR CONSTRUCTION CONTRACTS FROM THEIR INCENTIVE PROGRAMS. IN OUR OPINION, BECAUSE OF THE POTENTIAL REPETITIVE USE OF AN APPROVED VALUE ENGINEERING PROPOSAL, IT WOULD BE IN THE INTEREST OF THE GOVERNMENT TO INCLUDE THE CLAUSE IN ALL CONTRACTS EXCEPT THOSE OF VERY SMALL SIZE.

OUR REVIEW OF VALUE ENGINEERING INCENTIVE PROGRAMS ALSO SHOWED THAT THE RELATIVE SUCCESS OF AN INCENTIVE PROGRAM IS PROPORTIONAL TO THE AMOUNT OF EFFORT AN AGENCY EXPENDS TO PROMOTE THE PROGRAM. SEVERAL AGENCIES HAVE DEVELOPED AN EXTENSIVE PROMOTIONAL PROGRAM FOR THEIR OWN

PERSONNEL AND FOR CONTRACTORS, INCLUDING SEMINARS, PRE-CONSTRUCTION CONFERENCES, AND LETTERS TO THE CONTRACTOR. OTHER AGENCIES LIMIT THEIR EFFORTS TO INCLUSION OF THE CLAUSE OR A REFERENCE TO THE CLAUSE IN THE CONTRACT.

CIRCULATION OF PROVEN VALUE ENGINEERING PROPOSALS

WE BELIEVE THAT ONE OF THE MOST IMPORTANT BENEFITS OF A PROVEN VALUE ENGINEERING PROPOSAL IS ITS APPLICATION TO FUTURE PROJECTS. THROUGH INTER-AGENCY AND INTRA-AGENCY CIRCULATION OF PROVEN PROPOSALS, IT IS POSSIBLE TO BRING TO THE ATTENTION OF THOSE RESPONSIBLE FOR DESIGNING, APPROVING, AND CONSTRUCTING PROJECTS THE LATEST COST-SAVING IDEAS, TECHNIQUES AND MATERIALS.

OUR REVIEW SHOWED THAT THERE HAS BEEN ALMOST NO INTER-AGENCY OR INTRA-AGENCY CIRCULATION OF PROVEN VALUE ENGINEERING PROPOSALS. WE FOUND NO FORMAL SYSTEM FOR INTER-AGENCY CIRCULATION OF PROVEN VALUE ENGINEERING PROPOSALS. WE FOUND

INSTANCES WHERE ONE AGENCY WOULD APPROVE A VALUE ENGINEERING PROPOSAL ALREADY PROVEN SATISFACTORY BY ANOTHER AGENCY. INTER-AGENCY CIRCULATION OF PROVEN VALUE ENGINEERING PROPOSALS MIGHT HAVE PREVENTED THIS.

WE OBSERVED, ALSO, THAT THERE IS LITTLE CIRCULATION OF SUCCESSFUL PROPOSALS WITHIN AGENCIES. WE FOUND ONLY ONE AGENCY WITH ANY FORMAL SYSTEM FOR CIRCULARIZING APPROVED PROPOSALS THROUGHOUT ITS FIELD INSTALLATIONS. FURTHER, IN THIS INSTANCE, AGENCY FIELD PERSONNEL CONSIDERED THIS SYSTEM INEFFECTIVE BECAUSE THE PROPOSALS WERE NOT CATEGORIZED BY ENGINEERING DISCIPLINE AND THERE WAS INSUFFICIENT INFORMATION TO EVALUATE THE PROPOSALS.

WE NOTED INSTANCES WHERE FIELD INSTALLATIONS HAD APPROVED VALUE ENGINEERING PROPOSALS THAT HAD PREVIOUSLY BEEN APPROVED BY DIFFERENT FIELD INSTALLATIONS OF THE SAME AGENCY. INTRA-AGENCY CIRCULATION MIGHT HAVE AVOIDED THESE DUPLICATIONS, THUS SAVING THE GOVERNMENT MONEY.

WE BELIEVE THAT A CENTRAL SYSTEM FOR ANALYZING AND CIRCULATING PROVEN VALUE ENGINEERING PROPOSALS, BOTH AMONG AND WITHIN AGENCIES, WOULD GREATLY EXPAND THE APPLICATION OF SUCH PROPOSALS.

FORMAL PROCEDURES FOR APPLYING VALUE ENGINEERING PROPOSALS

INFORMING AGENCY PERSONNEL OF APPROVED PROPOSALS WILL NOT ASSURE EFFECTIVE USE OF THE PROPOSALS. AGENCIES SHOULD HAVE, WE BELIEVE, DEFINITE PROCEDURES THAT WILL RESULT IN POSITIVE EFFORTS TO ADOPT APPROVED PROPOSALS TO FUTURE PROJECTS.

OUR REVIEW SHOWED THAT MOST AGENCIES DO NOT HAVE SUCH PROCEDURES. HAVING FORMAL PROCEDURES FOR APPLYING PROVEN PROPOSALS TO FUTURE PROJECTS SHOULD PROVIDE GREATER ASSURANCE OF MAXIMUM COST SAVINGS FROM THE VALUE ENGINEERING INCENTIVE PROGRAM.

FURTHER, HAVING SUCH PROCEDURES SHOULD AVOID THE ADDED COST TO THE GOVERNMENT OF PAYING FOR DUPLICATE PROPOSALS. WE OBSERVED THAT AGENCIES REPEATEDLY APPROVED IDENTICAL PROPOSALS. IN ONE CASE, THE SAME FIELD OFFICE OF AN AGENCY APPROVED THREE IDENTICAL PROPOSALS SUBMITTED BY CONTRACTORS OVER A 2-1/2 YEAR PERIOD.

POTENTIAL FOR IMPROVING PROGRAM

BASED ON OUR REVIEW, WE BELIEVE THERE IS CONSIDERABLE POTENTIAL FOR INCREASING THE BENEFITS THAT CAN BE DERIVED FROM THE FEDERAL CONSTRUCTION AGENCIES' VALUE ENGINEERING INCENTIVE PROGRAMS. THE STEPS THAT MIGHT BE TAKEN INCLUDE:

(1) ESTABLISHING A VALUE ENGINEERING INCENTIVE PROGRAM IN THOSE FEDERAL AGENCIES THAT DO NOT YET HAVE SUCH A PROGRAM;

(2) STRENGTHENING THE AGENCIES' VALUE ENGINEERING INCENTIVE PROGRAMS BY INCREASING PROMOTIONAL

EFFORTS TO OBTAIN CONTRACTOR AND SUBCONTRACTOR PARTICIPATION;

(3) DEVELOPING STANDARDIZED VALUE ENGINEERING INCENTIVE CLAUSES FOR INCLUSION BY THE AGENCIES IN ALL CONSTRUCTION CONTRACTS OVER A MINIMUM AMOUNT (SUCH AS $10,000); THE CLAUSES SHOULD COVER SUCH MATTERS AS SUBCONTRACTOR PARTICIPATION IN THE PROGRAM AND THE CONSIDERATION TO BE GIVEN LIFE-CYCLE COSTS;

(4) ESTABLISHING A CENTRAL ORGANIZATION TO (A) DEVELOP ALL APPROVED VALUE ENGINEERING PROPOSALS, (B) DEVELOP A PROCEDURE TO CATEGORIZE THE PROPOSALS BY ENGINEERING DISCIPLINE AND PRESENT THEM IN A CLEAR, CONCISE FORMAT, AND (C) CIRCULATE TO ALL COGNIZANT AGENCIES ON A REGULAR BASIS THOSE PROPOSALS THAT APPEAR TO HAVE WIDESPREAD APPLICATION;

(5) ESTABLISHING FORMAL PROCEDURES TO ENSURE THAT EACH AGENCY GIVES APPROPRIATE CONSIDERATION TO APPLYING PROVEN VALUE ENGINEERING PROPOSALS TO ALL OF ITS FUTURE PROJECTS.

FUTURE GAO AUDIT EFFORT IN VALUE ENGINEERING

WE DO NOT CONSIDER OUR CURRENT REVIEW AS THE LAST OF OUR EVALUATIONS OF EFFECTIVENESS OF VALUE ENGINEERING PROGRAMS IN FEDERAL CONSTRUCTION. OUR LONG-RANGE PROGRAM IS DIRECTED TO A RATHER COMPLETE AND COMPREHENSIVE ANALYSIS, AS RESOURCES PERMIT, OF THOSE MANAGEMENT TECHNIQUES OR TOOLS THAT PROMOTE ECONOMY AND EFFICIENCY IN GOVERNMENT. IN OUR OPINION VALUE ENGINEERING IS ONE OF THE TECHNIQUES THAT CAN BE EFFECTIVE IN IMPROVING GOVERNMENT OPERATIONS.

MR. CHAIRMAN, THIS CONCLUDES OUR STATEMENT. WE WILL BE PLEASED TO RESPOND TO ANY QUESTIONS YOU MAY HAVE.