TO CONSIDER STATUTORY USE OF VALUE ENGINEERING IN THE FEDERAL GOVERNMENT

HEARING

BEFORE THE

LEGISLATION AND NATIONAL SECURITY SUBCOMMITTEE

OF THE

COMMITTEE ON GOVERNMENT OPERATIONS HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRD CONGRESS

SECOND SESSION

MARCH 8, 1994

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TO CONSIDER STATUTORY USE OF VALUE ENGINEERING IN THE FEDERAL GOVERNMENT

TUESDAY, MARCH 8, 1994

HOUSE OF REPRESENTATIVES,
LEGISLATION AND NATIONAL SECURITY SUBCOMMITTEE
OF THE COMMITTEE ON GOVERNMENT OPERATIONS,
Washington, DC.

The subcommittee met, pursuant to notice, at 10:15 a.m., in room 2154, Rayburn House Office Building, Hon. Cardiss Collins (acting chairwoman of the subcommittee) presiding.

Members present: Representatives Cardiss Collins, Collin C. Peterson, and Al McCandless.

Subcommittee staff present: James C. Turner, staff director; Cheryl A. Phelps, professional staff member; Rosalind Burke-Alexander, clerk; and Jane O. Cobb, minority professional staff, Committee on Government Operations.

OPENING STATEMENT OF ACTING CHAIRWOMAN COLLINS

Mrs. COLLINS. Good morning. This hearing of the Government Operations Subcommittee on Legislation and National Security will come to order at this time.

I would like to welcome you to our subcommittee hearing today, which is to consider statutory use of value engineering. This hearing is especially important to me because, as some of you may know, I have been advocating greater use of value engineering in the Federal Government for years.

At the beginning of the 103d Congress, I reintroduced VE legislation along with Chairman Conyers' cosponsorship and support. H.R. 133, Collins-Conyers the "Systematic Application of Value Engineering Act" would greatly improve efficiency in the Federal Government. This bill now has bipartisan cosponsors, including several members of our full committee. Perhaps the major obstacle in increasing the use of VE is the fact that many people just don't understand exactly what it is and how it works.

Value engineering is a specific technique that identifies and eliminates unnecessary costs or delays and can be applied to manufacturing, construction, or management. Its purpose is to analyze the functions of equipment, systems, et cetera, and to identify and provide alternatives to any features, equipment, or methods that could be eliminated or modified to achieve the lowest possible life-cycle cost.

These changes are made while maintaining, if not improving the efficiency and quality of the item or program. Depending on the product or system being reviewed, a value-engineer review is done by a multidisciplinary team which can comprise architects, managers, metallurgists, engineers, managers, and so on.

Ironically, value engineering was first developed by General Electric during World War II as a way to maximize resources, but it's the Japanese companies who are currently some of the most dedicated users of VE.

In this country, even though it's been used regularly by some agencies and industries, including the Army Corps of Engineers, the Federal Highway Administration, Hughes Aircraft, General Dynamics, and others, it has not been used consistently by Federal agencies.

Now, why is this technique so important? Value engineering is critically important in these times of high budget deficits because its use has been proven to routinely yield dramatic savings. VE is widely accepted by the GAO and others as a means to save no less than 3 percent of a contract that's spent, and often that figure is 5 percent.

One doesn't have to be a rocket scientist to realize that, depending on the cost of the project, this can result in significant savings.

In fact, the Environmental Protection Agency, which is required by law to use VE for waste water treatment projects which cost over $10 million, have testified that their return on investments has been 34 to 1. That is, for every $1 being spent on a value engineering review, $34 is being saved through improvements in the project.

The values of VE and the importance of expanding its use in the Federal Government has been stated time and again by committees and commissions on both sides of the political spectrum.

Back in 1987, the Senate Committee on Governmental Affairs held hearings and issued a report stating that VE is not being adequately utilized by the Federal Government.

Congress' accounting office, the GAO, has released more than 15 reports over the past decade that emphasize the need for greater use of VE in the Federal Government.

With titles such as, "VE Has the Potential to Reduce Mass Transit Construction Costs"; "Greater Use of VE Has the Potential to Save the Department of Transportation Millions in Construction Costs"; and "VE Should Be Improved as Part of the Defense Department's Approach to Reducing Acquisition Costs," the GAO has consistently demonstrated why we need to increase the use of this proven cost-saving technique.

In addition, the Grace Commission's 1983 report recommended greater Federal use of VE and estimated that it could save $662 million over a 3-year period.

Now, some of you who are new to this issue might wonder why we haven't heeded all of these recommendations and required the Federal agencies to fully reap the benefits that value engineering is sure to bring about.

Well, for the past several years, we have been going back and forth with the administration and with the Office of OMB about how to best increase the use of VE. The fact is that each time we

held a hearing on VE legislation, the administration has asked that we hold off and allow them to improve Federal agency use of VE on their own.

So no legislation has been passed, and instead, in 1989, OMB released a directive called Circular A–131, that the executive branch offices utilize VE. Two years later, the President's Council on Integrity and Efficiency released an audit that clearly showed that the agencies had failed to implement effective VE programs, and opportunities to reduce costs and improve productivity were being lost.

In other words, zero progress has been made. Tax dollars were still being wasted and inefficiency still seemed to be an acceptable mode of operation.

Last year a new administration came in talking about reinventing government, and many of us had new hopes that value engineering would finally be recognized as the cost saving and efficiency building tool that it is, and that its use would be demanded by the White House.

But unfortunately, my efforts to include a VE requirement in the Vice President's original report of the National Performance Review were unsuccessful. As you can see in an article from the Washington Post, a recent article, that is, the administration may have "missed the boat with this omission."

Last summer, however, OMB reissued Circular A–131 and again directed that the Federal agencies use VE. Has the response to this second directive been more successful? I'm unconvinced. Today the need for Federal dollars could not be greater. Our Federal deficit, poorly funded schools, children growing up on welfare, and run-down cities are crying for funding.

I have heard many excuses over the years, but no one yet has provided me with a reasonable explanation for why we should not end the delays and begin saving Federal dollars immediately, with that legislation, I believe.

I don't see why we should be expected to believe that this will finally, magically happen on its own.

[The opening statement of Mrs. Collins follows:]

Congress of the United States
House of Representatives
CARDISS COLLINS
7TH DISTRICT, ILLINOIS

Opening Statement by
Congresswoman **Cardiss Collins**
at the Legis. And Nat'l Sec. Hearing
to Consider Statutory **Use of Value Engineering**
In the Federal Government
March 8, 1994

Good morning and welcome to the Legis. and Nat'l Sec. hearing considering **statutory use of value engineering. This hearing is especially important to me because,** as **some of** you **may know, I have** been **advocating greater use of** value engineering **in the federal** government **for** years. **At the** beginning **of the** 103rd **Congress, I reintroduced** VE legislation along **with Chairman** Conyers' cosponsorship **and support. H.R.** 133, **The** Collins/Conyers **SAVE** Act, **that would greatly** improve **efficiency in the** federal government. This **bill now has 48** bi-**partisan cosponsors** including **several members of our** full **committee.**

Perhaps the major obstacle in increasing **the use of VE is the fact that many** people **don't understand** exactly **what it is or how it works. Value** engineering **(VE) is** a specific **technique that identifies and eliminates unnecessary costs** or delays **and can be** applied to manufacturing, **construction or** management. **Its purpose** is **to analyze** the functions **of** equipment, systems, **etc. and to identify and** provide **alternatives to any** features, equipment **or methods that could be eliminated or modified to achieve** the **lowest possible life cycle cost.**

These changes **are made while maintaining, if not** improving, the efficiency and quality **of the** item **or** program. **Depending on** the product **or** system being reviewed, **a** VE **review** is done **by** a multi-disciplinary **team** which **can comprise architects,** managers, **metallurgists, engineers, managers, etc.**

Ironically, VE was first developed by General Electric during World War II as a way to maximize resources, but it is Japanese **companies who are** currently **some of the most dedicated users of VE. In this** country, **even** though **it has been used** regularly **by some agencies** and industries, including **the Army Corps of**

PLEASE SEND REPLY TO:

Engineers, the Federal Highway Administration, Hughes Aircraft, General Dynamics, and others, it has not been used consistently by federal agencies.

Now why is this technique so important? VE is critically important in these of high budget deficits because its use has been proven to routinely yield dramatic savings. VE is widely accepted by the GAO, and others, as a means to save no less than 3 percent of a contract's expense and often that figure is 5 percent. One doesn't have to be a rock scientist to realize that depending on the cost of a project, this can result in significant savings.

In fact, the Environmental Protection Agency (EPA) which is required by law to use VE for wastewater treatment projects which cost over $10 million has testified that their return on investments has been 34-to-1! In other words, for every dollar being spent on a ve review, 34 dollars is being saved through improvements in the project!

The values of VE and the importance of expanding its use in the federal government have been stated time and time again by committees and commissions on both sides of the political spectrum. Back in 1987, the Senate Committee on Governmental Affairs held hearings and issued a report stating that VE is not being adequately utilized by the federal government.

Congress' accounting office, the GAO has released more than 15 reports over the past decade that emphasize the need for greater use of VE in the federal government. With titles such as, "VE has the potential to reduce mass transit construction costs", "Greater use of VE has the potential to save the Dept. of Transportation millions in construction costs" and "VE should be improved as part of the Defense Dept.'s approach to reducing acquisition cost", the GAO has consistently demonstrated why we need to increase the usa of this proven cost-saving technique.

In addition, the Grace Commission's 1983 report recommended greater federal use of VE and estimated that it could save $662 million over a three year period.

Some of you who are new to this issue might wonder why we haven't heeded all these recommendations and required the federal agencies to fully reap the benefits that value engineering is sure to

bring about. Well, for the past several years, we have been going back and forth with the administration and the Office of Management and Budget (OMB) about how to best increase use of VE. The fact is that each time we have held a hearing on VE legislation, the Administration has asked that we hold-off and allow them to improve federal agency use of VE on their own.

So, no legislation has been passed and instead, in 1989, OMB released a directive, called Circular A-131, that the executive branch offices utilize VE. Two years later the President's Council on Integrity and Efficiency (PCIE) released an audit that clearly showed that the agencies had failed to implement effective VE programs and opportunities to reduce costs and improve productivity were being lost. In other words, zero progress had been made. Taxdollars were still being wasted and inefficiency still seemed to be an acceptable mode of operation.

Last year a new administration came in talking about "reinventing government" and many of us had new hopes that value engineering would finally be recognized for the cost-saving and efficiency-building tool that it is and that its use would be demanded by the White House.

Unfortunately, my efforts to include a VE requirement in the Vice President's original "Report of the National Performance Review" were unsuccessful. As you can see in this article from the Washington Post, the Administration may have "missed the boat" with this omission. Last summer, however, OMB reissued Circular A-131 and again directed that the federal agencies use VE. Has the response to this second directive been more successful? I am unconvinced.

Today, the need for federal dollars could not be any greater. Our federal deficit, poorly funded schools, children growing up in welfare and run-down cities are crying for funding. I have heard many excuses over the years but no one yet has provided me with a reasonable explanation for why we should not end the delays and begin saving federal dollars immediately. Without legislation, I don't see why we should be expected to believe that this will finally, magically happen on its own.

Again, Mr. Chairman, I thank you for holding this important hearing and I look forward to hearing from our witnesses.

Mrs. COLLINS. Mr. McCandless.

Mr. MCCANDLESS. Thank you, Madam Chairman. We in Congress have a responsibility to promote careful spending of taxpayer dollars and to save those dollars where possible. Value engineering is a technique intended to save money, increase quality and productivity, and it has proven to be effective in achieving these goals.

It can be applied to many programs and functions of the Federal Government, ranging from procurement to product design to program function.

The problem has been that there is a low application of the technique among Federal agencies and we are not realizing the potential savings. But does this mean we should mandate its use in all Federal agencies?

I urge the subcommittee to look back at previous testimony, cautioning universal application of this concept. In testimony received a couple of years ago, the General Accounting Office made the point that value engineering does not fit every situation or every agency's program.

That same testimony also urged flexibility rather than rigidity to encourage value engineering. The GAO witness said that whatever the virtues of value engineering, it is not the only option available for controlling costs and building quality in government operations.

I certainly support value engineering's savings potential. However, I agree with the GAO's conclusions that the key to value engineering and to other management techniques is their appropriate use rather than their mandated use.

Madam Chairman, I look forward to hearing from our witnesses about how to encourage greater use of this technique by Federal agencies who can post measurable benefits in its application to programs and systems. Thank you.

At this time, Madam Chairman, I would ask unanimous consent that Mr. Clinger's statement be entered into the record.

Mrs. COLLINS. Without objection.

[The prepared statement of Mr. Clinger follows:]

Statement of the
HONORABLE WILLIAM F. CLINGER, JR.
Legislation and National Security Subcommittee
March 8, 1994

Thank you, Mr. Chairman, for continuing these oversight hearings on the use of value engineering by Federal agencies and departments to cut costs, while maintaining quality and efficiency.

The last hearing held by this subcommittee was, I believe, in June of 1992. I look forward to hearing from the witnesses today how far we have come since that hearing. Are all agencies in compliance with the OMB circular on value engineering? If not, why not? If so, are they reporting significant cost savings? How are these savings realized?

The hearing today will explore the codification of the OMB circular on value engineering and also explore mandating the use of value engineering by all Federal agencies.

We need every tool possible at work in our Federal bureaucracy to cut wasteful spending. I am interested to hear how the value engineering process is working and its prospects for greater savings in our government programs.

Mrs. COLLINS. And also for unanimous consent request, we—and I don't hear one, that the statement of the full committee chair, Mr. John Conyers, and the ranking member, Mr. Clinger, as well as subcommittee member Carolyn Maloney's statements be entered in the record at the appropriate point in time.

[The prepared statements of Mr. Conyers and Ms. Maloney follow:]

OPENING STATEMENT

HONORABLE JOHN CONYERS, JR.

CHAIRMAN

LEGISLATION AND NATIONAL SECURITY SUBCOMMITTEE

HEARING TO CONSIDER STATUTORY USE OF
VALUE ENGINEERING IN FEDERAL GOVERNMENT

MARCH 8, 1994

VALUE ENGINEERING IS A LONG-ACCEPTED, COST-CONTROL TECHNIQUE THAT IDENTIFIES, AND THEN ELIMINATES OR MODIFIES ANYTHING THAT ADDS TO THE COST OF A PRODUCT OR SERVICE BUT IS NOT NECESSARY TO ITS BASIC FUNCTION.

CURRENT GOVERNMENT POLICY ENCOURAGES, BUT DOES NOT MANDATE THE USE OF VE. WE ARE HERE THIS MORNING TO CONSIDER WHETHER THE FULL BENEFITS OF VALUE ENGINEERING CAN BE ACHIEVED BY FEDERAL DEPARTMENTS AND AGENCIES UNDER OMB'S POLICY DIRECTIVE, OR WHETHER LEGISLATIVE ACTION MUST BE TAKEN TO GET REAL RESULTS.

IT HAS BEEN DEMONSTRATED THAT VALUE ENGINEERING REDUCES NONESSENTIAL GOVERNMENT SPENDING, CUTS WASTE, AND IMPROVES QUALITY, COMPETITIVENESS AND PERFORMANCE. OVER THE PAST 20 YEARS, REPORTS ISSUED BY THE GENERAL ACCOUNTING OFFICE AND THE INSPECTORS GENERAL HAVE CONFIRMED THE BENEFITS OF VE IN THE FEDERAL PROCUREMENT PROCESS.

WHILE THESE REPORTS CONCLUDE THAT BILLIONS OF DOLLARS HAVE BEEN SAVED AS A RESULT OF VALUE ENGINEERING, THEY

ALSO HIGHLIGHT THE FAILURE OF EXECUTIVE AGENCIES TO MAXIMIZE COST SAVINGS THROUGH EFFECTIVE IMPLEMENTATION.

THE AMERICAN TAXPAYERS ENTRUST US TO SPEND THEIR MONEY WISELY. WE HAVE THE TOOLS TO DO SO, BUT I AM DEEPLY CONCERNED THAT WE DON'T ALWAYS SEEM TO HAVE THE WILL.

DESPITE VE'S BENEFITS AND THE ADMINISTRATION'S EFFORTS TO ENCOURAGE ITS USE, EXECUTIVE AGENCIES HAVE BEEN SLOW TO FULLY IMPLEMENT VALUE ENGINEERING. TWO YEARS AGO, THE FORMER ADMINISTRATOR OF THE OFFICE OF FEDERAL PROCUREMENT POLICY TESTIFIED THAT CORRECTIVE ACTION WAS UNDERWAY TO IMPROVE COMPLIANCE. I LOOK FORWARD TO HEARING THE RESULTS OF THOSE EFFORTS.

AS CHAIRMAN OF THIS COMMITTEE, I AM CHARGED WITH ENSURING THAT TAXPAYER DOLLARS ARE SPENT SENSIBLY AND ECONOMICALLY. I AM COMMITTED TO SEEING THAT VALUE ENGINEERING AND OTHER COST CONTROL TECHNIQUES ARE USED AS WIDELY AS POSSIBLE IN THE FEDERAL PROCUREMENT PROCESS. BILLIONS OF TAXPAYER DOLLARS ARE SAVED BY FEDERAL AGENCIES USING VALUE ENGINEERING. THERE IS TREMENDOUS POTENTIAL TO

SAVE BILLIONS MORE. BUT UNTIL THERE IS A REAL, CONSCIENTIOUS, AND, IF NECESSARY, STATUTORY COMMITMENT TO IMPLEMENT VE, THESE SAVINGS WILL BE LOST.

I HAVE JOINED OUR RANKING MAJORITY MEMBER, REPRESENTATIVE CARDISS COLLINS, WHO HAS LED COMMITTEE ACTION ON THIS ISSUE, TO INTRODUCE H.R. 133, LEGISLATION ESTABLISHING STATUTORY VALUE ENGINEERING REVIEW REQUIREMENTS FOR THE FEDERAL GOVERNMENT. WE WILL CONSIDER ASPECTS OF THAT BILL, AS WELL AS OTHER REFORM PROPOSALS THAT ADDRESS THE FEDERAL GOVERNMENT'S RELUCTANCE TO FULLY UTILIZE V.E.

WE WILL CONSIDER PROVISIONS IN H.R. 2014, INTRODUCED BY REPRESENTATIVE LESLIE BYRNE OR VIRGINIA. WHILE IN THE STATE LEGISLATURE, REP. BYRNE SUCCESSFULLY SHEPHERDED PASSAGE OF A SIMILAR MEASURE PROVIDING INCENTIVES FOR USE OF VE IN VIRGINIA TRANSIT PROJECTS. THAT LAW RESULTED IN SAVINGS OF $28 MILLION LAST YEAR. THE COMMITTEE THANKS REPRESENTATIVE BYRNE FOR HER EFFORTS AND WELCOMES HER TESTIMONY THIS MORNING.

WE ALSO WELCOME THE TESTIMONY OF OFFICE OF FEDERAL PROCUREMENT POLICY ADMINISTRATOR STEVEN KELMAN, WHO WILL TELL US ABOUT THE PROGRESS WE HAVE MADE AND THE ADDITIONAL COST SAVINGS WE HAVE REALIZED UNDER THE CURRENT POLICY DIRECTIVE. I MUST TELL YOU, DR. KELMAN, THAT I HAVE SOME DOUBTS THAT THE FULL BENEFITS OF VE CAN BE ACHIEVED WITHOUT LEGISLATION. BUT I HAVE AN OPEN MIND AND I AM WILLING TO OBJECTIVELY CONSIDER YOUR VIEWS.

OUR FY 1995 BUDGET DEFICIT IS PROJECTED AT $171 BILLION, AND COST-CUTTING IS CRITICAL. IN THIS ERA OF BUDGET REDUCTIONS, GOVERNMENT STREAMLINING AND INTERNATIONAL COMPETITIVENESS, IT IS IMPERATIVE THAT WE EXERCISE FISCAL RESPONSIBILITY, IMPROVE EFFICIENCY AND PRODUCTIVITY, AND DEVELOP SUPERIOR TECHNOLOGIES AND PRODUCTS. THE ADMINISTRATION'S COMMITMENT TO THIS GOAL IS EVIDENT. THE IMPLEMENTATION OF VALUE ENGINEERING TO ITS FULLEST POTENTIAL IS AN ADDITIONAL RESOURCE TOWARD THIS END.

AT THIS TIME I WISH TO RECOGNIZE THE RANKING MEMBER OF THE SUBCOMMITTEE, MR. McCANDLESS FOR ANY REMARKS HE MAY HAVE.

CAROLYN B. MALONEY
14th District, New York

COMMITTEE ON BANKING, FINANCE AND URBAN AFFAIRS

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REP. CAROLYN MALONEY -- OPENING STATEMENT

LEGISLATION AND NATIONAL SECURITY HEARING ON VALUE ENGINEERING

3/8/94

Thank you Mr. Chairman. Value Engineering is a difficult concept for the layman to understand and for that reason I am happy that this hearing has been convened.

Basically, value engineering is the application of engineering principles in a systematic way to the process of cost saving. By identifying and, if necessary eliminating, that which adds cost to a product or system, the Federal Government can try to keep costs down. Systematic application of value engineering thus has the potential of significantly reducing wasteful spending, something that we on this committee have been trying to accomplish for some time.

Value engineering has been applied in Virginia on a voluntary basis to the Transportation Department, and I welcome my friend Congresswoman Leslie Byrne here today to give us some details on its application. Value engineering has also been used for some time in my own home city of New York and I want to thank Mr. Brezenoff and Ms. Woller in advance for their testimony and insight.

Thank you again Mr. Chairman and welcome to all our witnesses.

Mrs. COLLINS. Also on unanimous consent request, I'm asking that the article I had referenced to, "Creating a Government that Works Better and Costs Less,"—sorry—"Missing the Boat on Value Engineering" be made a part of the record at the appropriate point in time.

[The article follows:]

THE WASHINGTON POST ... TUESDAY, SEPTEMBER 14, 1993 A19

THE FEDERAL PAGE

Capital Notebook

Missing the Boat on Value Engineering

By Guy Gugliotta
Washington Post Staff Writer

So here's the problem: Vice President Gore prepares this glossy, 168-page booklet on how to make government "work better and cost less," then immediately runs out of copies.

Never mind. It's a few days later, there are copies galore, and all you have to do to get one is fax in an order blank (dial 202-512-2250) with your credit card number ($14 a copy, $17.50 foreign).

Except that the handy order blank is on the back page of the glossy, 168-page booklet. Does this mean you have to have a copy of the booklet before you can order one?

Clever marketing strategy, Al. Maybe you should have signed up the value engineering specialists when they offered help. They would have sat down, looked at your booklet and thought up something truly inventive, like putting piles of handy order blanks in post offices.

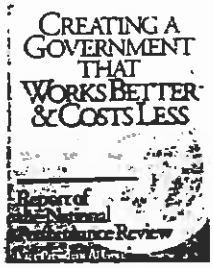
Or maybe they would have told you to get a bunch of ex-jocks and a toll-free number when you were flogging the book on talk shows last week ("Works better! Costs less! Just call 1-800-UNCLE-AL!").

Instead you snubbed them: "I called up, but I couldn't get an appointment with anybody," said Hal Tufty, a Washington-based value engineering specialist and publisher of the Value Digest newsletter. "I think they were under a severe time constraint."

Value engineering sounds like an advertising slogan created by a 1950s appliance manufacturer ("Our washing machines are value engineered to make your clothing sunshine bright!"), which may be one reason the federal government has never been particularly fond of it. "The name is peculiar," Tufty acknowledged.

Another could be that it is a relatively simple idea. Collect four experts and get them together with a trained problem-solver certified by the Society of American Value Engineers (SAVE, of course). Then show them your problem and let them find the innovative, cost-saving, red-tape-eliminating solution.

Big deal, you say. Every bureaucracy and company already does that. Well, as we have noticed, the vice president of the



world's most powerful nation, for one, somehow missed it.

What value engineers do is find the obvious idea that causes executives to slap their foreheads and exclaim, "Why didn't I think of that?" Last year, for instance, Tufty, a two-time president of SAVE, put together a value engineering team in Bombay, India, to figure out an expeditious way to get local bank deposits to the Bank of India:

"The banks were playing with all sorts of courier systems," Tufty said. "But the right solution was proposed by a non-banker on our team—simply have the Bank of India open accounts in the local banks and put the money there."

Value engineering has been around for about 50 years, and the Japanese have been using it to nickel-and-dime U.S. industry to death for most of that time. Cut down the number of spot welds on the automobile chassis, subtract a minute of assembly time, stop using two employees where one will do. In 1987, Business Week magazine reported 17 of Japan's top 20 companies had value engineers in top executive positions.

Value engineering also has its advocates in U.S. industry. The Bechtel Group has a value engineer on staff. Hughes Aircraft Co. has saved more than $1.6 billion in the 25 years it has used the technique. Martin Marietta Corp. has saved $1 billion in 10 years; Westinghouse Electric Corp. saved $350 million on a single fire control radar system.

The Defense Department likes value engineering, and the Office of Management and Budget has circulated directives requiring value engineering studies "where appropriate" in 69 federal agencies with budgets greater than $10 million (everything from the Executive Office of the President to the American Battle Monuments Commission).

But because "where appropriate" can, and often does, mean "never appropriate" in the federal bureaucracy, a bipartisan congressional group led by Reps. John Conyers Jr. (D-Mich.) and Cardiss Collins (D-Ill.) is pushing the Systematic Application of Value Engineering Act to require agencies to use it.

Tufty, 71, a good-humored former bomber pilot, newspaper reporter, Foreign Service officer and Peace Corps area director, remains optimistic that value engineering's day will come. Every two years SAVE holds "VE Day" in Congress and reels in a few more converts.

But it's tough going. Tufty suspects this may be because SAVE has no public relations budget and loses credibility from time to time. Government reports say value engineering studies regularly save 3 percent to 5 percent of the cost of a project, and industry uses 10 percent as a rule of thumb. Savings of 18 percent to 25 percent are not uncommon. Thus, Tufty said, "people think it must be a fake."

Still, it is clear that Tufty and SAVE regarded Gore's National Performance Review as value engineering's golden opportunity. After last year's presidential election several issues of Value Digest were filled with teasers: "The Clinton administration is being briefed on VE to play a role in 'Reinventing Government,' " or "Great Opportunities for VE in New Administration."

Not yet.

Mrs. COLLINS. Our first witness is the Honorable Leslie Byrne from the State of Virginia. Would you come forward, please.

We welcome you to our subcommittee hearing today. We know of your tremendous interest in this issue, and we're delighted to have you as one of our witnesses this morning. You may begin any way you choose.

STATEMENT OF HON. LESLIE L. BYRNE, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF VIRGINIA

Mrs. BYRNE. Well, I thank you, Madam Chairman, for your comments. It seems that we're singing out the same hymnal. But I will read my prepared statement, and because I have had some background in value engineering and its application and mandating it, maybe we can get into a colloquy about how that has worked.

Madam Chairman and members of the committee, I would like to thank you and the rest of the committee for focusing on value engineering, including my legislation, H.R. 2014, the "Value Engineering Better Transportation Act," in this discussion.

Value engineering has the potential to save our country billions of dollars, providing the greatest bang for our buck. I'm sure that this subcommittee has examined value engineering's numerous benefits, and by our Chairwoman Collins, who has worked for value engineering for years, with whom I have had the opportunity to work on this issue.

I would like to spend a few minutes to talk about my experience with value engineering in the transportation sector of both the State and Federal Governments.

Virginia has had a long history with VE and we have had the distinction of being the only State in the Nation that has mandated used of VE for transportation projects.

Informally, value engineering has been in place in the Commonwealth of Virginia since the mid-1970's, and by 1986, when I entered the Virginia General Assembly, value engineering's proven effectiveness had been rewarded with an assignment of one full-time coordinator to oversee training and studies on transportation projects.

From 1986 to 1989, value engineering was used on 50 selected projects and saved an average of 10 percent per project.

In 1990, I introduced legislation that would mandate value engineering for State transportation projects over $2 million. This legislation passed both houses and was signed into law by then-Governor Wilder.

Although this legislation passed with broad-based support, during the implementation, we experienced resistance from individuals who believed that value engineering should not be mandated or formalized.

They argued that it was similar to other system analysis already in use, like total quality management, and that VE would bog down the State in costly bureaucratic details.

I say strongly, Madam Chairman, that this did not happen. With the help of the transportation commissioner in Virginia, we were able to implement value engineering, and over its first 2 years of operation, value engineering has saved Virginia over $39 million on

road-building projects, with the ratio of $30 saved to every $1 spent on value engineering.

Some projects the ratio has been $60 for every $1 spent.

After these successes on the State level, one of the first things I did upon entering Congress last year was to introduce H.R. 2014. Although similar to the bill that I passed in the Virginia Legislature, it has one distinctive difference.

VE works best in Virginia when mandated by the State government, but I am aware of the difficulties caused by Federal mandates, and that may end up tying the hands of State officials.

We have a great many capable government officials at the State level, and I believe Congress needs to give States the tools they need to get the work done.

Therefore, an alternative to mandating value engineering is H.R. 2014, which uses a win-win proposition and rewards the States that use VE to save money on transportation projects by providing them with an additional Federal contribution.

As you can see in the information that's provided, the formula creates a situation that benefits everyone. When we increase the Federal project share to the State transportation departments that use value engineering, the physical burden of the State is reduced.

When the project's overall costs go down through value engineering, the financial burden on the Federal Government is reduced.

Value engineering lets all levels of government spend less and that saves taxpayer dollars. It's no wonder that the National Taxpayers' Union has estimated that H.R. 2014 will save our Nation over $1 billion a year in transportation costs alone. This will allow our States to build better highways, bridges, roads at less cost, and build a more productive country at the same time.

As you examine the merits of value engineering, I would encourage you to look at the success that Virginia has had. When we talk about reinventing government, let's look toward systems that have proven to save money and get results. VE works, and it's time to give the government the incentives to use it.

Thank you, Madam Chairman. I'll take any questions.

[The prepared statement of Mrs. Byrne follows:]

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SUBCOMMITTEES
SURFACE TRANSPORTATION
WATER RESOURCES AND ENVIRONMENT
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CONGRESSWOMAN LESLIE L. BYRNE

STATEMENT BEFORE THE SUBCOMMITTEE ON LEGISLATION AND NATURAL SECURITY
COMMITTEE ON GOVERNMENT OPERATIONS

HEARING ON STATUTORY USE OF VALUE ENGINEERING

MARCH 8, 1994

Mr. Chairman:

I would like to thank you and the rest of the committee for focusing on Value Engineering and for including my legislation, H.R. 2014 -- The Value Engineering Better Transportation Act -- in this discussion.

Value Engineering has the potential to save our country billions of dollars, providing the greatest bang for our buck. I am sure this subcommittee has been told of V.E.'s numerous benefits by our colleague Congresswoman Collins -- who has worked on V.E. for years and with whom I have had the opportunity to work on this issue.

I would like to spend a few minutes to talk about my experiences with V.E in the transportation sector at both the state and federal levels.

Virginia has had a long history with V.E, and we have the distinction of being the only state in the nation that has mandated the use of V.E for transportation projects. Informally, V.E. has been in place in the Commonwealth of Virginia since the mid-seventies, and by 1986 -- when I entered the Virginia State Legislature -- V.E.'s proven effectiveness had been rewarded with the assignment of one full-time coordinator to oversee training and studies.

From 1986 to 1989, V.E was used on 50 selected projects and saved an average of 10 percent per project. In 1990, I introduced legislation that would mandate V.E. for state transportation projects of 2 million dollars and over. This legislation passed both houses and was signed into law by then-Governor Wilder.

Although this legislation passed with broad-based support, during implementation we experienced resistance from individuals who believed that V.E should not be mandated or formalized. They argued that it was similar to other system analyses already in use like Total Quality Management, and that V.E. would bog down the state in costly bureaucratic details.

But this did not happen. With the help of the Transportation Commissioner, we were able to implement V.E, and over its first two years, V.E has saved the Commonwealth of Virginia over 39 million dollars, with a ratio of 30 dollars saved to every dollar spent on V.E. -- on some projects, the ratio has been as high as 60 dollars saved for every dollar spent.

After these successes on the state level, one of the very first things I did upon entering Congress was to introduce H.R. 2014. Although similar to the bill that passed the Virginia State Legislature, H.R. 2014 has one distinctive difference.

V.E worked best for Virginia when mandated by the state government, but I am aware of the difficulties caused by well-intentioned federal mandates that wind up tying the hands of state governments. We have a great many capable government officials at the state levels, and I believe that Congress needs to give states the tools that they need to get the work done without forcing it upon them.

Therefore, instead of mandating V.E., H.R. 2014 uses a "win-win" approach that rewards states that use V.E. to save money on transportation projects by providing them an additional federal contribution. As you can see in the information provided, this formula creates a situation that benefits everyone. When we increase the federal project share to state transportation departments that use Value Engineering, the fiscal burden on the state is reduced. And when a project's overall cost goes down through Value Engineering, the financial burden on the federal government is reduced. Value Engineering lets all levels of government spend less, and that saves taxpayer dollars.

It is no wonder that the National Taxpayer's Union has estimated that H.R. 2014 will save our nation over a billion dollars a year in transportation costs alone. This will allow our states to build better highways, bridges and roads at less cost, thereby allowing us to build a more productive country.

As you examine the merits of V.E., I would encourage you to look at the success Virginia has had. When we talk about Reinventing Government, let's look towards systems that have proven to save money and get results. V.E. works, and it is time to give government the incentives to use it.

Thank you.

THE VALUE ENGINEERING BETTER TRANSPORTATION ACT

OBJECTIVE

* Provide states with a tool to produce safer, more cost-effective transportation projects through the voluntary use of Value Engineering.

BENEFIT TO STATES

* Increased federal share: up to ten percent for transportation projects.

AREA COVERED

* Federal highway and transit projects.

PROGRAM QUALIFICATIONS

* Projects must have an estimated cost of at least $2,000,000

* Conduct a Value Engineering study before 35 percent of project design is completed.

* Submit to the Transportation Secretary a completed Value Engineering study which includes an outline of modifications.

* Reduce a program cost by five percent.

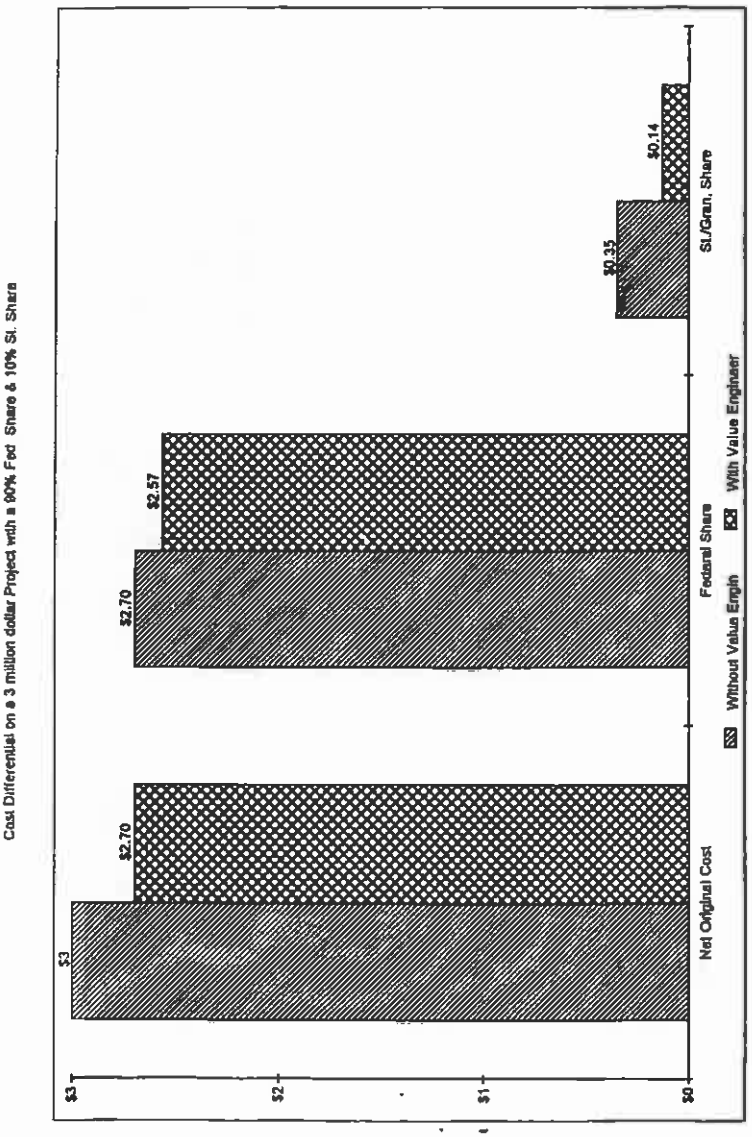
* An additional five percent of federal funds is available to states that reduce project costs by 15 percent through the use of value engineering.

GUIDELINES

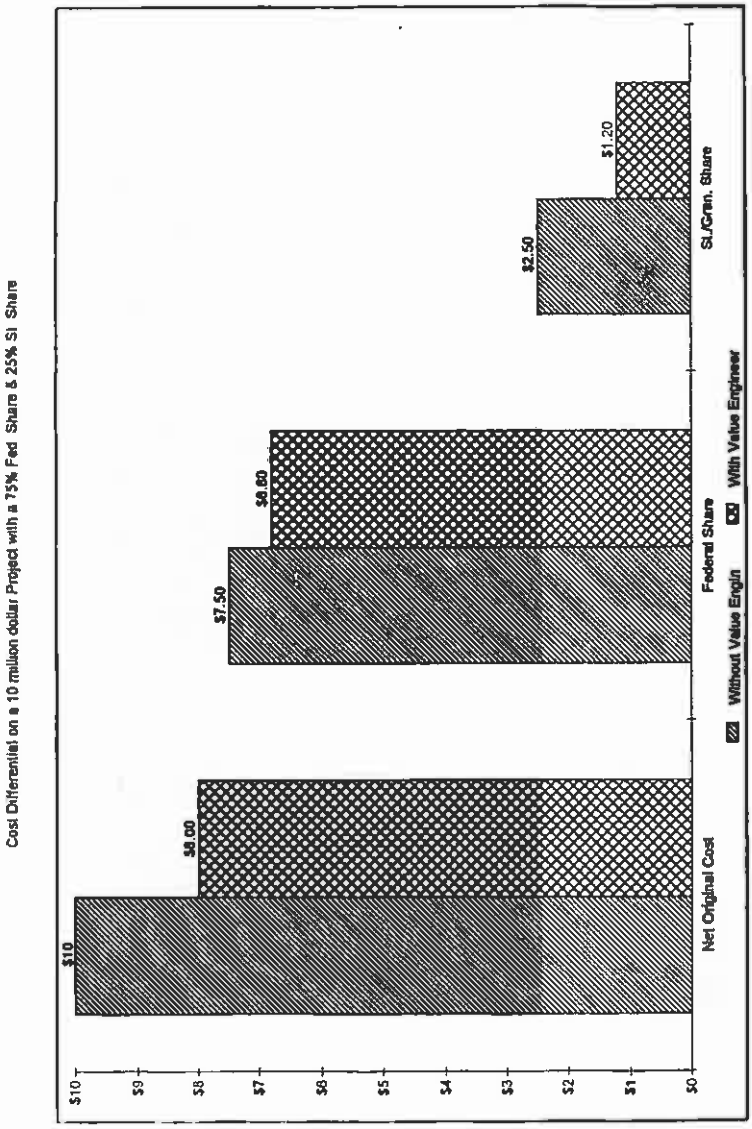
* No federal transportation funds will be used for training.

* States are guaranteed original federal funding levels regardless of study outcome.

* Federal government share will not exceed 100 percent of project cost.



Value Engineering Study that Reduces Program Cost by 10%


Cost Differential on a 10 million dollar Project with a 75% Fed Share & 25% St Share
$10
$8.00
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$6
$5
$4
$3
$2
$1
$0
Net Original Cost
Federal Share
St./Gren. Share
Without Value Engin
With Value Engineer
Value Engineering Study that Reduces Program Cost by 20%

Mrs. COLLINS. You mentioned that you had some great success in the State of Virginia. I'm wondering if you have experienced any resistance in passing the legislation in the State of Virginia?

Mrs. BYRNE. I would say, Madam Chairman, that the bureaucracy fought me tooth and nail. They didn't like the idea of somebody looking over their shoulder. They didn't like the idea of somebody going back and redoing what they felt they had already done.

And the interesting thing is that once it was mandated, it meant that you were not picking out specific projects to value-engineer, that everybody got value-engineered, and added an element of fairness to the process. Those same bureaucrats who were so resistant today are value engineering's biggest champions.

They thought they were using something like value engineering before, but they weren't. They called it value engineering, but it wasn't. And so they now see the difference of value engineering every project over $2 million in transportation, and it has paid off.

They are currently consulting with other States, in Maine, West Virginia, and New Hampshire, to teach them how to value engineer.

They have become experts since this legislation was passed, and I firmly believe that if we had not mandated it in Virginia, that we would have gone down the same road of using processes that were like value engineering sometimes on some projects, but never getting the kind of payback that we're seeing now in Virginia.

Mrs. COLLINS. Now, you mentioned the word "mandating." Your legislation does not mandate, is that right?

Mrs. BYRNE. That's correct.

Mrs. COLLINS. It's a voluntary effort.

Mrs. BYRNE. It's a voluntary effort, and it's based on the idea that a State that chooses to use value engineering, either mandating it within their own State or setting up a mechanism to do it, could be rewarded for using it on national highway projects.

And we came up with what I felt was a fairly elegant win-win situation in that the Federal Government would save money because the cost of the highway projects would be less, and then the States would save money because they were using value engineering and the Federal Government would pay a greater share of the formula.

So those two things created this win-win situation, and I think in terms of what you are trying to do, Madam Chairman, that we not only have to look at mandating within our own context with our agencies, but if we're looking to get States to use value engineering more readily, that we could tie it to formula and give them rewards for using value engineering within those formulas. And that's what I'm trying to do on this transportation approach.

Mrs. COLLINS. Thank you. Mr. McCandless.

Mr. MCCANDLESS. Just one quick question, Mrs. Byrne. You talk about savings, savings, savings. At what point do we achieve the savings at the expense of quality?

Mrs. BYRNE. Well, value engineering takes in quality. I guess the best analogy for value engineering that I ever heard is that you want to go outside and you have a necktie on, and the wind is blowing. Now, you can stuff that necktie in your shirt, you can put

a paper clip on it, you can put a tie bar on it, or you can put a diamond stickpin on it.

And depending on where you're going and what you're doing and how long you'll be out in the weather depends on what kind of thing you're going to use to keep that tie down.

That's value engineering. It's not only cost savings, it's quality, looking for better materials to do the same job that will last longer.

There are all kinds of aspects to value engineering that go way beyond cost. It just happens to save a lot of money, too.

Mr. MCCANDLESS. Thank you.

Mrs. COLLINS. I have no further questions at this time. You're certainly welcome Mrs. Byrne to join our panel to hear the testimony.

Mrs. BYRNE. Thank you, Madam Chairman.

Mrs. COLLINS. Our first panel is going to be Hon. Steven Kelman, who is the Administrator of the Office of Federal Procurement Policy, the U.S. Office of OMB.

Prior to his nomination, Dr. Kelman was a professor of public management at Harvard University's John F. Kennedy School of Government. Dr. Kelman has authored numerous books and articles on policymaking process and improving the management of government organizations.

Mr. Kelman, you're joined, I'm told, by Mr. William Coleman.

Mr. KELMAN. Yes, I am. I am joined by my colleague Bill Coleman, who is our Deputy Administrator for procurement law and legislation at the Office of Federal Procurement Policy.

Mrs. COLLINS. The House rules are that you will have 5 minutes to give your oral statement, with the full knowledge that your entire statement will be made a part of the record.

We don't happen to have the time clock right now so we're going to sort of be on an honor's basis right now, but you may begin your testimony at this time.

STATEMENT OF STEVEN KELMAN, ADMINISTRATOR, OFFICE OF FEDERAL PROCUREMENT POLICY, OFFICE OF MANAGEMENT AND BUDGET, ACCOMPANIED BY WILLIAM COLEMAN, DEPUTY ADMINISTRATOR FOR PROCUREMENT LAW AND LEGISLATION

Mr. KELMAN. OK, you can cut me off if I start going on too long.

First of all, let me express my appreciation for the opportunity to be here today and to say, if I could that as you indicated, a former or on-leave professor of public management, I really appreciate the interest of this subcommittee in an issue such as this, because this is not something that gets headlines.

It's not a sexy, flashy issue, but it's a good government issue, and for that reason, I very much, if I could, would like to express appreciation for your interest in issues such as this, for the interest of the chairman and the ranking minority member, and of Congressman McCandless in this issue.

Let me also say that I have a little bit of personal knowledge of value engineering. I was interested to see—I haven't seen her yet here today, but Jill Woller from New York City, also of Management of Budget, on your witness list.

I don't know if she is actually coming, I didn't see her in the audience. I actually served just last summer, before coming into the government, as a consultant to a group of value engineers working on a project for Jill Woller's office in New York City. So I have a little bit of background and knowledge here.

And let me lastly say, if I could, before I begin my testimony on behalf of the administration, since we haven't—there haven't been hearings before the Government Operations Committee on procurement reform legislation this year, I just wanted, if I could, for the record and on behalf of the administration to express our very sincere appreciation to Chairman Conyers, to ranking minority Member Clinger, and to all the members of the Government Operations Committee for the work you all have done in cooperation with the administration and with the Senate to try to make procurement reform a reality.

And this is some really good work that people have been doing that we very much appreciate.

I'm going to talk about a few things today. First I want to talk a bit about the role of the Office of Federal Procurement Policy in value engineering for the Federal Government. We are the primary government agency for developing Federal procurement policy and overseer of the Federal Acquisition Regulation, the FAR.

And we have tried over the past few years to take strong affirmative action to implement value engineering by incorporating value engineering requirements in the FAR.

The FAR identifies two basic value engineering approaches, an incentive approach, where participation by suppliers to the Federal Government is voluntary and contractors use their own resources to develop what are called value engineering change proposals, VECPs.

If those proposals are accepted, the contractor and the government share on savings identified.

The second approach, also contained in the FAR, is a mandatory program where the government requires and pays contractors to conduct value engineering efforts where appropriate and at the discretion of the government agency.

What I would say, speaking on behalf of the administration, is that I am reluctant to endorse the need for either legislatively or OMB-mandated value engineering programs beyond the requirement we already have that VE be utilized where appropriate.

I certainly recognize and am sympathetic to the need to encourage proper value engineering practices. I am also aware of the need to avoid any further encumbering of the procurement process, which we're trying to streamline and simplify.

And the administration is very concerned that the bill would require that all agencies establish VE studies on 80 percent of their in-house and contracted construction, and even the administrative programmatic and grant projects.

DOD, DOT, and some of the other major procurement and construction agencies have developed internal value engineering regulations that are tailored to their own specific programs.

We try to provide appropriate governmentwide guidance, but any governmentwide policy, in our view, needs to permit the tailoring

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON D C 20503

March 7, 1994

STATEMENT OF THE HONORABLE STEVE KELMAN
ADMINISTRATOR FOR FEDERAL PROCUREMENT POLICY
BEFORE THE SUBCOMMITTEE ON LEGISLATION AND NATIONAL SECURITY
OF THE HOUSE COMMITTEE ON GOVERNMENTAL OPERATIONS

Mr. Chairman and Members of the Subcommittee:

I appreciate the opportunity to testify today concerning H.R. 133, the "Systematic Application of Value Engineering Act". Value engineering is a challenging and important topic and I commend you for holding this hearing.

My testimony is organized around a few issues. My specific response to each of the issues is provided below.

OFPP's Role in Value Engineering in the Federal Government.

As the primary Government agency for developing Federal procurement policy and as overseer of the Federal Acquisition Regulations (FAR) and the FAR Council, OFPP has an important role regarding the use of value engineering in Government contracting. Most value engineering efforts are accomplished through the procurement process and, to that extent, they are within the purview of broad general principles developed by OFPP.

We have taken strong affirmative action to implement value engineering by incorporating value engineering requirements in the FAR. Our present policy on value engineering is specified in Part 48 and 52 of the FAR. The FAR identifies two basic value engineering approaches. The first is an incentive approach in which contractor participation is voluntary and the contractor uses its own resources to develop and submit value engineering change proposals (VECPs). If a VECP is accepted, any savings resulting therefrom are shared with the contractor on a preestablished basis identified in the contract. The second approach, also contained in the FAR, is a mandatory program in which the Government requires and pays the contractor to conduct a specific value engineering effort. This effort is generally directed at the major cost drivers of a system or project.

While the FAR is administered and maintained under the respective regulatory authorities of the Department of Defense, the General Services Administration and the National Aeronautics and Space Administration, OFPP is ultimately responsible for its overall policy content. Accordingly if we determine additional actions are required to further the use of value engineering through the procurement process, the FAR and agency supplements to the FAR is the appropriate place to do that.

However, I am reluctant to endorse the need for either a legislatively or OMB mandated value engineering program, beyond the requirement that VE be utilized where appropriate. While I recognize and am sympathetic to the need to encourage proper value engineering practices, I am also cognizant of the need to avoid any further encumbering of the Procurement process. I am very concerned that the Bill would require that all agencies establish VE studies on 80% of their in-house and contracted construction, administrative, programmatic and grant projects, not just their acquisition budget subject to the Federal Acquisition Regulation.

The Department of Defense, the Department of Transportation and other major procurement and construction agencies have developed internal value engineering regulations. These regulations are tailored to their respective programs and procedures. As developers and promulgators of Government-wide procurement policy, our job is to ensure that appropriate Government-wide guidance and direction is provided. However, Government-wide policy must, at the same time, permit the tailoring of implementing procedures to ensure that the agencies and departments have sufficient flexibility to apply the policies in an intelligent, cost effective manner. I believe our present approach, as contained in Part 48 of the FAR, provides adequate central direction.

OMB CIRCULAR NO. A-131

As you know, four years ago, OMB issued OMB Circular No. A-131, entitled "Value Engineering," in January, 1988. That Circular was intended to increase the use of Value Engineering on a Government-wide basis. In my view, that Circular has been very effective. Before the Circular, the debate over VE was whether or not it applied at all. Today, agencies work on the assumption that VE applies to most construction projects, and the debate has shifted to where else, beyond construction does VE apply. That represents a significant improvement, and, as time goes on, we will see increased use of VE.

Nevertheless, OMB recently revised Circular A-131 to further strengthen and clarify the provisions of that Circular. OMB thought this issue was important enough that it elevated the revision effort to the President's Council on Management Improvement (PCMI). The PCMI, which is chaired by the Deputy Director for Management of OMB and consists of Senior officials (usually the Assistant Secretary for Administration) from the civilian agencies, established a working group to review the OMB Circular and to recommend revisions to the full PCMI. The full PCMI held a number of meetings on the working groups recommendations and, at the end of the process, the full PCMI provided OMB with a revised draft of Circular A-131. On September 10, 1992, OMB published a proposed revision of the

Circular in the Federal Register. The PCMI's involvement in this effort was very important. Since the PCMI membership consists of Senior-level officials from all the major agencies, discussion of VE in this forum will only help to increase the use of VE, and it will ensure a truly Government-wide approach to VE. Perhaps more importantly, by agreeing to the policies in the revised Circular, through their respective representatives to the PCMI, the agencies have made high-level commitments to the application of VE. The revised Circular was, in fact signed by OMB Director Panetta on May 21, 1993 and published, in its entirety, in the Federal Register on June 14, 1993. With this revised Circular, and the senior-level commitment of the agencies through their representation on the PCMI, we believe that agencies will implement VE more frequently than in the past. Through this process, senior agency officials have developed a greater understanding of the appropriateness of VE to more applications, and they have made a commitment to pursue those applications of VE.

H.R. 133, the "Systematic Application of Value Engineering Act"

As I've already stated, I want to emphasize at the outset that I share with you an appreciation of value engineering as a useful technique for identifying better ways of doing things, and for getting greater value for the taxpayer. I do believe it has been successful in federal procurement, when applied appropriately.

However, I believe it is not appropriate to mandate the use of a single cost cutting technique by agencies, whether by OMB Circular, or by legislation. The reason for Circular A-131's success in the past is because it has allowed the agencies flexibility in deciding which projects were appropriate for the application of value engineering techniques. The revised Circular continues this approach by linking VE in relationship to other management improvement processes such as TQM, life cycle costing, reengineering, systems analysis, etc. This gives agencies the flexibility to select the tool that is best suited for the particular job. The Administration would not endorse either a legislative or OMB mandated Value Engineering (VE) program, beyond the guidance that agencies apply VE where appropriate. With regard to the Bill's specifics, there are parts of the H.R. 133 that raise particular concerns from an Administration position. Specifically,

- H.R. 133 requires each agency to apply VE to 80 percent of its budget. The Administration could not support any approach based upon the percentage of an agency's budget. The applicability of VE is project specific. The Administration would not support requiring agencies to determine what percent of their budget would benefit from VE. This should remain an agency-specific discretion that should be left to management judgement.

- H.R. 133 would establish a new organization with responsibility for advocating VE. This runs counter to the

efforts that are being pursued under Government-wide efforts to streamline the Government bureaucracy, especially the acquisition management structure, and to reduce the number of single-interest program advocates. Additionally, the Bill sets forth qualification criteria for agency VE advocates. I do not believe we should force particular cost-cutting techniques on agency managers. We need to make sure they are aware of VE and various other analytical processes for cutting cost, and give them the flexibility for choosing the appropriate technique.

- o H.R. 133 would require states and localities to conduct VE reviews, as a condition of obtaining a grant. The practice of attaching conditions to Federal grants that are not directly related to the purpose of the grant is contrary to long standing Federal policies governing the relationship between the Federal Government and State and Local Governments. Consequently, the Administration is concerned about this provision.

- o With regard to annual reporting requirements, H.R. 133 goes well beyond the scope of the reporting requirements contained in the revised Circular.
  - Agencies should have a good estimate for the potential return on investment from applying VE to a specific

project; however, it would serve no useful purpose for agencies to report that projection to OMB.

- Agencies should report the real dollar value of savings achieved through VE, but reporting of agency return on investments from VE has not been useful in the past. OMB Circular A-94 sets forth guidelines for agencies to assess the appropriateness of Government investment. Specifically, such investments should have a positive net present value using an appropriate discount rate. We would certainly support efforts to ensure that VE investment decisions comply with OMB Circular A-94. However, to the extent that the VE process includes the evaluation of in-house alternatives or comparisons with private sector alternatives, OMB Circular A-76 must apply. Procedures must established for the determination of how fringe benefits, depreciation requirements, capital costs, contract administration, and Federal tax impacts are to be included.

- The Bill requires agencies to submit to OMB the documentation in support of any waivers granted by the agencies from VE. This requirement would be more appropriately decentralized to senior agency management.

Codification of OMB Circular No. A-131

In your letter of invitation, you indicated that the subcommittee may consider an amendment offered in substitution of H.R. 133 codifying OMB Circular A-131. I could not comment on that specific approach without first reviewing, and seeking other officials' views on, the actual text of the amendment. In general, OMB opposes the codification of OMB Circulars, because codification would deprive them of necessary flexibility.

H.R. 2014, VE Better Transportation Act of 1993.

This Bill would provide an increased Federal share for projects which have a cost of $2,000,000 or more and to which value engineering is applied and results in certain minimum project cost savings (i.e. 5%). It applies to both contracts and grants. Where the minimum 5% savings is confirmed, the Federal share "payable on account of the project" would be increased by 5% of the project cost (10% for savings of 15% or more).
OMB supports the generalconcept of incentivizing VE efforts on government programs. However, there are some concerns regarding the specifics of H.R. 2014. The Federal Transit Administration already requires VE on capital investment projects of $100 million or more. It will be necessary to evaluate the administrative burden on limited staffs to evaluate a major

increase in VE proposals without further evaluation of potential savings for this category of projects, particularly in the current environment of pending significant cuts in government staffs. Therefor, we respectfully request time to give this Bill further analysis and provide additional evaluation for the record as soon as possible.

This concludes my statement, and I would be happy to answer any questions you may have.

Mrs. COLLINS. Thank you. Let me begin by asking, do you think value engineering works?

Mr. KELMAN. I think where appropriately applied, it certainly can work, Ma'am, and does work.

Mrs. COLLINS. And does work. Now, you said there was a reluctance to endorse. Why is there such a strong reluctance to endorse?

Mr. KELMAN. You mean to endorse mandates?

Mrs. COLLINS. Yes.

Mr. KELMAN. I think the feeling is—and here, if I may, I'll speak partly as an administration spokesman and partly as a professor of management.

There are thousands, hundreds of thousands of individual government contracts out there. For some of these, value engineering is appropriate, for others it's not appropriate.

I think it's really inappropriate micromanagement for any central body, whether it be OMB or whether it be the Congress, to come in sort of with a sledgehammer and micromanage all those tens, hundreds of thousands of individual contracts.

Mrs. COLLINS. Would you suggest that perhaps if there was a mandate of contracts over X amount of dollars, that might be a way to go about this?

Mr. KELMAN. Respectfully, Ma'am, what I would say, even there, there would be many contracts over X amount of dollars that—where value engineering is unlikely to return the cost savings that justify the expenses.

Mrs. COLLINS. How do you know if you haven't tried it?

Mr. COLEMAN. Can I add something, Madam Chairman?

Mrs. COLLINS. No, I want my question answered. How do you know if you haven't tried it?

Mr. KELMAN. How do we know—well, we do try it——

Mrs. COLLINS. Have you tried——

Mr. KELMAN. I'm sorry, Ma'am?

Mrs. COLLINS. In what instances have you tried value engineering?

Mr. KELMAN. The government is using value engineering in a number of agencies. DOD reports value engineering savings of over $1 billion for fiscal year 1993 in their recent report to the Office of Management and Budget.

Mrs. COLLINS. Are they in full compliance with the circular?

Mr. KELMAN. It's—I think the——

Mrs. COLLINS. No. The question is, are they in full compliance with Circular A–131, as revised?

Mr. KELMAN. They are showing very significant savings from value engineering. It is impossible to tell whether they're in full compliance for the reason that I believe legislation or central mandate is not appropriate here.

There are so many contracts, we would have to have thousands of police going——

Mrs. COLLINS. So if they're complying 1 percent of the time, it's OK, as long as there is some compliance. Is that right?

Mr. KELMAN. No, I didn't—I don't know, nobody knows whether it's 1 percent. I think $1 billion is a large saving.

Mrs. COLLINS. But wouldn't somebody need to know that, whether or not they're complying? Let's say, if they come up and say, "I

saved a million dollars," and they're spending 20 times that amount, wouldn't that be a cause to wonder whether they are in full compliance or 10 percent compliance or 50 percent compliance or 75 percent or what have you?

Mr. KELMAN. I understand your——

Mrs. COLLINS. The money sounds great, but when you compare it to the vast sums of money that they've spent, I think we need to know those kinds of figures.

Mr. KELMAN. OK, Ma'am, what I—I'm sorry, I may not have spoken clearly enough. Their savings are $1 billion, not $1 million. DOD is reporting $1 billion on the DOD budget is——

Mrs. COLLINS. OK, $1 billion of how much is their overall budget that's been saved?

Mr. KELMAN. Well, I'll have to get you that exact figure for the record. I believe their hardware budget is about $45 billion, but let me correct that for the record if my figures are incorrect.

I mean I think the problem with finding out whether they are, as you put it, in full compliance is that we would need a large number of police to inspect every contract to find out whether they're in full compliance. It is just that kind of huge inspection structure in this very decentralized world of Federal procurement that would create this whole brandnew compliance bureaucracy to see whether people are complying with value engineering. I think that's the dilemma and the problem with these kinds of central mandates.

Mrs. COLLINS. Do you support the Department of Defense position of trying to apply—what is this that you said here, increased use where appropriate?

Mr. KELMAN. Yes.

Mrs. COLLINS. Who determines where it's appropriate?

Mr. KELMAN. Well, the Federal Acquisition Regulation states that in every contract over $100,000, there needs to be a contract clause talking about value engineering and inviting——

Mrs. COLLINS. So there is a number, $100,000, and then they need to look at value engineering, is that right?

Mr. KELMAN. Well, they need to invite the contractor to submit where appropriate value engineering change proposals to the government, where the contractor takes the initiative, and the contractor shares in the savings. So the incentive for the contractor is that they will get the savings, or half of the savings realized from those change proposals, so we introduce an incentive structure.

But that's self-enforcing, in a sense. Every contract over $100,000, according to Federal Acquisition Regulation, requires a clause in the contract saying, "Gee, be on the lookout for value engineering opportunities, and please submit where appropriate value engineering change proposals to the government."

Mrs. COLLINS. How many agencies right now include value engineering provisions as stated in the FAR in their contracts?

Mr. KELMAN. We believe that, to our knowledge, all agencies do so, except——

Mrs. COLLINS. Including Department of Defense?

Mr. KELMAN. I believe that's correct, ma'am, yes. The Department of Defense includes it in their contracts. If that turns out to

be incorrect, I'll get back to you for the record, but they are required to by the Federal Acquisition Regulation.

Mrs. COLLINS. Well, I was under the impression that they use the Department of Energy acquisition regulations, which are pretty silent on——

Mr. KELMAN. OK. I think what your question refers to, ma'am, is that—not within the Department of Defense, but within the Department of Energy——

Mrs. COLLINS. OK.

Mr. KELMAN [continuing]. Many of the Department of Energy's contracts are what are called management and operating contracts for some of the national labs, like Sendia and Oak Ridge and so forth. Those national lab contracts are not subject to the Federal Acquisition Regulation. They are subject to the Department of Energy's own regulations.

The Federal Acquisition Regulation normally applies governmentwide, and it applies to the Department of Defense, and it has this clause in it about value engineering change proposals. It applies to DOE. It just doesn't apply to management and operations contracts.

Mrs. COLLINS. OK, I'll think on that one for a minute.

Mr. KELMAN. I'm sorry, I apologize. I didn't hear you.

Mrs. COLLINS. No, I said I had to think about that for just a minute.

Mr. KELMAN. OK, fine, please.

Mrs. COLLINS. OK, well, we obviously aren't achieving full compliance with Circular A–131, are we?

Mr. KELMAN. We are—again, to know the answer to that question is to answer—or the fact that we don't know the answer to that question is why we feel this kind of mandate approach doesn't make sense, because to find the answer to that question, we would have to have a whole value engineering police force looking at all these contracts at a time when we're downsizing——

Mrs. COLLINS. So your answer is no. Is your answer no?

Mr. KELMAN. My answer is, we don't know.

Mrs. COLLINS. You don't know.

Mr. KELMAN. We do not know, and the reason we——

Mrs. COLLINS. And you're not likely to try to find out?

Mr. KELMAN. If you want, in a context of 252,000 Federal workers being downsized, to give us the resources to find out, we will obey Congress's desire.

Mrs. COLLINS. Come on. I mean, this is a lot of baloney now. I'm very serious about this.

Mr. KELMAN. Ma'am, I——

Mrs. COLLINS. It seems to me that inasmuch as the record of savings for value engineering has been proven time and again, that the General Accounting Office had said we ought to have it, that everybody who has had any kind of experience with value engineering knows that it works, including yourself.

Mr. KELMAN. Mm-hmm.

Mrs. COLLINS. It would seem to me that we wouldn't talk around the issue. The issue is whether or not—do you think it's possible to achieve something close to compliance on Circular 131.

Mr. KELMAN. We think that the use of value engineering within the Federal Government is already increasing, No. 1. We certainly believe that—what we don't know is whether—we use the word, "where appropriate." For us to—I'm trying to answer the question in the most honest and straightforward way I know how.

The circular says, "Use value engineering where appropriate." For us to know whether, in every individual situation, it was used where it was appropriate would mean we would have to look and do a reexamination of each contract. That is a bureaucratic nightmare.

Without that, I—I don't want to come before you, ma'am, and make a promise that I can't keep, that I can find out whether in every appropriate situation it's being used. I mean, that would require to review each of these contracts. How—I mean, that's a huge bureaucratic undertaking.

I agree with you that——

Mrs. COLLINS. Could you for any future contracts?

Mr. KELMAN. For the government, there are—over $100,000 a year, there are—how many contract actions?

Mr. COLEMAN. 400,000.

Mr. KELMAN. About 400,000 new contract actions a year, 400,000 over——

Mrs. COLLINS. Could you do a cursory examination?

Mr. KELMAN. Of the 400,000 contracts?

Mrs. COLLINS. A survey, a percentage evaluation of all those contracts. We do it all the time in accounting.

Mr. KELMAN. That's the information—we get that information in the annual reports under the new circular the agencies are required to submit. They're required to submit information about their overall savings, the numbers of projects that have been accepted and so forth. So under the revised——

Mrs. COLLINS. How do you verify those savings, or the findings?

Mr. KELMAN. The OMB circular requests that the agency IGs every 2 years, or starting 2 years from the circular, do some sort of audit, either a spot audit or whatever, within those agencies about verifying whether the savings that are claimed have actually been done and doing some sort of spot check of the type that I think you're suggesting in terms of a survey of whether value engineering is being used on appropriate contracts.

So the OMB circular directs the IGS—I guess the first one would be in 1995, because the circular came out July of last year—to do, at an agency level within each agency, a spot survey of the kind that you're suggesting.

Mrs. COLLINS. What carrot or stick do the agency IGs have to enforce compliance with the circular?

Mr. KELMAN. Well, they've been directed by the circular to do these audits.

Mrs. COLLINS. And if they find the audits haven't been done, what happens?

Mr. KELMAN. Well, they are—I'm sorry, ma'am. They are to do them themselves. The IGS are to do the audits themselves.

Mrs. COLLINS. The IGs do the audit themselves.

Mr. KELMAN. Yes.

Mrs. COLLINS. Well, if you find there's no compliance, what do you do then?

Mr. KELMAN. You mean in 1995, if the IGs come up with reports? Speaking for myself, I would say that the initial way these things would need to be dealt with would be at an agency level. We have a very decentralized procurement process. IGs have more people within the agencies and more people working on things such as this than a central management organization, such as OMB.

I think that—again, we are not finding that people are not doing value engineering out there. We're finding that the use of value engineering is increasing, it has increased since 1988, when the first OMB circular was issued. We think that other kinds of management improvement efforts, such as total quality management and business process reengineering are also being used.

Probably the best incentive for agencies to try to do these things is the very tight budget discipline that's being imposed on them in terms of their discretionary spending and the needs for cost savings that that brings about.

Mrs. COLLINS. My final question for the moment is, without the ability to compel the agencies to carry out your recommendations, how can you be sure that the full potential of the value engineering benefits are actually being achieved?

Mr. KELMAN. Again, I understand and support, I think, what I guess is the frustration on your part that is leading to that question. I think I know where you're coming from. And the dilemma—and, again, let me move to my professor of public management hat if I could for a moment. The dilemma is, with a very, very decentralized process, with hundreds of thousands of procurement actions, some of which are appropriate for value engineering, some of which are not appropriate, some of which are appropriate for other cost savings techniques and so forth, to use a sledgehammer approach of us centrally, whether it be OMB or whether it be the Congress, just sort of a mandate, "You have to do it," I think it will lead—my judgment as a professor of public management as well as in this case as spokesman for the administration—will lead to two problems.

One, is inappropriate bureaucratic value engineering studies where they are not appropriate and where they will not lead to savings; and a lot of paper compliance that will end up probably on balance costing the government more than it saves.

So our dilemma—and I understand where you're coming from—is, how do we encourage it where it's appropriate while not requiring where it's not appropriate? And it is a very tough dilemma for those of us, whether they be in OMB or whether they be you in the Congress, from our central positions, because this process is so decentralized, the procurement process is so decentralized.

And I'm not sure—and, again, I understand your frustration. I wish we could make sure it was used every place where it's appropriate without a sort of a sledgehammer approach. I just—I feel that we don't have any alternative to—any practical alternative to the alternative we're already doing, which is—we have a senior management official who needs to be responsible for this in each of the agencies. We've asked the agency IGs to do audits every 2

years. We're asking for a report to OMB on value engineering savings.

We just can't go in and micromanage every contract from the government. It's—I understand your frustration, ma'am, and——

Mrs. COLLINS. Well, I appreciate that, Professor Kelman, but I'm going to move on now to Mr. McCandless.

Mr. KELMAN. Fine, OK. Thank you, ma'am.

Mr. MCCANDLESS. Thank you, Madam Chairman. Mr. Kelman, I'm left with the impression here, or one could be, if they were in the audience, that this Circular A–131, if I have the right chronology, is a mandatory activity. It's my understanding it's voluntary, isn't that right?

Mr. KELMAN. It is mandatory—there are features that are mandatory and features that are voluntary or where appropriate. What is mandatory, sir, is that agencies need to—under the new circular that was issued last July, agencies need to designate a senior management official who is responsible for value engineering, No. 1.

They need to submit an annual report to OMB discussing value engineering savings, the number of proposals received, and so forth.

In addition to that, we have a mandatory requirement in the Federal Acquisition Regulation for contracts over $100,000 that states to contractors, the people who are doing business with us, that, "We encourage you to submit value engineering change proposals, and if you do, we'll share the savings with you."

What is not mandatory is a statement, "You have to do it on every project, or 80 percent of the projects." What we say is, "Value engineering should be used where appropriate."

Mr. MCCANDLESS. All right, now, we've talked about the second OMB circular and the value of value engineering, and we have an original circular. What are the differences between these two?

Mr. KELMAN. The differences are in some of the areas I just outlined, sir, that we have introduced the new—it's new that we require a senior management official to be responsible for value engineering, and it's new that we require annual reports into OMB.

Mr. MCCANDLESS. All right. In your opinion, does the revised circular help facilitate and encourage the use of value engineering among agencies?

Mr. KELMAN. Yes, it does, in my opinion.

Mr. MCCANDLESS. Yes?

Mr. KELMAN. Yes, sir.

Mr. MCCANDLESS. In what respect?

Mr. KELMAN. I think by raising the visibility of value engineering by requiring agencies to report on what kinds of successes they've achieved through value engineering annually to OMB. I think it is another step to move us along the goal that I know Congresswoman Collins and you and other members of the committee share to encourage appropriate cost savings through value engineering and other management cost saving techniques.

Mr. MCCANDLESS. A couple years ago the GAO before this subcommittee said, "A value engineering review can be expensive, and will not always recover its costs." How would you comment on that, and would you say that the cost to implement value engineering sometimes outweighs its value?

Mr. KELMAN. The administration agrees with the testimony that GAO made before this subcommittee several years ago, where they essentially agreed with the administration's position that this not be mandated. And it's for the reason that you just stated and GAO just stated.

Value engineering, just like other management tools, is not appropriate to every situation. It's not one size fits all. If we started saying you have to do it on every contract, there would be many contracts, in my judgment, where the expenses for doing the value engineering study would not be recovered in cost savings.

Mr. MCCANDLESS. I'm going to digress just a minute here, because I think we're talking about something very basic in the Federal Government. I came from the private sector. Between this office and that I spent 12 years' doing very intensive work at the county level in California, which is operated by five members, and so public management is not a new, strange, different thing to me.

And my observation is—and I'd like you to comment on this for the value of the record, whatever that might be—that we could put anything you might wish to put into the system of management at the Federal level, particularly here in Washington, but that that activity or program is going to be only as good as the people who implement it.

Now, that brings the real key to the foundation. And that is, when you have the degree that you do of appointed levels at various functions, from the top through the first two, three, possibly four grades——

Mr. KELMAN. Here I am an example of that.

Mr. MCCANDLESS [continuing]. And these people are human and they have various levels of interest, various levels of desires, various levels of initiative, and so on and so forth, but that the structure of the civil servant is always there.

And if there is a program or an initiative on the part of the appointed official to want to try to improve, to want to try to change to any degree a ho-hum shop, for purposes of our discussion, in more cases than one would like to see there is a resistance, irrespective of how well-founded the program that this appointed person wishes to implement.

And on that basis then there is a stalling, a foot dragging, and so forth because the thought process is, "Well, he'll only be here for a while, and then he'll be gone. Then we can go on with our business the way we want to do it."

Somebody told me the other day—and I don't know how true this is—that the average appointee's lifespan in Washington, DC, is 8 months.

Mr. KELMAN. I think it's about 18, actually, but—just missing a 1, but close enough.

Mr. MCCANDLESS. Eighteen months?

Mr. KELMAN. Yeah, about that.

Mr. MCCANDLESS. So we could install this, we could install management by objectives and pick anything else you want off the shelf in terms of personnel management policies and objectives, but we're not really going to get anywhere until we do some major restructuring of our system, particularly in the executive branch.

How would you comment on that?

Mr. KELMAN. I think that's a—if I don't watch out, I'll be a professor and give you a whole lecture on it, so I'll try to avoid that if I could, or I'll do my best, but——

Mr. MCCANDLESS. Don't give us the lecture.

Mr. KELMAN. Yeah, let me see if I can——

Mr. MCCANDLESS. We need the Reader's Digest condensed version.

Mr. KELMAN. Let me give you the executive summary. I think that you're absolutely right, and that this is why all of us—whether, again, they be in sort of senior political positions or you, as elected officials—can get very easily frustrated.

I think that the—I guess I would say that if we are going to improve the management of the Federal Government, that, in the final analysis, is going to have to come—and this is the view of the National Performance Review—is going to have to come from mobilizing energy and a desire to serve on the part of those career folks who are out there.

And I guess one thing I would say, and if I might make the observation to the subcommittee, is that if you talk to the career people, one of the things that they will always tell you or often tell you about why they don't want to change and why they're hesitant to take risks and so forth is, they're afraid that if they do try to change, and they make a mistake, you folks here on the Hill are going to, you know, rap their knuckles and come down very hard on them and sort of—and just make them—sort of punish them. And, therefore, they withdraw into their shells and just say, "I'm just going to do things the old way."

It seems to me—I'm just thinking of this right now, because I—I'm trying, and I hope I'm coming across as being constructive because I'm trying to be constructive—I think that one thing that this subcommittee could do to promote—to really promote value engineering is, why don't you bring before this committee some people in the agencies, career people—forget us politicos—bring in some career people who have made this work and praise them and celebrate them for the money they've saved taxpayers and for their energy and commitment.

And let's get that out in Mike Causey's column or on the Federal Page of the Washington Post. Let's see career people get some credit from you as elected officials for the success stories, for the people who have tried hard in their agencies to make value engineering work and who saved the government money.

That message will get out very fast and we do have to find some method. I absolutely agree with you to—we're only here, and I hope I'll be here for a little more than 18 months, but we're not here forever. With the turnover on your side, you guys aren't here forever any more, fortunately or unfortunately.

And if we're going to make the Federal Government manage better it has to come from the career folks and we have to find ways to energize and give them incentives.

Mr. MCCANDLESS. Thank you. Thank you, Madam Chairman.

Mrs. COLLINS. I now recognize Congresswoman Byrne for any comments she may have.

Mrs. BYRNE. Professor, when you talked about recognizing the career folks, if indeed we have a hearing and we have success sto-

ries and we trot them up here and they all tell us that they're saving anywhere from 10 to 17 percent on anything that they value engineer, will this administration remove its reluctance to use it?

Mr. KELMAN. Ma'am, we are not reluctant to use it, we're reluctant for a mandate that says just, "Agencies have to use it in every case."

Mrs. BYRNE. Well, you had used the term "appropriate," and "inappropriate," and I guess the Chairwoman had hit upon this a little earlier, when is—can you give me some examples of when value engineering is inappropriate?

Mr. KELMAN. I wouldn't try to micromanage that, you know, that judgment, so it would probably not be appropriate for me to give, you know, to give specific examples. But I—let me maybe put in some comments for the record, because I don't think it's appropriate for me as a central Office of Federal Policy Administrator to be suggesting when something is appropriate and inappropriate.

I mean, that is a function that is much more appropriately decentralized. And I have some ideas off the top of my head, but I hope you'll appreciate, I don't want to put my foot in my mouth. So let me get back on the record if I may, on that.

Mrs. BYRNE. Let me just close because I don't want to take up too much more time, but let me just close with my observation of what I went through in the Commonwealth of Virginia, 6 million people, a fairly large bureaucracy, is that they told me that they were already using VE, they weren't. They told me that it would be a bureaucratic nightmare, that we'd have to have all these compliance police, they don't. They told me that there would be situations where it would cost more money to use it than they would save, they didn't.

And I guess my reaction is, that I have heard your comments about 3 years ago, only it was in Virginia by other folks in the bureaucracy. And the reluctance I find on the part of the bureaucrats, of the career people, to use it right now is they feel that if they use it they're being singled out to use it, that we only use it sometimes, and there is something wrong with what you did in the first place if it's used.

So by mandating we're taking away the onus from using value engineering, because it's used for everybody. We're not singling out one department. We're not singling out one project or one career person. So by mandating it, we're making sure that everybody is treated the same way and then we take away the foot dragging for using it because they expect it. It's part of the process. And right now it is not, in my opinion, part of the process.

Mr. KELMAN. Mm-hmm. I think your observations are very interesting and trenchant. I guess two things I would point out, one is that as I understood it from your testimony, ma'am, your legislation in Virginia only applied to transportation construction projects, because it didn't apply, you know, throughout the Federal Government for when we're buying furniture and computer hardware and so forth.

I mean, it's in the area where value engineering now in the Federal Government is probably most used. That is to say, in construction.

And I guess I would also ask you, given what you're saying in your—in the bill that you've introduced, you're not requiring it either, you're introducing an incentive approach. And I think it's out of your experience at the State level where you don't want the Feds coming in and sort of pushing, you know, requirements on you and sort of realizing the problems that can create.

I guess I would suggest that in a Federal Government as decentralized and farflung with so many procurement actions as we have here, a similar worry and observation might apply to a Federalwide mandate.

Mrs. BYRNE. I just respond, Professor, that the reason that we took this approach in the Federal Government is that we are worried about unfunded mandates to State government. When it comes to State governments or the Federal Government in its own contracting procedures, it seems to me that we would want to examine the way to get it done efficiently.

And I will tell you that it's been—I would have applied it to much more than transportation if given the opportunity, but I had to start somewhere. So I think that if I were to tell anybody who is interested in government that there is a process out there that is proven to save anywhere from 10 to 17 percent, proven——

Mr. KELMAN. In cases where it's used, as are all these cases where it's not used because its' not appropriate and where it wouldn't save 10 to 17 percent.

Mrs. BYRNE. That's right. It just went around full circle, because, we don't know where it's appropriate. We're guessing where it's appropriate. We're guessing where people are in compliance. So we have the potential to save a tremendous amount of money in the Federal Government, a tremendous amount that helps us meet those mandates of 252,000 people that we're downsizing.

We have a tremendous opportunity here and it seems to me that by saying that we already have it and we're already using it, and in some places it's not appropriate, we're missing the boat. We're missing the boat.

Mrs. COLLINS. Thank you. Dr. Kelman, let me say that we are going to be giving you some followup questions, and we'd like to have some very definitive responses within the 5 working days, so we can get on with our hearing record.

I know that there are some real savings to be earned, if you will, through value engineering, and you say you endorse value engineering where appropriate.

What I would like to do is to sit down with those of you who make these kind of decisions and see if there is something we could work out together, because we are, at this point in time, just doing a sort of overview of what has happened with the intent, perhaps of—with the strong intent of creating some kind of legislation.

But I would like to have us work together before we put anything in stone, if you will. I thank you for appearing before us.

Mr. KELMAN. Thank you, ma'am.

Mrs. COLLINS. Unfortunately I have to go to another meeting, and am now going to pass the gavel to Mr. Peterson, who is the chairman of the Employment, Housing, and Aviation Subcommittee on Government Operations. Mr. Peterson, is of course, a Member from Minnesota. I will return.

Mr. PETERSON [presiding]. In the interest of time, we're going to call panel 2 and 3 up together. We have with us today Mr. Stanley Brezenoff, executive director of the Port Authority of New York and New Jersey. He's accompanied by Mr. William Goldstein, the executive director of Capital Programs.

We have Mr. James Rains, certified value specialist, for the North American Operations of General Motors Technical Center, Warren, MI. Mr. Rains's precepts of value engineering are being used creatively by the Germans and Koreans, as well as by the Japanese auto and steel industry to reduce cost and approve productivity in both public and private sectors.

And Mr. Wesley Querns, engineer for the Eastman Kodak Co. Mr. Querns is manager of multiple capital improvement project, purchasing and destruction. And we'd also like to call Dr. Varadarajan, chairman on the Council of Federal Procurement of Architectural and Engineering Service.

And Mr. Larry Zimmerman, who is no stranger to this subcommittee as president of the Society of American Value Engineers. He has been in the field almost 20 years. And Mr. Jean-Paul Prentice, government liaison committee, Association of Total Cost Management, testifying on behalf of Michael Horowitz.

And so we welcome you all to the committee. Unable to appear is Ms. Jill Woller, deputy chief engineer of the Office of Management and Budget of the city of New York.

Her statement, without objection, will be included in the record, as will all of your statements.

If you want to summarize—in fact, we would appreciate it if you could summarize so we can wrap this up as soon as possible. We will start with Mr. Brezenoff.

Mr. BREZENOFF. Yes, that's right.

Mr. PETERSON. Welcome to the committee.

STATEMENT OF STANLEY BREZENOFF, EXECUTIVE DIRECTOR, PORT AUTHORITY OF NEW YORK AND NEW JERSEY, ACCOMPANIED BY WILLIAM GOLDSTEIN, EXECUTIVE DIRECTOR, CAPITAL PROGRAMS

Mr. BREZENOFF. Thank you, Mr. Chair. I will—with me today is Bill Goldstein, the deputy executive director for capital programs at the Port Authority. I will summarize our testimony.

Let me say that we appreciate the opportunity to share our experience with a very powerful tool for more effective public service through better management of public works. And we support the committee's interest in widening Federal use of value engineering.

In our agency, we've expanded the VE concept into a value management philosophy and I want to focus on four points today. That the best value comes from reexamining the project purpose concept and functions and not just the design. That bringing in a range of expertise from outside the organization makes the process much more effective.

A central part of the process is evaluating risks associated with the project and finding ways to reduce those risks and that value management is not just about saving money, it's also about getting the best possible project. With that said, let me emphasize that

when you do it right, it saves money in construction, operation, and life cycle maintenance costs.

Our value management is a three-step process. It looks at a project at key points in its development. It begins at the conceptual level of project planning by examining the basic assumptions underlying a proposed capital investment. In this first step, which we call value planning, we look at goals and objectives to be sure that a project represents the best response and the right timing. We find that this kind of conceptual review early on is the best point in the process to grasp opportunities and identify pitfalls inherent in most major public works.

Our next close up examination takes place after the project has passed this conceptual muster. And that's when we conduct a value engineering analysis which produces refinements in design, construction phasing, integration with operating needs, and other factors. And it also seeks to mitigate the risks associated with the project.

Let me say that both our value planning and value engineering results go to our board of commissioners, so that our governing board hears the outcome of these processes before authorizing detailed planning for sizable projects and again, before authorizing overall project costs.

Last point is, we also look at projects and groups of projects during construction and after completion to see what has gone right and what has gone wrong. This project program management review, because it comes late in the life cycle of the project, tends to have relatively smaller effects on cost but they can have a significant impact on the way we manage specific types of projects in the future.

A major step in the evolution of our thinking about these reviews is when we added outside expertise, because it aids the process enormously. The basic methodology is group interaction for functional analysis and while in the beginning we used our own staff, ad hoc teams, drawing upon a pretty vast range of skills, we have refined and strengthened the program by recruiting teams of outside experts. We have worked with about 220 outside experts, we have a data base of well over 300 such individuals which enable us to assemble a range of people with the right mix of professional backgrounds and training and so on.

In closing, I want to emphasize that our goal in value management is not simply saving money, it's also a search for the best possible project, for the course of action that offers the most value. With that said, we have identified significant savings through value management.

In 1992 alone, among other savings, we cut $3 million from an anticipated $10 million cost of a police facility at John F. Kennedy International Airport. We identified another $10 million in savings on a $110 million international terminal at Newark Airport.

But the overall figures are even more impressive. During the first year of the program, 1992, we identified some 6 percent of potential savings on almost $1 billion worth of projects we analyzed. The following year, 1993, we found potential savings of more than 20 percent on projects that also totaled roughly $1 billion.

[The prepared statement of Mr. Brezenoff follows:]

TESTIMONY OF STANLEY BREZENOFF, EXECUTIVE DIRECTOR
THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY
REGARDING H.R. 133, H.R. 2014, AND "VALUE ENGINEERING"

BEFORE THE LEGISLATION AND NATIONAL SECURITY SUBCOMMITTEE
OF THE COMMITTEE ON GOVERNMENT OPERATIONS
U.S. HOUSE OF REPRESENTATIVES

MARCH 8, 1994
WASHINGTON, D.C.

Good morning, Mr. Chairman, and members of the Subcommittee. My name is Stanley Brezenoff and I am the Executive Director of the Port Authority of New York and New Jersey. With me today is William H. Goldstein, our Deputy Executive Director for Capital Programs. Thank you for the opportunity to share our experience with a powerful tool for delivering more effective public service through better management of our public works.

We at the Port Authority of New York and New Jersey welcome this committee's aim to widen federal use of value engineering. In our agency, we have expanded the V.E. concept right up into our Board Room, where a "value management" philosophy now prevails. We've also brought value engineering back to a much earlier point in the process of planning new investments. You may wish to

consider building this broader dimension into your own initiative. It's working for us across a wide range of projects and issues.

I'll focus on four points today:

* The best value comes from re-examining the project purpose, concept, and functions, not just the design, using a "Total Quality Management" approach;
* Bringing in a range of expertise from outside the organization makes the process much more effective;
* A central part of the process is evaluating risks associated with a project and finding ways to reduce those risks; and
* Value management is not just about saving money -- it's also about getting the best possible project. But that said, let me emphasize that when you do it right, it almost always saves money in construction, operation, or life cycle costs. It can even increase revenues.

Port Authority Background

For those of you who don't know us, the Port Authority is an agency chartered by New York and New Jersey to support trade and commerce in the metropolitan area. Created in 1921, it was part of another generation's push to "reinvent government," with a groundbreaking bistate compact ratified by the Congress.

Our portfolio includes bridges, tunnels, transit facilities, three major airports, marine terminals, industrial parks, a resource recovery plant, and the World Trade Center, among others. These are among the busiest facilities of their kind in America. Directly and indirectly, they support more than 440,000 jobs.

We earn our own budget with user fees, commercial rentals, and other income, and we pool our revenues to support long term bonds for capital investment. We have about $3.8 billion in capital spending programmed through 1998, not including billions more in private equity investments at our airports and elsewhere.

We manage one of the largest and most diverse public works programs in the nation.

Like other agencies, we have had our share of setbacks on capital projects in recent years. What we learned, at some cost and sometimes embarrassment, is that the biggest problems often arise not from flawed engineering, but from external factors that could have been better anticipated. These include market demand, revenue forecasts, patron and tenant expectations, and environmental issues.

Value Management: More than Value Engineering

Value management is a three-step process that looks at a project at key points in its development. It begins at the conceptual level of project planning by examining the basic assumptions underlying a proposed capital investment. In this first step, which we call Value Planning, we look at goals and objectives, to be sure that a project is needed and that it represents the best response and the right timing. That kind of conceptual review, early on, is the best point in the process to grasp the pitfalls -- and the opportunities -- inherent in most major public works projects.

Our next close-up examination takes place after a project has passed muster conceptually. This is when we conduct a Value Engineering analysis, which produces refinements in design, construction phasing, integration with operating needs, and other factors. It also seeks to mitigate the risks associated with the project. Let me note here that value engineering review savings,

though important, have a less profound impact on the overall project than those generated at the value planning stage.

Value planning and value engineering bring the further benefit of raising the discussion to the policy level. Our governing Board of Commissioners hears the outcome of value planning and value engineering assessments before authorizing detailed planning for sizable projects, and again before authorizing overall project costs.

We also look at projects and groups of projects during construction and after completion, to see what has gone right and what has gone wrong. At the Port Authority, we call that third step our Project/Program Management Review. Because the results of project reviews come late in the life cycle of the project, they tend to have relatively smaller effects on cost. But they can have a significant impact on the way we manage specific types of projects in the future.

Outside Experts

A major step in the evolution of our thinking about these reviews came when we realized that outside expertise adds enormously to the process. The basic methodology of value engineering is group interaction for functional analysis, and in the beginning we used ad hoc teams of Port Authority staff, drawing upon the vast range of skills within the agency. We have many talented career professionals.

But since 1992, we have refined and strengthened the program by recruiting teams of outside experts. This adds world-class

expertise, a measure of independence, and a comparative perspective that makes it much less likely that a major flaw -- or good opportunity -- will escape the review process.

Over the last two years, as we have made value management part of our way of doing business, we have worked with about 220 outside experts. We have actually developed a database of well over 300 individuals, which enables us to assemble a range of people with the right academic and professional backgrounds for a given project, as well as the right training, experience, and certifications.

This team of outside experts operates at a professional arm's length throughout the entire process, up to -- and sometimes including -- presentation to our Board. We support this group with Port Authority staff who are familiar with that particular facility and with our policies, procedures, and business requirements for the issue at hand. The Value Team of outside experts is sequestered during key phases of the analysis, but Port Authority resource staff provide them with help when required.

More than Saving Money

I want to emphasize that our goal in value management is not simply saving money; it's also a search for the best possible project -- for the course of action that offers the most value, that anticipates and controls the risks, and that best supports our public service mission. In fact, cost savings can almost be viewed as incidental to value management, whose real aim is excellence. Value management reviews at the Port Authority

sometimes add elements to a project, where we see a chance to get more value for our investment and for the people of New Jersey and New York.

But that said, we have identified significant savings through value management. In 1992 alone, among other savings, we cut $3 million from the anticipated $10 million cost of a police facility at John F. Kennedy International Airport. And we identified another $10 million in savings on the $110 million international terminal at Newark Airport. The overall figures are even more impressive. During the first year of the program, 1992, we identified some 6 percent of potential savings on almost $1 billion of projects we analyzed; the following year, 1993, we found potential savings of more than 20 percent on projects that also totaled roughly $1 billion. Let me close with two brief examples of how the process works to save us money.

Perhaps the best-known example is the recovery of the World Trade Center after the terrorist bombing just over one year ago. We decided early on that, rather than using value management simply to achieve its usual objectives of optimum cost and schedule, we would use it in an unconventional way, to "crash" or accelerate the schedule and come up with technical "workarounds." We did this because we determined that keeping the Trade Center closed had consequential costs of close to $1 million per day; the incremental costs of acceleration were much less. This approach worked extremely well, helping to bring the Twin Towers back on line faster than anyone predicted.

The other example is also from the Trade Center. We brought

together a diverse team of experts -- from investment bankers to architects and engineers -- to help us figure out how to maximize revenues while keeping the Twin Towers a Class A complex for the minimum amount of capital invested. Their answer, interestingly enough, called for redesign and reconstruction of the Trade Center's public spaces. Although we've only just begun to implement their recommendations, it's worth noting that our occupancy rate is already higher than it was before the blast.

Conclusion: Beyond Value Engineering

Mr. Chairman, based on our experience at the Port Authority, I encourage you not only to move ahead with this approach, but to go beyond value engineering to value management. The cost-savings criteria set out in OMB Circular 131 should be augmented with a value management approach.

To use a phrase we've heard a lot in Washington lately, value engineering is as simple and smart as "measuring twice and cutting once." Value management goes a couple of steps further and asks if we're using the right measure, and if we can't find a piece already sized to fit the job.

We're flattered at your interest in how we're applying these ideas to serve the people of New York and New Jersey. I would be pleased to make the Port Authority's staff available to your committee as you shape this important legislation.

Thank you.

# # #

Mr. PETERSON. Thank you very much for—you hit it right on the money there. We have the 5-minute clock on. You must have done this before.

Mr. BREZENOFF. I have.

Mr. PETERSON. Well, we appreciate it very much. Mr. McCandless and I both have to leave at noon, so if you could all keep your remarks to 5 minutes, we'll turn on the timer and then we might have time for a couple questions. Next is Mr. Rains.

STATEMENT OF JAMES A. RAINS, JR., CERTIFIED VALUE SPECIALIST, GENERAL MOTORS, WARREN, MI

Mr. RAINS. Thank you, Mr. Chairman and other members of the committee. Value analysis is synonymous with value engineering, has had widespread use within General Motors. Use of this tool has been a factor over 30 years within GM with very varied levels of success and intensity.

Since there's never been a formal value analysis activity in the corporation, it has been left to the discretion of its individual divisions. One such division Delco Chassis division, headquartered in Dayton, OH, has had a very active value analysis organization since 1979, so this testimony will be focused on that.

The purpose of this testimony is to discuss the use of value engineering in industry, why it is used and how it applied. The opportunity to share this information with this subcommittee is greatly appreciated. And I thank you for inviting me and thank you for listening to this testimony.

Delco Chassis has been around for a long time, incorporated in 1909. It is a worldwide organization with—located with 15 manufacturing facilities in North America and located in 9 countries globally. Cost reduction at Delco Chassis is taken very seriously. It fits extremely well into our total cost reduction scheme that is value analysis. And we currently achieve savings in excess of $200 million per year.

Value analysis is not mandated at Delco Chassis. It is used because management sees it as an effective tool to help them achieve their cost reduction targets. Since no one at Delco is required to use value analysis, the VA group must constantly sell the use of value analysis.

I'd like to expand on this remark. Management edicts and industry don't work because management comes and goes and therefore their edicts and mandates come and go. That is not the same as a Federal law.

We've had a very successful start in value analysis at Delco in 1980, 10 teams in our first workshop were very successful and it kind of paved the way for continuing use of value analysis. And we have used it globally at all our divisions and all our plants.

We have a network within General Motors that allows everyone to share their ideas, concerns. We bring in outside speakers so we address the latest technology of value analysis and we assist and support each other. We have also been very active outside the corporation, promoting value analysis in the community, in the health care industry, in school systems and churches, et cetera.

The use of value analysis methodology at Delco Chassis. We've had many innovations in the methodology primarily, these have

been done to enhance our own performance as practitioners. We take great pride in our diversity in the applications of value analysis. We just don't do it on products and processes. We have used it to enhance our synchronous and our manufacturing abilities.

Just to wrap up, there's a couple of examples in my testimony that I think adequately portray how value analysis can improve your business. If—do you have a copy of this available to you? OK.

The first example is on ABS, it's used on your braking system. We have a very diversified team, and the team had an objective to improve the value of ABS. If you look on—we had a chart there that describes the functions that are used and the parts and we identify a cost or expense of functions which help us to zero in on where we're going to brainstorm, because part of the VA technique its job plan, is to do this, and it helps you to zero in on where you want to do your brainstorming and creativity.

Also part of that package is what we call a FAST diagram, which stands for functional analysis system technique. And you don't—you may have an ABS brake system in your vehicle, but you don't know how it works, but if you look at this FAST diagram and saw the power of verb-noun combinations which we call functions in the value engineering world, you can very easily understand how a brake system, that is very complicated, works.

And that's the key to—one of the keys to value analysis, because it takes a very technical—can take a very technical product or process and allow people to have a common understanding of what that is to generate ideas from.

[The prepared statement of Mr. Rains follows:]

March 3, 1994

Testimony before the Legislation and National Security Subcommittee of the House Committee on Government Operations concerning OMB Circular A-131, H.R. 133 and H.R. 2014. Testimony is to be delivered on March 8th, 1994.

The purpose of this testimony is to discuss the use of Value Engineering in industry; why it is used and how it is applied.

Value Analysis, synonymous with Value Engineering has had widespread use within General Motors. The use of this tool has been in effect for over 30 years with varying levels of success and intensity. Since there has never been a formal Value Analysis organization at the Corporate level, Value Analysis use has been left to the discretion of its individual divisions. One such division, Delco Chassis, headquartered in Dayton, Ohio, has had a very active Value Analysis organization since 1979. In 1991, Delco Chassis was awarded by SAVE the "Excellence in Value Engineering" Award. This prestigious award recognizes companies that use and promote the use of Value Engineering for a minimum of ten years. Therefore the attached testimony is focused on the Value Analysis activity at Delco Chassis.

This testimony is presented by Mr. James A. Rains, Jr. Mr. Rains managed the VA department at Delco from 1985 until his recent reassignment to General Motors North American Operations located at the GM Technical Center in Warren, Michigan. He has been very active in the Society of American Value Engineers since 1987 and is a Certified Value Specialist.

The opportunity to share this information with this subcommittee is greatly appreciated. Mr. Rains hopes that this testimony will assist the subcommittee in making its future decisions. Thank you.

INTRODUCTION

Delco Chassis Division is one of the most diversified in General Motors. Organized in Dayton, Ohio in 1908, by Charles F. Kettering and Edward A. Deeds, as the Dayton Engineering Laboratories Company, it was incorporated in July 22, 1909 with 10 full or part-time employees. Kettering and Deeds intended that Delco be an engineering research company, not a manufacturing company, however that concept changed when they invented the ignition system and the self-starter. By 1912, over 1,200 employees were on the Delco payroll, most employed in manufacturing operations.

Delco Chassis has a long tradition of providing customer satisfaction. At Delco Chassis, we combine quality, technology, price and responsiveness to meet our customer's specifications every time. Delco Chassis is a source-responsible supplier of automotive component systems that are world leaders in customer satisfaction. Our expertise in electronics, hydraulics, mechanics, materials, coupled with our ability to attract and develop outstanding engineering talent, has keyed Delco Chassis emergence as the world's leading producer of brake systems and suspension systems for the auto industry.

Delco Chassis has plants and facilities in nine different countries around the globe, truly making it a global division.

Cost reduction is taken very seriously at Delco Chassis. Value Analysis fits extremely well into the total cost reduction scheme. Delco currently achieves annual cost reduction savings in excess of $200,000,000 per year.

Value Analysis is not mandated at Delco Chassis. VA is used because management sees it as an effective tool which will help them achieve their cost reduction targets. Since no one at Delco is required to use VA, the VA group must constantly "sell" itself and the VA process.

HISTORY OF VALUE ANALYSIS AT DELCO CHASSIS

Delco's first taste of Value Analysis occurred in March, 1963. A group of managers attended a 40 hour workshop conducted by General Motors Institute in Flint, Michigan. They studied a Whirlpool Hermetic Motor and identified $30,000 of potential savings. Actual savings that resulted was never documented. Almost simultaneously at the then Delco Appliance Division (now Delco Chassis - Rochester Operations) a major VA activity lasting approximately two years was conducted. This activity is well documented.

From 1964 to 1979 there is little documentation on the use of VA, however, one gets the feeling that some functional analysis and creativity was used, as Larry Miles intended. In November, 1979, an individual was relocated from Rochester, New York to the Dayton Divisional Headquarters and named Manager of Value Analysis and reported to the Director of Materials Management. At the time, the new appointed manager knew nothing about VA, but rapidly put together a strong foundation that still exists. Delco conducted its first workshop in April, 1980 and was the first of many workshops facilitated by Value Analysis, Inc. It should be noted that every member of Delco's Executive Staff at the time was assigned as a team member in this workshop.

As a result of numerous proposals that were implemented as a result of that first workshop, the ongoing support for VA was easy. There were 10 teams in that workshop. I personally was on one of those teams and our team implemented 8 fairly major design changes to the product that we studied. The first year savings of those proposals, just from this one team, was approximately $500,000.00.

In the fall of 1984, VA was expanded to include Delco's supplier community. This was the first of three workshops which focused on the products that Delco's vendors supply. With active involvement from our Purchasing Department several suppliers were selected to participate in Delco's first preferred supplier VA workshop. Suppliers were invited to participate with all workshop expenses covered by Delco. In this workshop 18 supplier teams used the VA techniques on a product they supply to Delco. Through 1993, 135 different suppliers have participated in our workshops.

In 1983 the VA group was reorganized under the Divisional Industrial Engineering Department. This move was made to increase the strong relationship with the Plant I.E. Department personnel and to assist in project follow-up after the workshops.

On November, 1985, Mr. James Rains became Administrator and later Supervisor of Value Analysis. He held this position with expanded responsibilities until his recent transfer to the North American Operations of General Motors.

December, 1985 was the last of the big workshops conducted by VAI. There were 18 teams in this workshop. What followed is what was called a New VA Approach. This approach was announced to the division on January 3, 1986. The annual cost savings of this new approach took over $100,000 out of the VA budget. There were two major principles in this new approach.

1. The workshops would be facilitated by Delco personnel.

2. The VA group would focus on smaller, but much more frequent workshops that would be conducted at the several locations of Delco Chassis.

In the fall of 1986, although quite by accident, began a very strong relationship between VA and Delco's hourly work force. We have found the hourly work force to be extremely appreciative of the VA job plan. As a direct result of their workshop experience, we have also noticed a very positive effect on their attitudes and job performance. Several articles, many of which are written by hourly people have proven their appreciation to participate in such a meaningful workshop.

The VA Group expanded the use of VA in Delco Chassis in much of 1987. In January, 1987 we facilitated our first workshop in El Paso, Texas for our Mexican border plant, Delmex which is located in Juarez. There were 6 teams in this workshop. Among the participants were 17 Mexican Nationals. This expansion also included Livonia, Michigan. In 1986 a former Chevrolet Plant was realigned to Delco Chassis. The first Delco Chassis workshop conducted for this facility was in March, 1987.

Delco Chassis is a world-wide organization and a plan was developed to take VA to our European Operations in England and Spain. Our first European workshop was conducted in Dunstable, England in March, 1988. The results of that workshop were significant. The strategy for our Spain plant is to utilize other GM personnel already in Spain and trained in VA. This allows for consistent practices within that European country.

Again as a result of another GM reorganization in 1989, much of the Inland Division became part of Delco Chassis. The Divisional VA Group, once again, took on this massive, new client (all segments of the Delco organization are considered clients) with no additional VA headcount.

In 1990 expansion continued again in Europe. De Carbon a joint venture company in France asked for a VA activity. A 45 hour workshop was conducted in October, 1990. A strut that is being planned to sell to Renault was studied. The results of the workshop so far are extremely positive.

DELCO CHASSIS SUPPORT & PROMOTION OF VA WITHIN THE CORPORATION

While Delco Chassis is a Division of General Motors, it needs to be understood that each division is run almost as if it were an autonomous business itself. Delco Chassis is not guaranteed any GM business, and must compete on a world-wide basis in quality, cost, technology and responsiveness to obtain and maintain GM as a customer. Delco's acceptance as a world-wide supplier is recognized by our ability to supply product to customers, such as, Honda, Toyota, Nissan and Hyundai inside and outside of the United States. This autonomy is also fully demonstrated by the fact that several divisions within GM have no VA involvement.

In an effort to pool the best talents of the Corporation together, in 1972 a Corporate Value Management Committee and Steering Committee was formed. Initially the committee met monthly, but now each meets five times per year. As with the SAVE community, this group feeds and networks with each other in a very "special" way.

Delco Chassis has been extremely active in both committees since their conception. Recently, Mr. Rains has served as Vice Chairperson and Chairperson of this committee. Delco involvement goes way beyond mere attendance. As a member of the Steering Committee, we share responsibility to plan the agenda for each Corporate Meeting. Delco personnel has been responsible for proving many outside speakers to present. Delco makes at least one presentation at almost every meeting. Because our program is so active and on the leading edge of several VA applications, other GM divisions are interested in what we have to say. Several non-VA employees have made presentations to this committee. One such presentation was made by a Delco hourly EPG team leader.

Delco Chassis has been very helpful in assisting other GM Divisions start VA Departments and/or participate in VA workshops. The first such activity was in September, 1982. A 19 team joint workshop was held with another GM Division in Dayton, Delco Moraine. This was Delco Moraine's first experience with VA. For some reason that division has not been able to sustain any formal VA activity on its own, so Delco has continued to assist them, by allowing teams to participate in our workshops. Now that Delco Moraine is part of Delco Chassis all areas of that business now use VA.

In 1986, while the Inland Division was still an entity, the Delco Chassis VA Group worked very closely with that division to help them start a VA program. While Inland initially hired VAI, they were soon able to facilitate their own workshops with our help.

In the fall of 1987 at no cost to them Delco Chassis facilitated a workshop in Detroit for the Fisher Guide.

Because of our successful workshop in Dunstable, England in 1988, Vauxhall Motors Limited requested that Delco Chassis facilitate a workshop. This 8 team workshop took 5 months to plan and prepare for. The Vauxhall management team was very appreciative of Delco's assistance.

DELCO CHASSIS SUPPORT & PROMOTION OF VA OUTSIDE OF THE CORPORATION

Delco has conducted numerous workshops at its supplier's plants. Delco offers these workshops to the suppliers free of charge.

In most of these supplier workshops our suppliers were able to dedicate up to 20 - 30 people to the VA activity, since they were not required to travel.

Delco Chassis personnel have made numerous VA presentations with the intent to promote the use of Value Analysis. Presentations that can be documented are:

June 30, 1983 - at the Ohio Regional Industrial Engineering Productivity Workshop.

May 13, 1985 - at the AITE Student Chapter at Ohio State University.

One particular script has been presented approximately 25 times. Audiences include GM suppliers and local community leaders such as the Kettering City School Administrative Staff (9/17/90) and the Kettering City Staff (10/23/90). In all cases these organizations have been invited to participate in a VA workshop free of charge. Continued efforts of promotion within the community is becoming a high priority.

Community involvement includes:

1. Kettering Hospital studied their procedure to admit patients in our October, 1984 workshop. This team reported savings of $52,000 per year.

2. In December, 1984 a Sinclair Community college class was given a real Delco Chassis product to value analyze. Although the original intent was just to help the students, Delco realized a savings of $472,395 per year by implementing their proposals. Since that time Delco Value Analyst's have been a regular guest speaker to all the VA students at Sinclair.

3. In 1985, Community Mutual Insurance Company (Blue Cross/Blue Shield) had a mission to investigate the reasons and causes of Customer Service inquires.

4. Most recently in the summer of 1993, a workshop was conducted with a focus on health care. Three teams with representatives from five hospitals in the Dayton, Ohio area proved to be very successful. General Motors with health care as its single biggest expense will continue to use VA as a method to help the health care industry reduce its costs. It appears, at this time, that this workshop initiated and will become the pattern to be used throughout General Motors.

USE OF THE VA METHODOLOGY AT DELCO CHASSIS

Delco Chassis has made many innovations to the VA Methodology. Primarily these have been done to enhance our own performance as VA practitioners for Delco Chassis, however, these are all shared within the VA community.

Delco Chassis takes great pride in the diversity of its applications of Value Analysis. In concert with the General Motors Quality Network (General Motor's Total Quality Management process), we have recently had successful VA teams analyze the following topics:

1. Waste minimization
2. Changeover time reductions
3. Plant layout
4. Product de-proliferation
5. Product containerization
6. Pull scheduling production systems
7. Preventive maintenance systems
8. Cell type manufacturing systems
9. Communication system improvements with EDS
10. Cost estimating system improvements
11. Prototype part manufacturing system improvements
12. Value analyze capital equipment in the early design phase

While several proposals from these teams have resulted in documented savings, most, however, do not result in tangible savings, and thus are not reflected in the savings totals. There is no doubt, however, that these types of projects improve Delco Chassis as a business and we will continue to perform these VA topics. They help our growth and competitive position in the world marketplace.

All of these are in addition to the more traditional uses of Value Analysis, which is on product design and manufacturing processes. The functional thought process, which distinguishes VA from all other key management business tools, is remarkable. Functional thinking allows for unconstrained creativity.

Folowed are some specific project results:

VALUE ANALYSIS WORKSHOP

ABS VI (PART #

MARCH 1-4, 1993

MISSION: *TO IMPROVE THE VALUE OF THE ABS UNIT BY IMPLEMENTING DESIGN RELATED PROPOSALS TO SATISFY THE CUSTOMER AND REDUCE UNWANTED AND UNNECESSARY EXPENSE.*

TEAM MEMBERS:

QUALITY CONTROL

MANUFACTURING ENGINEERING

PRODUCT ENGINEERING

PRODUCT ENGINEERING

MANUFACTURING

COST ANALYSIS

CREATIVITY TEAM REP

MANUFACTURING ENGINEERING

SYNCHRONOUS FACILITATOR

PROJECT(S) : _____

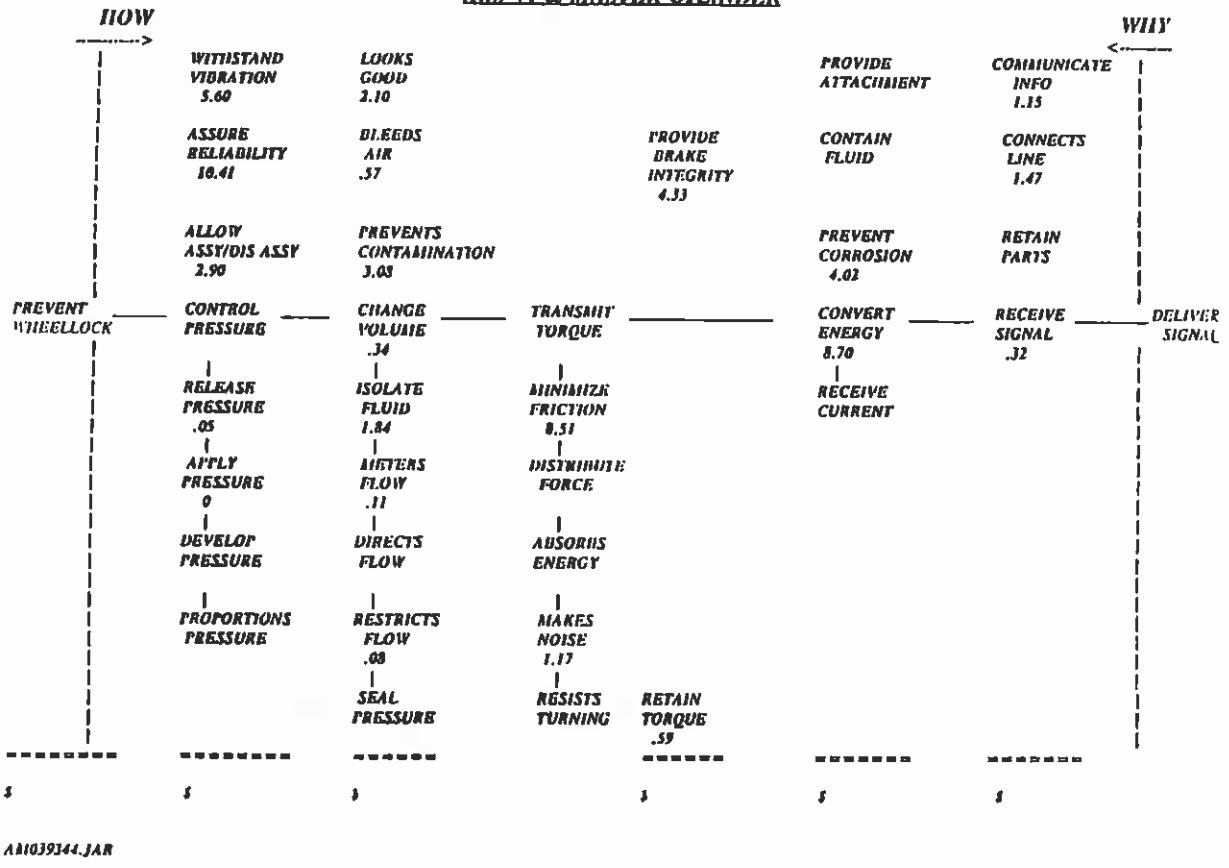
VALUE MANAGEMENT
COST - FUNCTION WORKSHEET

DATE: _____

VALUE MANAGEMENT
COST - FUNCTION WORKSHEET

	NO.	ASSEMBLIES/PARTS OPERATIONS	COST	FUNCTION (VERB NOUN)																				
	1	CASTING	$.55																					
	2	MACHINING				1.97										.12		2.25				.25		
2	3	BALL SCREW-PRT				3.70														3.70	1.37	.69		
	4	BALL SCREW-ASL				1.85														1.85	.69	.34		
	5	ACTUATOR	.42			.04															.18	.01		
2	6	PISTON ASM.-UP	1.14		.14	.08										.04		.40		.08	.04	.04		
2	7	PISTON ASM.-RR	.70		14	.05										.02		.24		.04	.04	.02		
2	8	CHK VALVE-RR	1.74	.45												.03		.47			.03	.03		
2	9	CHK VALVE-PRT	1.89	.45											.11	.08	.04	.45			.04	.04		
3	10	RETAINER	.09																		.04	.02		
2	11	SOLENOID					.32	.32	.32					1.84		.54		.87						
2	12	SEAL	.12							.05								.05						
2	13	BLEEDER VALVE	.06													.01		.06						
16	14	BALL 7/32	.16															.18			.01			
3	15	BALL 3/32	.02															.01						
3	19	GEAR	3.35			1.17														.17	.17		1.17	
2	17	TRANSFER TUBE	.50													.12		.18						
2	18	TORX BOLT	.98													.12		.20						
4	16	O RING SEAL	.11															.04						
	20	MOTOR PACK				2.44	2.44	1.32												2.44				
0	21	TORX SCREW	.39																	.01				
3	12	NUT	.14																					
	13	LOWER	.48																					
6	14	SCREW	.18																					
	18	ASSEMBLY																9.34						
	19	MASTER CYLINDER	17.38				1.74				3.48	1.74						3.48						
	17																							
	18																							
	19																							
	20																							
	21																							
		TOTAL		90	.34	15.00	9.70	1.64	.32	.05	0	3.48	1.74	1.84	.11	1.14	.08	11.72	0	9.51	2.63	1.93	1.17	
		PERCENTAGE	100	7	2	116	67	12	2	0	0	23	14	14	1	32	0	104	0	66	20	15	1.0	

ABS VI & MASTER CYLINDER



TEAM: ABS VALUE ANALYSIS

TOTAL # IDEAS: 473 (NEW RECORD)

TOTAL # IDEAS AFTER EVALUATION: 14

POTENTIAL SAVINGS/YR

SHORT TERM:

LONG TERM:

TOTAL SAVINGS: $ 3,366,900

NEXT TEAM MEETING (DATE/TIME/PLACE):

INTEGRATE WITH PRODUCT QUALITY MEETING.

PROPOSAL WORKSHEET

TEAM: ABS VA		PRODUCT LINE: All ABS M/P	
PROPOSAL NO.: 5	PART NO.: 22091963 22091968	PROJECT:	
WORKSHOP DATE: 22097818		ANNUAL VOLUME: 2.4 Million	

CURRENT	PROPOSED
- Motorcycle Cover Hold Down With (5) Screws	Add Latch To Cover End, Snap Tab To Baseplate & Use Die Cut Compressible Gasket To Hold Down Cover
- Sealed w/Rubber Coated Aluminum Gasket	
	+ .03 Baseplate Tab
	+ .02 Cover Latch
.05 Cover Screws	.13 Die Cut Gasket
.287 Cover Gasket	.15
.342	
	60K Cover Tool
	20K Baseplate Mod's
	10K Gasket Die

ECONOMICS

CURRENT PRICE PER UNIT $ .342	PROPOSED PRICE PER UNIT $ 0.15

ESTIMATED ANNUAL SAVINGS POTENTIAL: TOTAL $ 484000

LABOR $ 23600 MATERIAL $ 460800 BURDEN $ _____

ESTIMATED COSTS OF CHANGE: TOTAL $ 90000

CAPITAL $ _____ TOOLS $ 90000 EXPENSE $ _____

SIMPLE PAYBACK 0.2 YEARS

Risk: Low / Medium

PROPOSAL (CONT'D)

TEAM: _____ PROPOSAL #: _____ DATE: _____

PROPOSAL ADVANTAGES:

ACTION SEQUENCE

ACTION REQUIRED	RESPONSIBILITY	DUE DATE
'X' Dwgs	Rosenblum	4/1/93
Samples	Kettenring	6/1/93
Validation	Bannister	7/1/93
Tooling	Forrester	TBD
Implement	DeLeo	7/1/94

ADDITIONAL COMMENTS OR RECOMMENDATIONS:

AMBRAKE

PARTNERSHIP:	**AKEBONO BRAKE OF JAPAN &** **DELCO CHASSIS DIVISION** **OF GM**
PRODUCT:	**BRAKE COMPONENTS**
LOCATION:	**ELIZABETHTOWN, KENTUCKY**
PLANT SIZE:	**272,000 SQ. FT.**
EMPLOYMENT:	**500 ASSOCIATES**

SUBJECT: ***EK-Ksp Park Brake Lever Design***

MISSION: ***Develop Best/Lowest Cost Design***

SCOPE:

- *Parking Brake Lever*
- *Spring Clip*
- *Return Spring*
- *Cable*
- *Button*
- *Nut Lever Shaft*
- *Boot Lever Shaft*
- *Spindle*
- *Bracket*

Included

- *Parking Brake Mechanism*

not Included

TEAM MEMBERS:

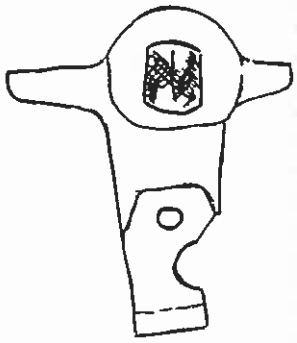
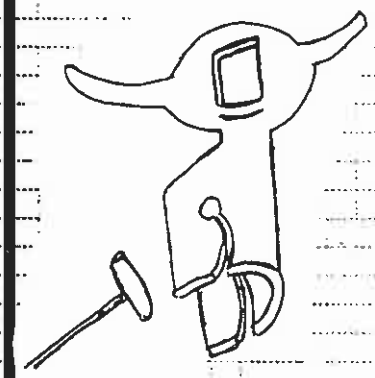
Ambrake Sales
Ambrake Materials
Ambrake Quality
Akebono Mechanical
Ambrake Purchasing
DCD-Ambrake-Sales/Eng
CLCD-S
CLCD-S
Batesville President
BT&D & Johnson - MacDonald
Ambrake Initial Flow
Ambrake Sales

WORKSHOP RESULTS

IDEAS GENERATED	**177**
PROPOSALS REMAINING AFTER EVALUATION	**21**
POTENTIAL SAVINGS:	**$345,000**
(HIGHEST PROBABILITY PROPOSAL)	

PROPOSAL WORKSHEET

TEAM: AMBRAKE EK-Kulever	PRODUCT LINE:
PROPOSAL NO: 3 PART NO:	PROJECT: Park Brake Lever
WORKSHOP DATE: 4/23/93	ANNUAL VOLUME: 480,000 pcs.

CURRENT	PROPOSED
	

ECONOMICS

CURRENT PRICE PER UNIT $1.07	PROPOSED PRICE PER UNIT $0.35

ESTIMATED ANNUAL SAVINGS POTENTIAL: TOTAL $ 345,600

LABOR $ _____ MATERIAL $ _____ BURDEN $ _____

ESTIMATED COSTS OF CHANGE: TOTAL $ 45,000

CAPITAL $ _____ TOOLS $ 45,000 EXPENSE $ _____

SIMPLE PAYBACK .13 YEARS

PROPOSAL (CONT'D)

TEAM: _____ PROPOSAL #: "U" Form shifter DATE: 4-23-93

PROPOSAL ADVANTAGES:

No Cable Change

ACTION SEQUENCE

ACTION REQUIRED	RESPONSIBILITY	DUE DATE
ESTABLISH LEVER DESIGN		7-1-93
Establish Test Plan	JOHNSON/MARTIN	6-1-93
Obtain Prototypes	MARTIN	1-1-94
Lab Testing	JOHNSON/ESEC	4-1-94
Vehicle Testing	MARTIN/JOHNSON	10-1-94
Business case/Cadillac Funding	MARTIN/SCHAFFER	11-1-94
FMVSS 105 Testing	JOHNSON SOLHA	2-1-95
Release Design	MARTINAK	4-1-95

ADDITIONAL COMMENTS OR RECOMMENDATIONS:

Mr. PETERSON. Thank you very much. I appreciate your accommodating our time constraints here. Next we have Mr. Querns.

STATEMENT OF WESLEY R. QUERNS, CIVIL ENGINEER, EASTMAN KODAK CO., ROCHESTER, NY

Mr. QUERNS. Thank you, Mr. Chairman and members of the subcommittee. I work with Eastman Kodak Co., Rochester, NY. I'm a civil engineer, so I present private sector input and layperson input.

Circular No. A–131 states that value engineering is to be used to reduce program and acquisition costs. Value engineering is an excellent tool and I do so support requiring value engineering.

However, it is not necessarily the best tool for reducing costs. Value engineering has limited applications that prevents it from being used to optimize all costs. Life cycle cost management involves much more than just value engineering. Value engineering is only one of a number of analytical tools that can be applied to reduce costs.

The collection of all the economic analytical techniques is known as total cost management or TCM. TCM is better suited to the stated goals of this circular because it is more encompassing, addressing the full range of costs throughout a program life cycle. Total cost management is a way to manage costs throughout the life cycle.

It includes business and program planning, management science, cost estimation, cost control, economic analysis, program and project management, planning and scheduling. It includes many cost reduction and cost control activities not currently addressed by value engineering.

So the point is, I think that if we really want to reduce costs, we may want to consider TCM, either instead of or in addition to value engineering as an option. I think that H.R. 133 is a halfway measure that recognizes the benefits of value engineering, but fails to recognize the potential benefits of total cost management.

One apparent conflict in Circular A–131, value engineering has its greatest benefits when it is applied early during a program life cycle. I agree with that. It is unrealistic though to expect to be able to report cost savings this way, because the alternative selected will be the only alternative.

With that zero-based approach, there is no original plan against which to benchmark the results. So it's only when value engineering is used to evaluate an existing design that we have a basis for showing cost reduction.

One other concern is that H.R. 133 specifies that value engineering shall utilize qualified value engineering personnel. This requirement has the potential to needlessly limit the number of people who would lead value engineering studies if it comes to mean only certified value specialists or CVS. The qualification for this position should be less restrictive than as stated. If there is a need to specify the level of qualification it should be more general, such as qualified cost professionals. The need is for a qualified cost professional, not necessarily a value specialist per se.

With regard to H.R. 2014, I think that the criteria to achieve 5 percent cost savings on programs with engineering that's less than

35 percent complete is far too loose. Programs in early design phases have incomplete scope definitions, wide ranges of uncertainty, allowances for poorly defined inscope items, and relatively large contingencies. So it would be easy to reduce the cost of a program by 5 percent during a conceptual engineering phase, just because of the nature of the phase.

In addition, there is a very real possibility that original program scopes could be artificially inflated by 5 percent or more, just so that they could be cut later to obtain the additional funding. The process of demonstrating cost savings in order to prove value engineering success is good in theory, but has accountability and quality problems.

I think that there should be contractual incentives to improve cost, schedule, and quality performance so that they would not necessarily be needed at the legislative level.

The Kodak perspective. We have been using value engineering at Kodak for about 24 years on a worldwide basis. We see savings that roughly equal those we have heard in previous testimony. It ranges anywhere from $60,000 to $4.5 million per application. However, value engineering use is optional at Kodak. It's not required. There are no rewards or incentives to use value engineering, nor disincentives for not using value engineering.

The Kodak people that I spoke with feel very strongly that leaders of VE studies should not be required to be a certified value specialist. Kodak has a number of people that we feel are qualified to lead high quality value engineering studies who do not hold CVS certification.

We use a combination of methods to accomplish value engineering goals at Kodak. We use strong customer representation on project teams and a strong orientation toward customer functional requirements that we maintain throughout project life cycles.

Thank you.

[The prepared statement of Mr. Querns follows:]

Testimony of Wesley R. Querns 04-Mar-94
Re: OMB Circular No. A-131, H.R. 133, and H.R. 2014

Circular No. A-131

Circular No. A-131 states that Value Engineering is to be used to reduce program and acquisition costs. Value Engineering is an excellent tool for solving problems and reducing costs while maintaining customer-specified performance or quality criteria. However, Value Engineering is not the only, and not necessarily the best management tool for reducing these costs. There is a very definite need for Value Engineering, but I don't believe that Value Engineering can be used as a single tool to accomplish the levels of cost-reduction that should be realized. Value Engineering has limited application that prevents it from being used to optimize costs in all aspects of program and acquisition costs. Life-cycle cost management involves much more than just Value Engineering. Value Engineering alone will not accomplish the purpose of OMB Circular No. A-131. Value Engineering is only one of a number of analytical tools in Cost Engineering that can be applied to reduce costs.

The collection of these economic analytical techniques, along with resource planning and control, cost control, profitability, and risk analysis is known as Total Cost Management (TCM). Total Cost Management is better suited to the stated goals of OMB Circular A-131 because it is more encompassing, addressing the full range of cost issues throughout a program life-cycle.

Total Cost Management

I don't agree that Value Engineering is "the most effective, efficient, economical, and environmentally-sound arrangement for conducting the work of agencies ... ". The best way to achieve the results called for in the three reference documents is to apply all of the elements of total cost management. The potential for cost reduction is much greater with Total Cost Management than with Value Engineering by itself

Total Cost Management is a systematic approach to managing costs throughout the life-cycle of any program through the application of cost engineering principles and technology. TCM includes business and program planning, management science, cost estimation, cost control, economic analysis, program and project management, planning, and scheduling. Value Engineering is included in the scope of TCM as one element within "economic analysis" along with life-cycle cost analysis, profitability studies, cost-benefit analyses, and optimization studies.

Total Cost Management includes the following cost-reduction and control activities that are not addressed by Value Engineering.

- o Cost Estimating
- o Risk Analysis
- o Expenditure Forecasting
- o Project Planning
- o Critical Path Scheduling
- o Capital Budgeting
- o Cost Tracking and Reporting
- o Cost Variance Analysis and Project Control
- o Project Expediting (Schedule Crashing)
- o Net Present Value
- o Break-Even Analyses
- o Cost/Schedule Integration
- o Project Management

Wesley R. Querns

- o Project Performance Measurement
- o Resource Management
- o Contract Schedule Acceleration and Delay Claims
- o Productivity Management
- o Materials Management
- o Contract Bids
- o Earned Value Analyses
- o What-If Analyses

Value Engineering helps identify and remove unnecessary costs. By contrast, TCM includes cost identification and reduction as well as the following additional activities:

- o establishes those costs in the first place so they can be identified;
- o provides alternate methods for identifying and reducing costs in addition to Value Engineering;
- o controls costs during projects,
- o provides for cost analyses throughout program life, and
- o manages costs for situations for which Value Engineering is not applicable (e.g., claims);

Compared To What?

There is an apparent dichotomy in OMB Circular A-131. Value Engineering has its greatest benefits when it is applied early during a program life-cycle. The Circular states on page 4 that "... potential savings are greatest during the planning, design, and other early phases of ... development." I agree with this concept. It is though, unrealistic to expect to be able to measure and report cost savings as a result of having used Value Engineering in this manner because the alternative selected will be the only program approach. With this zero-based Value Engineering approach, there is no "original" program plan against which to benchmark the Value Engineering results.

Value Engineering studies are designed to select from among several engineering alternatives the solution that offers the least life-cycle cost with no compromise in quality. When Value Engineering is used to select the "best", "highest value" alternative, there is no "non-Value Engineering" approach upon which to base a cost savings comparison (unless it's a hypothetical approach that compares actual costs to an alternative that might have been selected if there had been no Value Engineering).

H.R. 133

H.R. 133 is designed to "... identify and implement opportunities to reduce capital and operation costs and improve and maintain optimum quality of ... projects " I believe that Value Engineering, properly applied, will do this, and that real cost savings can be shown as a result. But I also believe that greater cost savings can be realized by implementing the rest of the total cost management techniques as well. I think that H.R. 133 is a half-way measure that recognizes the benefits of Value Engineering, but fails to recognize the potential contributions of total cost management.

Wesley R. Querns

H R. 133 specifies that Value Engineering processes shall "utilize qualified value engineering personnel ...".I think this requirement has potential to needlessly limit the expertise of responsible personnel if it comes to mean only Certified Value Specialists (CVS). Cost Engineering includes all elements of cost control, cost estimating, planning, scheduling, value engineering, risk analysis, claims, budgeting, and more. I think that the qualification for this position should be less restrictive than is stated. If there is a need to specify the level of qualification of a person to lead the cost reduction effort, it should refer to "qualified cost engineering personnel" or "qualified cost management personnel".

I think there is potential danger if "qualified value engineering personnel" is defined as someone certified as a CVS. First, the need is for a qualified "cost professional", not a "value specialist" per se. Value Engineering is a discrete specialty within cost engineering. A CVS is expert on Value Engineering matters, and not necessarily on other cost engineering topics - the same way that a Certified Professional Estimator (CPE) is expert on estimating issues, and maybe not on Value Engineering, claims, scheduling, and other cost engineering elements.

Second, while certification indicates a certain level of competence, it does not mean that those cost professionals who are not certified are not capable of leading cost management efforts on programs.

H.R. 2014

H.R. 2014 specifies that completed value engineering analyses must be ". . signed by a certified value specialist". The comments I made with regard to H.R. 133 on this issue apply to H R. 2014 as well.

The criteria to achieve 5% cost savings on programs with engineering <35% complete is far too loose. Programs in early design phases have incomplete scope definitions, wide ranges of uncertainty, allowances for poorly defined in-scope items, relatively large contingencies, and other characteristics of conceptual phases that are designed to account for a general lack of knowledge of what the final product will be. Accordingly, it would be easy to reduce the cost of a program by 5% during a conceptual engineering phase just due to the nature of the phase.

In addition, there is a real possibility that original program scopes will be artificially inflated by 5% or more just so they can be cut later to attain the additional funding.

The process of demonstrating cost savings in order to prove that Value Engineering has been successful is good in theory, but is fraught with accountability and quality problems in reality. A recommendation is to just dispense with this entire aspect of H.R. 2014, and merely fund the accomplishment of Value Engineering studies themselves. There should be contractual incentives to improve cost, schedule, and quality performance on programs so that they are not needed at the legislative level. I think that the goal of H.R. 2014 is to encourage the use of Value Engineering. That can be accomplished by offering to pay for "approved" or "certified" Value Engineering studies, as opposed to paying for cost savings that a) are easy to attain during conceptual engineering, and b) are easy to fabricate when sizable incentives are at stake. I think there is potential to induce fraudulent behaviors by offering to increase the "Federal share payable" on transportation programs.

Another point is that Value Engineering can be successful without reducing costs. So, proving cost reduction is not necessarily a good measure of Value Engineering performance. Value Engineering goals include quality improvement, performance improvement and other non-monetary benefits. In addition, a Value Engineering study may help avoid potential risks, prevent scope increases, prevent rework, and produce other life-cycle savings that can't be classified as "cost reductions" as defined in FAR procurement.

There is a concern about the validity of the cost savings that would be submitted during engineering phases of programs. In life-cycle cost engineering, actual costs are not known until well after installation is complete because the life-cycle includes operating costs, maintenance, decommissioning, salvage value and other late-phase costs. So Value Engineering cost savings submittals are just estimates, and their accuracy cannot be determined until after additional federal support is provided according to H.R. 2014.

Kodak Value Engineering

Value Engineering establishes a methodology for defining and satisfying the functional requirements of the user/owner. Kodak accomplishes this goal through various means, and not just by application of formal Value Engineering. Kodak uses a combination of methods to insure that quality projects are completed at least cost. Kodak establishes project teams with a customer representative who is heavily involved throughout the project life-cycle to insure that customer requirements are met. Kodak produces a customer requirements document that is the basis for conceptual engineering efforts. There are periodic reviews of engineering progress to insure that the customer's requirements are being met throughout engineering

Customers approve all project changes, have input on project team organization, and retain payment authorization. In short, the ability to meet customer functional requirements is built-in to the project process so that a separate Value Engineering process to accomplish the same thing is viewed as extraneous.

Zero-based Value Engineering studies frequently select from among engineering alternatives to insure that quality is delivered at least cost. At Kodak, engineering alternatives are evaluated during a conceptual engineering phase. Project teams are required to demonstrate via design reviews, that alternatives have been thoroughly evaluated, and that the recommended approach provides the highest quality at the least cost. This justification is required prior to funding approval. Engineers work closely with Financial Services, Project Management, and Contracts personnel to insure that the recommended proposal provides the least life-cycle cost to customers while maintaining all performance and quality requirements specified. So, in alternative selection, as in functional requirements, benefits provided by Value Engineering are inherent in the Kodak capital project process.

Project teams analyze the functions that must be performed when analyzing cost, reliability, and performance. Project teams develop alternatives, and present owner/users with those that best meet the owner's and user's objectives. Teams then analyze technical viability of alternatives, select the best solution, and incorporate those factors into designs. So, functions that are performed by Value Engineering teams are performed by project teams at Kodak. Project teams instill value into projects with a process that simulates the structure of systematic Value Engineering.

Wesley R. Querns

Owners/users establish functional performance and acceptance criteria for evaluating alternatives during a detailed design phase. Criteria include initial cost, life-cycle cost, ease of operation, maintenance, safety, schedule, and others, just as in formal Value Engineering studies. Kodak project teams develop cost models (i.e., Project Breakdown Structures), estimate costs, develop implementation plans (i.e., execution strategies), and then implement the solution. There are numerous phases and gates in the Kodak project process to insure that owners/users are consistently receiving high-value projects at least life-cycle cost. This is consistent with follow-up phases of Value Engineering studies.

Kodak project teams define project functions and achieve consensus on the project's direction and approach during conceptual engineering. Project teams at this phase include the owner, designer, user, and construction manager. By coordinating early in the design process, teams minimize miscommunication and rework, and avoid costly schedule delays and cost overruns.

Mr. PETERSON. Thank you. Dr. Varadarajan.

STATEMENT OF RAJAN VARADARAJAN, Ph.D., P.E., COUNCIL ON FEDERAL PROCUREMENT OF ARCHITECTURAL/ENGINEERING SERVICES, WASHINGTON, DC

Dr. VARADARAJAN. My name is Dr. Varadarajan, I'm a professional engineer, president of a consulting engineering firm. This year I serve as chairman of the Council on Federal Procurement of Architectural Engineering Services, otherwise known as COFPAES. We are a coalition of national associations representing millions of skilled professionals in the A/E community.

Let me commend you first and the members of the subcommittee for your legislative initiative to increase the use of value engineering in the Federal sector. The A/E community supports legislation to promote more efficient and cost effective Federal contracts.

As applied to Federal facilities projects during design or construction, value engineering is an organized effort to review the preliminary design and make recommendations that would reduce design, construction, and maintenance costs of a particular Federal project.

This should be done without sacrificing program needs, quality, aesthetics, and operation and maintenance capability. Value engineering is not intended to just do a cheaper design but to do a better design.

Prime Federal contracts for professional design services that are procured on the basis of qualifications do not generally include value engineering clauses. Rather, if the government desires special value engineering studies during the design phase of a project, the agency will engage a study team other than the prime design group.

These third-party studies are intended to identify design or specification changes that could reduce costs without sacrificing quality. The design community supports uniform policies and standards for every Federal agency's value engineering program.

Those policies and standards should include the following five suggestions. First, overall objectives of the agencies' value engineering program with focus on long-term savings and enhanced quality not short-term cost reduction.

Second, Federal VE policy should also include proper staffing and authority to make fair, objective, and authoritative decisions for the agency. Specifically, value engineering officers responsible for Federal A/E and construction contracts should have direct architectural, engineering, or construction education coupled with substantial experience in the appropriate discipline including registration of the disciplines as professional engineers or architects.

Third, it is important that Federal Government have uniform criteria for selecting projects for value engineering. Such as the minimum size in terms of estimated cost, complexity of the facility or uniqueness of its function or construction.

It is imperative that selection of the A/E firm should be conducted in accordance with the Brooks A/E Act. This act defines who is qualified to provide A/E services to the government.

Next, VE during design must be accomplished prior to 35 percent completeness, preferably, in the first 10 to 15 percent of the project

cycle. It must be accomplished during the concept design phase and prior to design development. If value engineering is done when a design is relatively complete, implementation of recommended changes may require significant redesign work.

In order to accomplish these objectives, we recommend that the VE be retained at the same time as the prime contractor.

Finally, we recommend that calculation of potential savings from value engineering should be conservative, scrupulously accurate, and done with accepted costing principles. Records should be kept for all VE decisions with documentation with reasons for those decisions.

Mr. Chairman, thank you for giving the design community the opportunity to brief the subcommittee on this issue. COFPAES looks forward to working with you and Congresswoman Byrne to improve the use of value engineering at the Federal level. I would be pleased to answer any questions you may have.

[The prepared statement of Dr. Varadarajan follows:]

TESTIMONY OF DR. R. VARADARAJAN, P.E.

ON BEHALF OF THE
COUNCIL ON FEDERAL PROCUREMENT OF
ARCHITECTURAL/ENGINEERING SERVICES (COFPAES)

ON

IMPLEMENTATION OF OFFICE OF MANAGEMENT AND BUDGET CIRCULAR A-131

PRESENTED TO

THE HOUSE SUBCOMMITTEE ON LEGISLATION AND
NATIONAL SECURITY

Dr. R. Varadarajan, P.E., Chairman
COFPAES
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March 8, 1994

COFPAES MEMBERS

American Congress on Surveying and Mapping

American Consulting Engineers Council

American Institute of Architects

American Road and Transportation Builders Association

American Society of Civil Engineers

American Society of Landscape Architects

National Society of Professional Engineers

GOOD MORNING MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE.

MY NAME IS R. VARADARAJAN. I AM A PROFESSIONAL ENGINEER AND PRESIDENT OF AN ENGINEERING FIRM SPECIALIZING IN THE DISCIPLINES OF CIVIL AND STRUCTURAL ENGINEERING. THIS YEAR, I SERVE AS CHAIRMAN OF THE COUNCIL ON FEDERAL PROCUREMENT OF ARCHITECTURAL AND ENGINEERING SERVICES (COFPAES), A COALITION OF NATIONAL ASSOCIATIONS REPRESENTING MILLIONS OF SKILLED PROFESSIONALS IN THE A/E COMMUNITY. I AM PLEASED TO APPEAR BEFORE THE SUBCOMMITTEE TO OFFER THE DESIGN COMMUNITY'S VIEWS ON THE IMPLEMENTATION OF OFFICE OF MANAGEMENT AND BUDGET CIRCULAR A-131.

MR. CHAIRMAN, FIRST LET ME COMMEND YOU AND MEMBERS OF THE SUBCOMMITTEE FOR YOUR LEGISLATIVE INITIATIVE TO INCREASE THE USE OF VALUE ENGINEERING IN THE FEDERAL SECTOR. THE A/E COMMUNITY SUPPORTS LEGISLATION TO PROMOTE MORE EFFICIENT AND COST EFFECTIVE FEDERAL PROJECTS.

AS APPLIED TO FEDERAL FACILITIES PROJECTS DURING DESIGN OR CONSTRUCTION, VALUE ENGINEERING IS AN ORGANIZED EFFORT TO ANALYZE FUNCTIONS OF THE DESIGN, THE CONSTRUCTION OR THE EQUIPMENT OF A FACILITY BEING DEVELOPED; FOR THE PURPOSE OF ACHIEVING THE REQUIRED

FUNCTIONS AT THE LOWEST OVERALL COSTS OVER THE FACILITY'S LIFE CYCLE WITHOUT SACRIFICING PROGRAM NEEDS, QUALITY, AESTHETICS, AND OPERATION AND MAINTENANCE CAPABILITY. VALUE ENGINEERING IS NOT INTENDED TO DELETE ITEMS THAT WOULD JEOPARDIZE FUNCTIONS FOR THE PURPOSE OF SAVING MONEY.

VALUE ENGINEERING WAS FIRST APPLIED ON FEDERAL CONSTRUCTION CONTRACTS IN THE EARLY 1960S. SINCE THAT TIME, VALUE ENGINEERING FOR FEDERAL FACILITIES PROCUREMENT HAS DEVELOPED IN TWO WAYS. FIRST, FEDERAL CONTRACTS FOR CONSTRUCTION SERVICES OR PRODUCTS PROCURED ON THE BASIS OF THE LOWEST RESPONSIBLE AND RESPONSIVE BID OFTEN CONTAIN AN INCENTIVE CLAUSE THAT ENCOURAGES THE CONTRACTOR TO PROPOSE COST SAVING CHANGES, PROVIDED THE CHANGES DO NOT SACRIFICE ANY OF THE CENTRAL FEATURES OR ATTRIBUTES DESIRED BY THE GOVERNMENT. IF THE CONSTRUCTION CONTRACTOR'S CHANGE PROPOSAL IS ACCEPTED, THE GOVERNMENT SHARES THE REALIZED SAVINGS WITH THE CONTRACTOR.

ON THE OTHER HAND, PRIME FEDERAL CONTRACTS FOR PROFESSIONAL DESIGN SERVICES THAT ARE PROCURED ON THE BASIS OF QUALIFICATIONS DO NOT GENERALLY INCLUDE VALUE ENGINEERING CLAUSES; RATHER, IF THE GOVERNMENT DESIRES SPECIAL VALUE ENGINEERING STUDIES DURING THE

DESIGN PHASE OF A PROJECT, THE AGENCY WILL ENGAGE A STUDY TEAM OTHER THAN THE PRIME DESIGN GROUP. THESE "THIRD PARTY" STUDIES ARE INTENDED TO IDENTIFY DESIGN OR SPECIFICATION CHANGES THAT COULD REDUCE COSTS WITHOUT SACRIFICING QUALITY.

MR. CHAIRMAN, THE DESIGN COMMUNITY SUPPORTS UNIFORM POLICIES AND STANDARDS FOR EVERY FEDERAL AGENCY'S VALUE ENGINEERING PROGRAM. THOSE POLICIES AND STANDARDS SHOULD INCLUDE:

- OVERALL OBJECTIVES OF THE AGENCIES' VALUE ENGINEERING PROGRAM, WITH FOCUS ON LONG-TERM SAVINGS AND ENHANCED QUALITY, NOT SHORT-TERM COST REDUCTION.

- PROPER STAFFING AND AUTHORITY TO MAKE FAIR, OBJECTIVE AND AUTHORITATIVE DECISIONS FOR THE AGENCY. SPECIFICALLY, VALUE ENGINEERING OFFICERS RESPONSIBLE FOR FEDERAL A/E AND CONSTRUCTION CONTRACTS SHOULD HAVE DIRECT ARCHITECTURAL/ENGINEERING/CONSTRUCTION EDUCATION COUPLED WITH SUBSTANTIAL OFFICE/FIELD EXPERIENCE IN THOSE DISCIPLINES.

- CRITERIA FOR SELECTING PROJECTS FOR VALUE ENGINEERING, SUCH AS THE MINIMUM SIZE (IN TERMS OF ESTIMATED COST), COMPLEXITY OF THE

FACILITY, OR UNIQUENESS OF ITS FUNCTION/CONSTRUCTION. IT IS IMPERATIVE THAT SELECTION OF THE A/E FIRM SHOULD BE CONDUCTED IN ACCORDANCE WITH THE "BROOKS A/E ACT". THIS ACT DEFINES WHO IS QUALIFIED TO PROVIDE A/E SERVICES TO THE GOVERNMENT.

VE DURING DESIGN MUST BE ACCOMPLISHED PRIOR TO 35% COMPLETENESS, PREFERABLY IN THE FIRST TEN TO 15 PERCENT OF THE PROJECTS CYCLE. IT MUST BE ACCOMPLISHED DURING THE CONCEPT DESIGN PHASE AND PRIOR TO DESIGN DEVELOPMENT. IF VALUE ENGINEERING IS DONE WHEN A DESIGN IS RELATIVELY COMPLETE, IMPLEMENTATION OF RECOMMENDED CHANGES MAY REQUIRE SIGNIFICANT REDESIGN WORK, WHICH THE ORIGINAL DESIGN TEAM WILL BE FORCED TO UNDERTAKE. IN ADDITION, VALUE ENGINEERING THAT IS DONE LATE IN DESIGN IS OFTEN VIEWED AS MERELY COST-CUTTING. TO AVOID SUCH PERCEPTIONS, FEDERAL AGENCIES SHOULD NOT REFER TO COST REDUCTION EFFORTS UNDERTAKEN AFTER CONCEPTUAL DESIGN IS COMPLETE AS VALUE ENGINEERING, BUT RATHER AS SCOPE OF WORK CHANGES ISSUED DURING DESIGN DEVELOPMENT AND CONSTRUCTION DOCUMENT PHASES. IN ORDER TO ACCOMPLISH THESE OBJECTIVES, WE RECOMMEND THAT THE VE BE RETAINED AT THE SAME TIME AS THE PRIME "CONTRACTOR".

- CALCULATION OF POTENTIAL SAVINGS FROM VALUE ENGINEERING SHOULD BE CONSERVATIVE, SCRUPULOUSLY ACCURATE AND DONE WITH ACCEPTED COSTING PRINCIPLES. RECORDS SHOULD BE KEPT FOR ALL VE DECISIONS WITH DOCUMENTATION OF THE REASONS FOR THOSE DECISIONS.

COFPAES WOULD LIKE TO OFFER THE FOLLOWING COMMENTS FOR STRENGHTENING OMB CIRCULAR A-131 THROUGH LEGISLATION.

PARAGRAPH 1. IN THIS INITIAL PARAGRAPH, WHICH DESCRIBES THE PURPOSE OF THE CIRCULAR, THE TERM "WHERE APPROPRIATE" MAY LEAD TO CONFUSION AMONG GOVERNMENT AGENCIES AND AMONG CONTRACTORS TO THE GOVERNMENT. ADDITIONAL GUIDANCE IS NEEDED TO CLARIFY WHAT TYPES OF CONTRACTS SHOULD BE CANDIDATES FOR ONE OR BOTH OF THE VALUE ENGINEERING PROCESSES IDENTIFIED IN PART 48 OF THE FEDERAL ACQUISITION REGULATION.

PARAGRAPH 8.b.(2). THE DOLLAR AMOUNT THRESHOLD FOR PROJECTS REQUIRING APPLICATION OF VALUE ENGINEERING IS SUBJECT TO A MINIMUM PROJECTS THRESHOLD OF $1 MILLION, ABOVE WHICH AN AGENCY MUST USE VE. ALTHOUGH AGENCIES HAVE THE DISCRETION OF ESTABLISHING A LOWER VE THRESHOLD, DESIGN PROFESSIONALS ARE GENERALLY SUPPORTIVE OF VALUE

ENGINEERING WHEN IT IS APPLIED TO LARGER PROJECTS.

THERE ARE DIMINISHING RETURNS AS THE CONTRACT VALUE BECOMES SMALLER. TO CLARIFY THE APPLICATION OF VE IN THE DESIGN AND CONSTRUCTION INDUSTRY, WE CONCUR WITH THE PROVISION IN H.R. 2014 ESTABLISHING A $2 MILLION THRESHOLD FOR PROFESSIONAL SERVICES CONTRACTS. TO LOOK AT IT ANOTHER WAY, IF DESIGN AND CONSTRUCTION MONEY IS CO-MINGLED, A $35 MILLION OR HIGHER CONSTRUCTION CONTRACT SHOULD BE THE THRESHOLD FOR VALUE ENGINEERING IN DESIGN, I.E. A $35 MILLION CONSTRUCTION PROJECT, WHERE YOU ASSUME THAT SIX PERCENT OF THE COST FOR DESIGN WOULD BE APPROXIMATELY $2 MILLION.

PARAGRAPH 8.b.[3]. THE PARAGRAPH DIRECTING AGENCIES TO ESTABLISH CRITERIA FOR GRANTING WAIVERS TO THE REQUIREMENT TO CONDUCT VE STUDIES SHOULD BE EXPANDED. SIMILAR PROJECTS CAN BENEFIT FROM PREVIOUSLY COMPLETED VALUE ENGINEERING STUDIES, PROVIDING THAT THE INFORMATION IS DISSEMINATED, DESIGN CRITERIA AND SPECIFICATIONS ON SIMILAR STRUCTURES ARE ALTERED, AND TECHNICAL FINDINGS ARE WIDELY ADOPTED. AS AN EXAMPLE, IT WOULD NOT BE COST-EFFECTIVE FOR THE FEDERAL GOVERNMENT TO REQUIRE MULTIPLE VE STUDIES FOR A SINGLE STANDARD MILITARY BARRACKS DESIGN THAT IS BEING BUILT UNDER THREE SEPARATE CONSTRUCTION CONTRACTS.

FOR THE CONSTRUCTION CONTRACTOR ON A FEDERAL PROJECT, THE VE APPROACH CONSISTS OF A VALUE ENGINEERING CHANGE PROPOSAL SUBMITTED VOLUNTARILY UNDER AN INCENTIVE CLAUSE. THE CONSTRUCTION CONTRACTOR HAS THE ADVANTAGE OF BEING IN DIRECT CONTACT WITH INNOVATIVE MATERIALS, LABOR TECHNIQUES AND FACILITY CONSTRUCTIBILITY ISSUES. THE CONTRACTOR MAY BE IN A POSITION TO MAKE IMPROVEMENTS ON BOTH MATERIAL/LABOR INPUTS AND CONSTRUCTION METHODS/SEQUENCING.

FOR THE PROFESSIONAL A/E SERVICES PROVIDER ENGAGED ON A FEDERAL CONTRACT, THE VALUE ENGINEERING PROCESS IS ACCOMPLISHED BY THIRD PARTY CONSULTANTS RETAINED BY THE AGENCY, OR BY AGENCY VE PERSONNEL THEMSELVES. THE PROFESSIONAL A/E SERVICES PRIME "CONTRACTOR" IS NOT PERMITTED TO SHARE IN ANY SAVINGS THAT MAY BE GENERATED BY THE VE PROCESS. IF AN AGENCY DECIDES THAT VALUE ENGINEERING IS TO BE UNDERTAKEN DURING FACILITIES DESIGN, THERE SHOULD BE A REQUIREMENT THAT VE STUDIES BE CONDUCTED AT THE EARLY STAGES OF DESIGN (I.E. DURING CONCEPTUAL DESIGN AND CERTAINLY BEFORE THE END OF THE DESIGN DEVELOPMENT PHASE, WHICH WOULD BE PRIOR TO THE 35 PERCENT DESIGN STAGE). IN FAIRNESS TO THE DESIGNER OF RECORD, THIRD PARTY COST REDUCTION EFFORTS UNDERTAKEN AFTER MORE THAN A THIRD OF THE DESIGN IS COMPLETED SHOULD BE REGARDED AS SCOPE OF

WORK CHANGES RATHER THAN VALUE ENGINEERING.

FINALLY, I WOULD LIKE TO INCLUDE IN THE RECORD OF THIS HEARING A COPY OF AN ANALYSIS OF VALUE ENGINEERING CLAUSES APPEARING IN THE MARCH 1994 ISSUE OF NASH & CIBINIC REPORT. THIS ANALYSIS DEMONSTRATES HOW THE CONTRACT CLAUSES HAVE BECOME NARROW AND COMPLEX OVER TIME. IF GOVERNMENT IS TO PRESS HARD FOR COST REDUCTIONS THROUGH VALUE ENGINEERING, IT MUST BE ENCOURAGED TO OFFER CONTRACTORS MORE INDUCEMENTS THAN ARE CONTAINED IN CURRENT VALUE ENGINEERING CLAUSES.

MR. CHAIRMAN, I WOULD LIKE TO THANK YOU FOR GIVING THE DESIGN COMMUNITY THE OPPORTUNITY TO BRIEF THE SUBCOMMITTEE ON THIS ISSUE. COFPAES LOOKS FORWARD TO WORKING WITH YOU TO IMPROVE THE USE OF VALUE ENGINEERING AT THE FEDERAL LEVEL.

THIS CONCLUDES MY TESTIMONY. I WOULD BE PLEASED TO ANSWER ANY QUESTIONS YOU MAY HAVE.

****

Mr. PETERSON. Thank you very much. I appreciate your brevity. Mr. Zimmerman, welcome to the subcommittee.

STATEMENT OF LARRY ZIMMERMAN, PRESIDENT, SOCIETY OF AMERICAN VALUE ENGINEERS, NORTHBROOK, IL

Mr. ZIMMERMAN. Thank you, Mr. Chairman. I would like to address the three questions that you have asked in your letter to me. No. 1, the effectiveness of current OMB Circular 131, my views on legislative proposals set forth in H.R. 133 and 2014, and the potential usefulness of an incentive arrangement similar to that proposed in H.R. 2014.

Let me begin by first addressing A–131. This document is well done, and we congratulate the OMB Office of Federal Procurement Policy for this well conceived approach implementing value engineering. OMB in concert with the President's Council on Integrity and Efficiency, the GAO, agency inspectors generals, has very clearly told the Federal Government and the American people that value engineering works and a greater use of the VE methodology will help in additional savings to the government.

However, there are two specific items in the circular which we recommend be changed in order to make this regulation truly effective. The first item appears in the very first paragraph of the circular which allows Federal departments and agencies to use VE where appropriate.

Ladies and gentlemen, Federal departments and agencies will not find it appropriate to initiate viable VE programs. These two words, "where appropriate," encourage debate within the agencies rather than encouraging the implementation of VE as the circular intended.

You are here to make a better government, this is your opportunity to tell the administration and your colleagues in the House and Senate that you promote positive change. This is your opportunity to tell the Federal agencies that you want and expect that change. You have the opportunity to create a government that works better and costs less, and you have the methodology to make that happen.

Our second concern with Circular A–131 is much simpler, currently there is a $1 million threshold for projects and programs requiring the application of VE. We propose that the policy for this follow that proposed by Congresswoman Collins in H.R. 133, specifically, we agree first that each agency should establish its own dollar threshold and, second, that VE should be applied to programs, projects, systems, and projects comprising 80 percent of the agency's budget. This two-pronged approach we feel is excellent.

Regarding H.R. 133, we applaud this very close interpretation of OMB Circular A–131, which was used as a format for H.R. 133, and appreciate that the two concerns we have with the circular are addressed in the bill. Namely that VE will be mandatory and that each agency can establish this dollar threshold and program applications based on its own budget.

H.R. 133 simply states the following, implement value engineering, establish senior management responsibility and accountability, develop criteria and guidelines, provide training, insure funding, document and measure results through annual reporting.

Regarding H.R. 2014, this bill introduces an incentive approach to VE during the design of transportation projects. It grants the recipients the opportunity to increase their Federal grant shares by 5 to 10 percent, based on VE performance and implemented savings. Incentives are important to insuring the success of VE. Managers of programs and projects are responsible for producing cost effective results. In fact, that's what they are paid for. However, incentives provide the stimulus to make that change.

Therefore, we support incentives but recognize that they must be constructed to reward those that made the projects and programs work better. The committee of which those individuals that are in charge of programs are here in the audience today. As we all know the national debt exceeds $4 trillion which translates to $16,600 for every man, woman, and child in America.

Clearly, value engineering must be mandated. When legislated VE will become a duty and a job responsibility of each Federal employee and each agency, as they dedicate themselves to conserving and protecting our limited resources.

As I conclude my remarks, I would like to relate a recent example of VE legislation in Virginia which Mrs. Byrne so aptly described. In 1990, legislation mandating VE moved their program from a case-by-case basis, hit or miss program, to a full program. The results were $34 million in savings implemented over 3 years.

This led to the passage of broader VE legislation to all Federal programs in Virginia. Last month their House of Delegates voted 99 to 0 and their Senate 38 to 0 for passage of VE legislation. It was supported by the Department of Transportation, which was the agency which originally required VE and by the professional community. SAVE supports passage of VE legislation.

[The prepared statement of Mr. Zimmerman follows:]

Society of American Value Engineers

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Testimony of the

SOCIETY OF AMERICAN VALUE ENGINEERS

Presented by

Larry W. Zimmerman, FSAVE

Before the

Legislation and National Security Subcommittee

of the

Committee on Government Operations

U.S. House of Representatives

March 8, 1994

Mr. Chairman and members of the Subcommittee, I am Larry Zimmerman, President of the Society of American Value Engineers (SAVE) and Principal of Lewis & Zimmerman Associates, Inc. I am a Fellow of SAVE. I have 19 years experience in value engineering and value management. I have participated in over 450 VE studies worldwide.

It is an honor for me to appear before you today on behalf of the 1,200 members, and the 23 affiliate, international societies which comprise SAVE.

Mr. Chairman, in your invitation to me to testify before this Subcommittee, you asked that I address three topics:

1) The effectiveness of the current OMB Circular A-131;
2) My views on the legislative proposals set forth in H.R. 133, the "Systematic Application of Value Engineering Act of 1993", and H.R. 2014, the "Value Engineering Better Transportation Act of 1993"; and
3) The potential usefulness of an incentive arrangement, similar to that proposed in H.R. 2014.

OMB Circular A-131

Let me begin by first addressing OMB Circular A-131. This document is welll done. We wish to thank and congratulate the OMB Office of Federal Procurement Policy for this well-conceived approach to implementing value engineering in the federal government.

OMB, in concert with the President's Council on Integrity and Efficiency, the General Accounting Office, and agency Inspectors General, has very clearly told the federal government and the American people that value engineering works and that greater use of

the VE methodology will result in additional savings to the government.

However, there are two specific items in the Circular which we recommend be changed in order to make this regulation truly effective.

The first item appears in the very first paragraph of the Circular which allows federal departments and agencies to use VE, "where appropriate".

Ladies and gentlemen, federal departments and agencies will not find it "appropriate" to initiate viable VE programs. These two words, "where appropriate", encourage debate within agencies rather than encourage the implementation of value engineering, as the Circular intended.

A-131 deals with CHANGE - a concept which Vice President Gore and the members of the National Performance Review committee dealt with clearly. Promoting change, as every Administration, and every Congress knows, is very difficult. Federal departments and agencies steeped in decades of policies and regulations face a daunting task when they are told to make change happen. How do they define and then prioritize what needs to happen? They are presented with many methodologies, but the one which gives them the tools to define the functions they need to perform, identify and evaluate their options and then establish a program of implementation is Value Engineering. All this, yes, and it saves money too. A lot of money.

You are here to make a better government. This is your opportunity to tell the Administration and your colleagues in the House and the Senate that you promote positive change. This is your opportunity to clearly tell the federal agencies that you want and expect change. You have the opportunity to "create a government that works better and costs less"; and you have the methodology to make that happen.

Do not allow each federal agency to decide individually if VE is appropriate for them. OMB, the President's Council on Integrity and Efficiency, the General Accounting Office, and agency Inspectors General have already said it is appropriate. Put real teeth into VE - make it a law.

Our second concern with Circular A-131 is much simpler. Currently, there is a $1 million threshold for projects and programs requiring the application of VE. We propose that the policy for this follow that proposed by Congresswoman Collins in H.R. 133. Specifically, we agree that, firstly, each agency should establish its own dollar threshold and, secondly, that VE should be applied to programs, projects, systems, and products comprising 80% of the agency's budget.

The variance in the magnitude of programs and projects from one agency to another is so great that a $1 million threshold causes problems for those agencies whose projects are so large. For example, $1 million is a very small element when dealing with the Department of Agriculture's Food Stamp Program or environmental clean-up in the US/EPA or the Department of Energy. The two-pronged approach of establishing a minimum dollar threshold and applying VE to 80% of the agency's annual budget is excellent.

H.R. 133 - Systematic Application of Value Engineering Act of 1993

Let me now turn to H.R. 133. Mrs. Collins, Mr. Chairman and Cosponsors of the bill here today, let us thank you for this bold initiative. Mrs. Collins, for years you have been promoting the concept of change which this Administration so vocally advocates.

We applaud this very close interpretation of OMB Circular A-131, which was used as the format for H.R. 133, and appreciate that the two concerns we have with the Circular

are addressed in the bill, namely that VE will be mandatory and that each agency can establish its dollar thresholds and program applications based on its own budget.

H.R. 133 simply states the following:

1) Implement Value Engineering
2) Establish senior management responsibility and accountability
3) Develop criteria and guidelines
4) Provide training
5) Ensure funding
6) Document and measure results through annual reporting

We support this legislation and thank Mrs. Collins for her long history of support for value engineering.

H.R. 2014 - Value Engineering Better Transportation Act of 1993 - Incentives

H.R. 2014 introduces an incentive approach to value engineering during the design of transportation projects. It offers grant recipients the opportunity to increase their federal grant shares by 5-10 percent based on value engineering performance and implemented savings.

To date, value engineering incentives have been offered as value engineering change proposals (VECP) which allow the federal agency and its contractor to share the savings resulting from the implementation of contractor proposals. The formula for this approach is spelled out in the Federal Acquisition Regulations.

VECPs are developed for either construction or manufactured items and are prepared

during actual construction or manufacturing. H.R. 2014 offers the incentives during the design or development phase. The advantage to the H.R. 2014 approach is that changes can be made much more cost effectively early on in the process, rather than during construction or production.

Incentives are important to ensuring the success of value engineering. Managers of programs and projects are responsible for producing cost-effective results. This is what they are paid to do. Incentives, however, provide the stimulus to change.

Incentives as they apply to H.R. 133 may have several focuses:

- They must be easy to implement
- They should empower federal employees to get results
- They should reward the federal employee or team of employees for high quality and cost-effective performance
- They should give the federal employee team and the customers the ability to apply the savings to other needs of that same program or of the agency as a whole.

Therefore, we support incentives, but recognize that they must be structured to reward those who make the program or the project better.

Conclusion

As we all know, the Nation's debt exceeds $4 trillion. This translates to $16,600 for every man, woman and child in America. Clearly, value engineering must be mandated. When legislated. VE will become a duty and a job responsibility for each federal employee and each agency, as they dedicate themselves to conserving and protecting our resources.

As a private and corporate taxpayer, mandating the use of value engineering means to me that there is a program in place to constantly search for new ways to improve services and costs. Havings performed over 450 VE efforts, many of them on federal or federal grant-funded projects, I have seen first-hand the excellent results produced by the VE methodology. Our federal departments and agencies will become better stewards of the taxpayers' hard-earned dollars.

As I conclude my remarks, I would like to relate a recent example of VE legislation in the Commonweath of Virignia. In 1990, legislation mandating VE moved their transportation program for a case-by-case basis to a full program. The results were $34 million in savings implemented over three years plus improvements in the quality of their designs and services. This led to the passage of broader VE legislation to all Capital programs in Virginia. On February 18, 1994, the Virginia House of Delegates voted 99-0 and the Senate voted 38-0 for passage. Legislation was supported by the Virginia Department of Transportation, the agency which was originally required to use VE, and by the professional community.

SAVE supports the passage of Value Engineering legislation!

List of Attachments

A VALUE DIGEST - February 1994

"Virginia to VE Capital Budget: VE Becoming SOP in Multi-billion State Budget"

B VE in Action

"Management Application for U.S. Air Force Analysis of Engineering Functions"

C HOVING Report on VE

"Value Engineering and the Federal Government: An Update on Value Engineering (VE) as an Answer to Federal Waste"

Attachment A

VALUE DIGEST Engineering & Management
Defense Contract Guide

☐ Value Engineering
☐ Value Analysis
☐ Value Improvement
☐ Value Management
☐ Design-to-Cost
☐ Performance Improvement
☐ Configuration Management
☐ Suggestion Systems
☐ Quality Assurance
☐ Total Quality Management
☐ Life Cycle Cost
☐ Quality Circles

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Vol. 36, No. 2 Page 1

FEBRUARY 1994

VIRGINIA TO VE CAPITAL BUDGET: VE BECOMING 'SOP' IN MULTI-BILLION STATE BUDGET

by Charles Brown
Retired Transportation Writer

VE is on a roll in Virginia.

While the new Governor George Allen and the General Assembly have been squabbling over his favored Disney American History Theme Park at Haymarket, VE-leaning legislators and proponents have been making hay and history.

On Feb. 18, the House passed the Senate version; and on Feb. 23 the Senate passed the House version of a bill that mandates Value Engineering on the state capital budget. Three Northern Virginia legislators teamed up to take the high ground, moving the legislation through both Houses without dissent. Unanimous, no opposition in sight.

Governor Allen is expected to sign the bill with relish, befitting his selection as Taxpayer's Hero by the Council for Citizens Against Waste during his recent campaign.

The engineers of this stunning political move were, in fact, not engineers, but politicians. They are Sen. Janet Howell, (D) of Reston; Del. James Scott (D) of Merrifield; and Del. Vincent F. Callahan Jr. (R) of McLean, who first proposed VE for the capital budget in 1988.

SB 125 and HB 18, conformed into one bill, is patterned after HB 423 in the 1990 Session of the General Assembly. It was patroned by then Del. Leslie Byrne, who now represents the 11th Congressional District in Congress. That bill put Virginia "First in Value Engineering" since it mandated VE.

Effective July 1, 1994, the new bill requires:

> "The Department of General Services, through its Division of Engineering and Building, shall ensure that value engineering is employed for any such projects costing more than two million dollars."

An earlier version was amended eliminating action by the Governor, and adding the inclusion of professionals in line with Chapter 4, Title 54.1, Code of Virginia, which strengthened the bill.

Department of General Services Becomes Key Player; Capital Budget Of $440 Million In 1994-96 Biennium

The Department of General Services (DGS) finds itself in somewhat the same position as the Virginia Department of Transportation (VDOT) in 1990 when the General Assembly told it to get with VE. DGS under Director Raymond Patterson is familiar with VE and has used it on such projects as, for instance, the new State Library.

The agency will turn to Henry Shirley, Bureau of Capital Outlay Management, to follow through with the new VE requirement. He estimates that on the order of 50 projects may be covered by the VE bill. The Capital Outlay Manual will have to be revised to include the VE requirement, procedures, etc.

The proposed 1994-96 budget contains $440 million in proposed capital items of all sorts, Shirley says; and some $51 million would not be covered, he estimates. How many dollars may be subject to VE review? Shirley estimates from $150 to $300 million in the biennium. Capital improvements can cover a broad range of expenditures, he points out, such items as purchase of equipment, land, buildings, real estate, and simply 'capital improvements.' Sources of funds also may come from General Fund, debt, transportation, or other agency sources.

While VDOT obviously has the edge in VE experience and VE manpower, DGS does not appear to lean on its sister agency, but rather looks to the Naval Facilities Command. All that remains to be worked out.

President Larry Zimmerman Of SAVE Sees VE Victory As 'First Of Many Successes' For VE

Assessing the VE mandate in Virginia, Larry Zimmerman, President of SAVE, said, "The passage of Value Engineering legislation is a true picture of the successes of value engineering. The VDOT program has been such a success, a tribute, that passage of VE for all facilities was assured. VDOT strongly supported the legislation, as did professional engineering societies in Virginia."

President Zimmerman recognized efforts of Donald Parker, Michael Zabych, Hal Tufty, and Charlie Brown, informing the politicians of VE and its benefits. He praised the foresight of legislators in passing meaningful legislation to save Virginia taxpayers money.

"We hope that this is the first of many successes in the passage of VE legislation," emphasized Zimmerman.

Legislators Credit Constituents And VE People With Convincing Arguments To Mandate VE

How did it happen? Where was the big lobby pushing for VE?

Senator Janet Howell, previously a legislative aide to Del. Ken Blum (D) of Reston, explains:

"Quite some time ago I was approached by constituents who also happened to be value engineers. They convinced me that an unbiased overview on capital projects for the Commonwealth was sensible, and should be written into legislation. And so my Senate Bill 125 was born.

(Brown's story continues.)

"Although I am thoroughly convinced that this process will save the taxpayers and the Commonwealth a great deal of money in the future, the true value came from citizen participation in our government. Caring about quality standards and creating an existing cooperative working relationship with legislators is the result we will all benefit from."

Del. James Scott puts it this way:

"This year the General Assembly recognized that Value Engineering is a tried and true method for cutting government costs. The example provided by the Virginia Department of Transportation shows that VE works best with a legislative mandate, with provisions for an exemption, rather than being left as an option. I am confident that Virginia will realize a great deal of savings as a result of our most recent expansion in the use of Value Engineering."

At the hearings of the VE capital bill, it was clear that most legislators had heard of and were impressed by the VE record at VDOT over the past three and a half years under mandate to use VE. VDOT reported in January that VE savings realized through the VE Program through the second quarter FY 1993-94 were $37,752,214. Earlier the agency had reported a return on investment over the first three years of 34:1; and, on construction only, of 60:1.

During November 1993, VE advocates approached several Northern Virginia legislators who were knowledgeable about VE, made the simple argument: Look what VDOT has been able to do with mandated VE. Let us look at the next logical step -- mandate VE in the capital budget 1994-96. VE may prove to be the only way the General Assembly can find 'new money' it was argued.

Other appeals were made, telling legislators that VE needs a "liger" in the tank. A lone legislator who is totally convinced this is the way to go. As the matter turned out, three very solid legislators turned up, not one.

Engineers and Politicians: A New "Partnering"

Some observers of these developments point out that VE will soon be importantly involved in a significant portion of the state's economic activity, now running at about $32 billion in the biennium. New criteria will be developed for vendors, purchasers, contractors and many others. As VE becomes a mandate and not an option, new friends will be found, and they will make new friends. Other governments will take note; some will do better and take heed. And Virginia becomes Washington by simply crossing Memorial Bridge.

Janet Howell, the State Senator, puts it well:

"Engineering, unlike politics, is an exact science; you can be educated about the subject, trained and qualified. Politics, however, is much different -- clearly not a science. An unlikely combination, you might say, engineering and politics.

"But this year, in the 1994 General Assembly, that combination proved both compatible and valuable."

Value Engineering in Action

Management Application for U.S. Air Force Analysis of Engineering Functions

1. Background

In October 1985 the team of Hanscomb Associates, BDM Corporation, and FRUCO Engineers, Inc., was contracted by the U.S. Air Force to prepare an Analysis of Engineering Functions. This analysis was part of the Air Force's 1986 program for PROJECT IMAGE (Innovative Management Achieves Greater Effectiveness), which sought to identify implementable improvements to the engineering functions and process.

2. Scope of Analysis

The work covered the organization of engineering, the interface between the different functions and operating locations from base level to air staff, and the processes and tools (technical and non-technical) used to design, review, evaluate, approve, fund and manage the maintenance, repair, and construction of Air Force facilities worldwide.

3. Approach

It was decided that the most effective way to tackle the problem was to use Value Analysis techniques in each functional domain, as follows:

- Extensive fact-finding, visits to bases, interviews and reviews of documentation.
- Week long Value Analysis Workshops attended by the consultants, appropriate USAF staff, and outside experts in the field.
- Preliminary report for review by participants and senior management.

It was also decided that to be most effective, each functional domain would be examined by the consultant team and also by an in-house USAF team. This gave a view from the inside and from the outside. The results and recommendations of the Value Analysis Workshops were fed into the internal workshops as items for consideration by the users without knowing the source. The internal evaluation used a Crawford Slip brainstorming technique to identify and evaluate all ideas for change. Subsequently the new items were cross assessed by the consultant and the purified consultant recommendations prepared in final form for the sector report. In October 1986 a final report was prepared following a "Common Thread" Workshop to coordinate all recommendations.

4. Summary of Results

Over 200 recommendations for productivity improvements and increased effectiveness were made, many of them of some substance. Over 80% of the recommendations received positive acceptance and many followed through into implementation. Some examples follow:

- **Expansion and Realignment of Functions within the Engineering Branch of the Base Civil Engineering Organization**
  - Establishment of new Base Development section incorporating functions that were previously separated.
  - Establishment of a new Environmental Protection section.
  - Creation of a new Project Management group.
- **Accelerating the approval cycle for military construction projects**
  - Better project management procedures
  - Use of design-build
  - Better budgeting for projects
  - Greater use of pre-engineered buildings
- **Improved asset management**
  - Greater use of better program management techniques and needs assessment
  - Better coordination between engineering and program department
- **Rationalization of regulations**
  - A combined review has resulted in the elimination, consolidation, and relaxation of many regulations and guidelines
- **Increased support for training**
  - Better or more consistent training at base level
  - Improved cross-fed between all Air Force engineering entities
- **Increased computer applications at base level**
  - Use has expanded considerably to improve productivity all stages of projects

Briefing paper prepared by:
Brian Bowen
Hanscomb Associates Inc.
Atlanta

Nicholas Salerno
Ex-Major USAF, previously Chief
Project Image Engineering Group

2 March 1994

Attachment C

UPDATE

VALUE ENGINEERING AND THE FEDERAL GOVERNMENT: AN UPDATE ON VALUE ENGINEERING (VE) AS AN ANSWER TO FEDERAL WASTE

AUTUMN 1993

NEW VALUE ENGINEERING INITIATIVES BY

- DEPARTMENT OF DEFENSE
- DEPARTMENT OF TRANSPORTATION
- OFFICE OF MANAGEMENT AND BUDGET
- MORE AND MORE MEMBERS OF CONGRESS

WHAT MAKES VALUE ENGINEERING UNIQUE

- VE HAS A TRACK RECORD OF IMPROVING GOVERNMENT EFFICIENCY WHILE SAVING TAXPAYER MONEY

IF NOT VALUE ENGINEERING – THEN WHAT?

- QUICK-FIX MANAGEMENT FADS
- EMPTY CATCH PHRASES
- ENDLESS DEBATING, ANALYZING, DELAYING
- LEADING TO:
- LAY OFFS
- ARBITRARY SLASHING AND BURNING VITAL PROGRAMS

THE FEDERAL GOVERNMENT HAS ALWAYS KNOWN HOW TO GATHER OPINIONS, BUT THE SOLUTION IS ALREADY HERE –

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VALUE ENGINEERING AND THE FEDERAL GOVERNMENT

Deputy Secretary of Defense William Perry spoke at the Pentagon on July 21, 1993, at the presentation of the annual Honorary Awards for Value Engineering Achievements. Here's what Dr. Perry concluded:

> **"Whether by reducing costs, increasing productivity, improving durability, reliability or maintainability, Value Engineering helps us to get that extra measure of value for the limited resources which we have."**

During the last fiscal year, 4,401 in-house value engineering proposals resulted in savings of $750 million. Another 392 contractor-initiated proposals had an additional savings of $319 million. [Dr. Perry's remarks appear below]

The Department of Transportation also registered strong support for expanding the use of Value Engineering.

The Secretary of Transportation filed a detailed report entitled "Value Engineering on Federal-Aid Projects," responding to a requirement of Section 1091 of the Intermodal Surface Transportation Act of 1991 (Public 102-240) which resulted from the efforts of House Public Works and Transportation Chairman Norman Mineta (D-Calif) and Mrs. Cardiss Collins (D-Ill).

The DOT recommended to Congress:

> *"Analysis of the VE program as applied to Federal-aid highway projects has shown opportunities exist to reduce costs through VE. However, additional efforts are necessary to establish programs in all States to more fully obtain the*

benefits of VE during preconstruction and construction phases of project development.

"Therefore, in addition to continuing its efforts to encourage States through VE training and promotion, FHWA (Federal Highway Administration) proposes to require the use of VE in all States. In order to implement this recommendation, FHWA is considering developing a VE regulation in accordance with the rulemaking process. It is anticipated that any proposed FHWA regulation would outline minimum VE requirements, provide appropriate guidelines for the establishment of State VE programs, and be staffed within 12 months after this report is submitted to Congress." [The Executive Summary of the DOT report to Congress appears below.]

The Office of Management and Budget spelled out its support of Value Engineering on May 2 in Circular No. 131 that "requires Federal Departments and Agencies to use Value Engineering (VE) as a management tool, where appropriate, to reduce program and acquisition costs."

The Circular, introduced by an endorsement from Dr. Allan Burman, Administrator, Office of Federal Procurement, states VE can be used in systems, equipment, facilities, services, and supplies to lower life-cycle costs consistent with required performance, reliability, quality and safety.

Agencies are required to implement the following management and procurement practices:

- Emphasize by training and other means the potential of VE
- Identify a person in each agency as the focal point to monitor, manage, and maintain VE data
- Establish criteria and guidelines for screening programs and projects for VE
- Establish guidelines to evaluate VE proposals
- Actively solicit VE proposals from contractors

Some new requirements are in the new OMB Circular A-131:

- Each federal agency with an annual budget over $10 million is required to develop annual VE plans
- These plans must identify both in-house and contractor projects, products, systems and products to be VE-ed, including estimated cost of the projects.

The revision stressed that VE is one of many management tools that can be used alone or with other techniques such as Total Quality Management.

The new Circular imposes mandatory annual reporting in lieu of the ad hoc nature of reporting in the previous Circular.

Inspectors General will be asked to audit agency VE programs two years after the Circular is issued.

VALUE ENGINEERING AND THE 103rd CONGRESS

HR 133: The Systematic Application of Value Engineering Act

Introduced by Cardiss Collins (D-Ill) and Government Operations Committee Chairman John Conyers (D-Mich), HR 133 would maximize the use of VE by requiring each federal agency to use VE in their projects or programs that comprise 80% of the agency's budget.

[Co-sponsors: Bill Baker (CA), Leslie Byrne (VA), Eva Clayton (NC), Barbara-Rose Collins (MI), Michael Crape (ID), George Darden (GA), Peter DeFazio (OR), Norman Dicks (WA), John Doolittle (CA), Bob Filner (CA), Bart Gordon (TN), Bob Inglis (SC), Andy Jacobs (IN), Carolyn Maloney (NY), Matthew Martinez (CA), John M. McHugh (NY), Martin Meehan (MA), John Murtha (PA), Stephen Neal (NC), John Olver (MA), Bill Orton (UT), Tim Penny (MN), Charles Rangel (NY), Edward Royce (CA), Dick Swett (NH), James Walsh (NY), Albert Wynn (MD), Dick Zimmer (NJ)]

HR 2014: Value Engineering Better Transportation Act of 1993

Introduced by Leslie Byrne (D-VA), HR 2014 would provide federal dollars as incentive to state transportation programs that include VE reviews. By increasing the federal project share to state transportation departments that use value engineering, the financial burden on the state is reduced. **When a project's overall cost goes down through value engineering, the federal government spends less, and that saves taxpayer dollars.** Her bill does not mandate or penalize those states that choose not to use value engineering, but it does provide local, state, and federal governments with an incentive to save money while creating a better product. [Co-sponsors: Rick Boucher (VA), Ron de Lugo (VI), Eric Fingerhut (OH), James Moran (VA), Norman Sisisky (VA), Eva Clayton (NC)]

As a State Senator, Rep. Byrne revitalized the Virginia Department of Transportation (VDOT) in 1990 by requiring VE reviews on all transportation projects costing $2 million or more. The VDOT, seeing VE's usefulness and concrete, money-saving results, actually expanded the use of VE into other projects. **According to VDOT Commissioner Ray D. Pethtel, "VE has saved approximately 20 million transportation dollars over a span of three years, and including administrative costs, has provided the Virginia Taxpayers a return above costs ration of 34:1."**

VALUE ENGINEERING: A DEFINITION

"Value Analysis (VA)" and its partner "Value Engineering (VE)" were developed originally by an American, Lawrence Miles of General Electric, in the closing months of World War II. Seen as a "saving scalpel" VA and VE both use the same technique of applying the American-invented Value technology. VE takes place in the design stage; VA after production has begun.

Value Engineering (VE) is a broad ranging, unique, problem-solving technique. It can be applied anywhere there is a function that must be performed and a way to measure that function. Value Engineering is an organized study of the functions of systems, equipment, facilities, services and supplies to achieve the essential functions at the lowest life-cycle cost consistent with requirements of the user. The Government Accounting Office (GAO) has measured VE savings at typically 3 to 5 percent of project cost.

For each problem, a multi-discipline team, none of whom were involved in the original design, identifies the essential functions that must be performed in that problem area. After the basic functions are agreed upon, the team then brainstorms in many creative and pragmatic ways to accomplish the essential function. Specifically, the phases of a formal VE study are:

- Information gathering (What is now being done?)
- Function Analysis (What must be done?)
- Creative Brainstorming (What else will do the job?)
- Evaluation (Which ideas are best?)
- Development (What is the impact if adopted?)
- Presentation (Show VE recommendations to owner/management.)
- Implementation and Audit (Tally annual impact, improvements, savings.)

VALUE ENGINEERING IN THE GLOBAL MARKETPLACE

Value Engineering is a major success story abroad. While the idea was formulated in the United States, governments and industries in other countries have had the foresight and common sense to see VE's worth and adopt it for their own use so effectively.

As reported in BUSINESS WEEK (12/21/92), Japanese car makers are using Value Engineering to cope with hard times:

> *Using a technique called 'Value Analysis' a way of eking out savings in models already being produced, Japanese companies are also taking penny-pinching to a new plane. here are a few from Toyota's Chief Engineer's Kiyokazu Seo. Hook up tail lights with one connector instead of two: savings, 42 cents. Make a smaller plastic clip to anchor the body's weatherstripping: a $1.05 savings. Instead of coating the car's entire underside with a sealing compound, seal only where needed: a huge $2 savings despite the extra robot required.*
>
> *Toyota says such changes won't hurt quality; before, it says, it did more than was necessary.*
>
> *Japan's other mantra these days is 'Value Engineering' -- taking a scalpel to waste at the design stage. It's an old technique for eking out dozens of tiny gains that Japanese companies are using with renewed vigor. Toyota, for example, has started injecting rubber into its brake boosters, the hydraulic cylinder that a brake pedal activates, rather than inserting two pieces of rubber. Result: Subassembly time is down by one minute. Toyota now even cuts sheet metal for stamping to the centimeter, rather than leaving a tiny margin for trimming later.*
>
> *Production lines are also being simplified. Nissan, for example, says it improved productivity a targeted 10 percent on 1993 models, mainly through seemingly mundane changes. Bolts on the engine mounts, gas tank, and radio that workers used to twist on from below are now tightened from above. Panels are marked to show where brake tubes and fuel hoses should be attached. And hooks now hold a car's air blower, heater, and sun visor so a worker can attach them with only one hand.*

In 1987, seventeen of the top twenty leading Japanese industrial firms had Value Engineering executives at the Vice Presidential level. Hitachi had 250 Value Engineers.

The French Ministry of Industry promotes VE in government and private industry, and VE training, modeled after that in America, is available from high school through postgraduate levels. French VE training efforts reach 140,000 students a year; in the USA, for comparable level students, the number is probably under 1,000. VE gets support from the top in these countries, and the results are a better thought-out, better run process.

In India one VE study rearranged a private, nationwide parcel delivery communications system, and thus increased productivity by at least 25 percent. Also, VE in India has broad support by industrial leaders. The "Lee Iacocca" of India, the head of Tata Steel, is also the President of the Indian VE Society.

Still, some of the most impressive applications of Value Engineering occur in American-based projects or companies. Some examples:

- A Defense Electronics Supply Center saved $953,000 by reducing the cost from $10,109 to $576 each on 100 purchases of a circuit board. They generated new drawings and increased the number of bidders.
- Hughes Aircraft Company has saved over $1.6 billion during the past 25 years.
- A New Jersey Superfund project reduced the cost of a $39 million project by $3 million by redesigning the wastewater treatment facility.
- Martin Marietta Missile Systems has tallied over $1 billion in the past ten years.
- General Dynamics Corporation this past year saved $8.6 million in land systems (tanks) and on the F-16.
- LTV's Aerospace & Defense Company, Missiles Division, had rocket-related savings this past year of $12.7 million, and nearly $24 million by the end of the decade.
- Westinghouse Electric Corporation's Value Engineering study of a fire control radar system netted $350 million.

MORE EXAMPLES OF VE SUCCESS STORIES IN THE UNITED STATES

Here in the US the fastest growing area of the uses of the VE methodology is in service/management. From the 1940s through the 1960s, VE was uniquely used in manufacturing. In the 1960s it was adapted to construction. In the past decade it has blossomed in management where the largest savings often are hiding.

Management VE studies can aim at the handling of paper work. For example, storage and document retrieval often calls for copies that are stored and never used. How many fulfill a previous need no longer valid?

VE still has a consistently impressive record in its traditional applications, too. Over the past twenty years of so, typical savings in construction projects have averaged five percent or more of the project construction budget. In the past few years, the Navy and Army construction arms have generated over six percent savings. For example:

- The Army Materiel Command tallied $4 billion over the past four years.
- The Air Force netted $346 million in FY 91.
- The Defense Logistics Agency saved $124 million in the past fiscal year.
- The Naval Facilities Engineering Command has amassed more than $1 billion during the past seven years.
- The Army Corps of Engineers since 1964 has saved $2 billion.
- A $243,235,000 bayou flood damage prevention design was Value Engineered and saved $45,718,955 by using a different channel mat permitting less costly slopes, and a relocation of channel-end improvements.

- A Pacific Ocean $9,280,300 hazardous material facility had six Value Engineering proposals to save $1,750,000 by changing the enclosure areas and reducing the number of spillage tanks -- all while meeting the safety criteria.

The ratio of Value Engineering savings to Value Engineering costs in construction is traditionally better than ten dollars saved for each Value Engineering dollar spent, including all expenses such as time and support. In the 1987 Value Engineering Senate hearings, the EPA (which is the only federal agency now required by law to perform Value Engineering) returned $34 for each Value Engineering dollar spent -- a Return On Investment (ROI) of 34-to-1.

The City of New York's Office of Management and Budget in the same Value Engineering hearings reported Value Engineering five-year savings of $114 million on $900 million of construction projects. This was accomplished for Value Engineering expenditures of only $1.2 million. This is a savings ratio of 114/900 or 11.6 percent of the total project budget. This is a Return on Value Engineering Investment of 114/1.2 or $95 saved for each Value Engineering dollar spent.

VALUE ENGINEERING: IT'S TIME TO ACT.

AN EXCELLENT SOURCE OF EXPERT OPINION AND ACCURATE AND CURRENT INFORMATION ABOUT VALUE ENGINEERING IS HAL TUFTY, PRESIDENT OF THE MILES VALUE FOUNDATION AND EDITOR/PUBLISHER OF VALUE DIGEST, A NEWSLETTER DEVOTED TO DEVELOPMENTS IN VALUE ENGINEERING. HE CAN BE REACHED AT (202) 347-8998. TRANSCRIPTS OF DR. PERRY'S REMARKS AND THE DOT REPORT FOLLOW.

Remarks made by Deputy Secretary of Defense William Perry at the Annual Honorary Awards for Value Engineering Achievements For Fiscal Year 1992

July 21, 1993, The Pentagon

A British writer, Graham Green, once wrote: "There always comes a moment in time when a door opens and lets the future in." The ending of the Cold War has opened that door for the United States and the future is out there waiting to come in. The challenge to the managers in the Defense Department is what we can do to help shape that future.

What we can do to restructure our Defense Department for the new era which we are now entering.

Professor Theodore Levitt of the Harvard Business School said that most managers manage for yesterday's conditions because yesterday is where they got their experience and made their successes, but management is about tomorrow, not yesterday. Most of you in this room, and certainly myself, have accumulated our management experiences during the Cold War, now we have a very different job. We must restructure the Defense Department for tomorrow's security problems which are very different from the problems of the Cold War.

The ending of the Cold War has not brought about an ending of history as forecast by Professor Fukuyama. The security problems we face in Bosnia, Iraq, and Somalia already are requiring military forces to be based there, and we continue to face problems in North Korea, and civil wars in the former Soviet Union that challenge our security.

So while the end of the Cold War has not brought about the end of history, it has very clearly brought about an end of the increasing Defense budget which we had during the late '70s and the '80s. The American public and the American Congress are both asking for peace dividends, and this has led a beginning in 1986 to a gradual reduction in the Defense budget which over the ten year period '86 to '96 looks like it will amount to about 40% reduction in real terms.

So our management challenge is how do we cope with very difficult security challenges which I just described to you with this dramatic reduction in resources. That is to say in the face of these budget decreases, how do we maintain the distinctive advantage which our forces had in Desert Storm. I would describe those advantages as three-fold: an advantage in people and leadership; an advantage in readiness; and an advantage in technology.

Now maintaining those advantages in the face of a 40% reduction in resources, we might be tempted to say as Winston Churchill in an exasperated tone once said to the British Parliament, "Do not ask me to take sides against arithmetic." And that's the arithmetic with which we are

confronted--40% reduction--and the problem we are confronted with is maintaining that distinctive advantage of our military forces.

Now how we take sides against arithmetic is the management challenge we face. And I would submit to you that there are three management imperatives to do that.

The first of those is that we will have to reduce the size of our force--we were, already under the Bush Administration, in the process of going from 2.1 to 1.6 million. Under the Clinton Administration we now are projecting going as low as 1.4 million.

A second of those is reducing the infrastructure: the bases, the depots, the Defense industry consolidation that is going on; all of those suggest that if we are reducing the budget and reducing the force size, the infrastructure needs to come down proportionally with that.

And then finally we have to be able to reduce the overhead in our system proportionate with these reductions.

The net result of this if we do it right is that while we will have a smaller force it will be a force with the same capabilities as our Desert Storm force, and a force that is ready to fight and win anytime that may be necessary. So our issue is how to spend these Defense resources wisely and that involves reducing the cost of doing business. But we just can't reduce the cost we have to maintain the performance at the same time we are doing that. And that brings us precisely to the theme of this whole meeting which is Value Engineering. Whether by reducing costs, increasing productivity, improving durability, reliability or maintainability, value engineering helps us to get that extra measure of value for the limited resources which we have.

Improvements that have been brought about by the people that we are here to honor today have been truly outstanding. We have had estimates that have over the past year there have been more than a billion dollars worth of cost savings that were generated by the value engineering program. This would have greatly pleased Larry Miles who was the GE Engineer who invented value engineering during World War II and for a very similar objective that we are looking at today.

2But you today represent Larry Miles' legacy and you also inspire all of the military and civilian personnel who are trying to improve our nation's defenses everywhere, everyday. So thank you and now let's proceed with the awards.

[In all, 25 awards were given for VE achievements in the Army, Navy, Air Force and the Defense Logistics Agency in seven categories: program management; individual; procurement/contract administration; Value Engineering professional; field command; installation; and contractor.]

Value Engineering on Federal-Aid Projects
A Report to Congress by The Secretary of Transportation

Pursuant to Section 1091 of the Intermodal Surface Transportation Efficiency Act of 1991 (Public Law 102-240)

Executive Summary

Value Engineering (VE), as used in the Federal Highway Administration (FHWA), is the systematic application of recognized techniques by multicisciplined team(s) which identifies the function of a product or service; establishes a worth for that function; generates alternatives through the use of creative thinking; and provides the needed functions, reliably, at the lowest overall cost. It is an organized application of common sense and technical knowledge directed at the isolation and elimination of unnecessary costs.

It has been in effect for nearly 20 years in the FHWA and is composed of 2 distinct programs which conform to the different organizational structures and objectives of the FHWA. The larger VE program applies to the Federal-aid highway program under which the funds authorized in Federal-aid highway acts are distributed to States for obligation by the FHWA on projects developed and administered by State highway agencies (SHA's). The other VE program applies to the Federal Lands Highway (FLH) Program and addresses the expenditure of Federal funds through direct Federal design and construction contracts.

For the Federal-aid highway program, the FHWA's VE policy has been to encourage SHA use of VE throughout highway project development, construction, operation, and maintenance. This policy is administered through education, encouragement, and technical assistance to States wishing to establish self-sufficient VE programs. The FHWA does not currently mandate VE studies on Federal-aid highway projects.

There is a wide range of acceptance and use of VE by SHA's. During the past 4 years, some 1,543 VE studies have been performed, resulting in over $615 million in savings. Overall, however, participation in VE has not been widespread. States fall into three categories: 7 States have "active" VE programs; 18 States have "inactive" VE programs; and the remaining States have "limited" VE programs.

In addition to VE studies, FHWA's State VE program includes the processing of contractor-submitted Value Engineering Change Proposals (VECP). A VECP allows a construction contractor to share in the cost savings resulting from a contractor initiated construction change made employing the VE process. The VECP portion of the VE program has had limited success in the Federal-aid highway construction program. Savings from contractors using VE change proposals have totalled $34.3 million over the past 4 years.

An analysis of the VE programs in the seven active States confirms that VE can be an effective cost reduction tool. The VE programs in these seven States have yielded a combined average of $79 million per year over the last 4 years. However, since most other States have limited or inactive VE programs, they gain very limited VE savings.

The VE program implemented by the FLH staff provides for the systematic review of its multiyear highway program to identify areas for VE studies. The direct program includes studies of projects, processes, procedures, specifications, and standards. Areas of study are selected to achieve the greatest savings while maintaining product quality. In the past 4 years, the FLH staff has conducted VE studies on over half of its design and construction program. This has resulted in a $44 million savings.

For VE to be successful, support for the VE process at all levels of management is needed. Additional emphasis must be placed on establishing State VE/VECP programs where none exist and on reviving VE/VECP programs that are struggling. In view of the substantial potential for cost savings that can be obtained through VE, FHWA proposes, in addition to continuing its VE training and promotion efforts, to require the use of VE in all States. The FHWA is considering the development of VE regulations, through the rulemaking process, to require all States to establish a VE process. It is anticipated that any proposed FHWA regulation would outline minimum VE requirements and provide appropriate guidelines for the establishment of State VE programs.

Lockheed
Fort Worth Company

P O. Box 748, Fort Worth, Texas 76101

17 November 1993

To Whom it may concern:

Re: H.R. 1331 the "Systematic Application of Value Engineering Act of 1993"

Lockheed Fort Worth Company (LFWC) supports the efforts of the U.S. federal Government and the U.S. Congress to promote the use of Value Engineering (VE) methodology for improving the efficiency of the federal agencies and the best use of our tax dollar.

Our management recognizes that employees are the most important resource of any business and VE is one of the management tools that our employees use to identify and remove the unnecessary cost and to improve competitiveness in the market place. Lockheed Fort Worth Company, formerly General Dynamic Fort Worth Division, has a 30-year history in the Value Engineering Program. Several thousand employees have been trained with the VE methodology for continuous improvement. The Value Engineering Change Proposal (VECP) savings to the federal Government and the internal cost reduction program amounted to several hundred million dollars on the F-16 program. The F-16 aircraft is currently operated by eighteen (18) countries. It is the most popular tactical aircraft in the world due to its affordability and high quality. The VE effort at LFWC contributed significantly to the cost effectiveness of the F-16 aircraft and the creation of thousands of jobs for the export market.

Value Engineering has a proven record in reducing the military acquisition cost at the Department of Defense. Lockheed Fort Worth Company supports the federal Government and private enterprise efforts to apply VE to stay competitive in this global economy. The passage of the "Systematic Application of Value Engineering Act of 1993" will not only ensure the most cost-effective use of our tax dollars but also help reduce our federal budget deficit. For information about the Value Engineering Program at Lockheed Fort Worth Company, contact Morris Scales, Engineering Project Manager, New Business and Value Engineering at 817-763-3918.

Approved for public release by Public Affairs,
Lockheed Fort Worth Company (817-763-4086)

JOY TECHNOLOGIES INC.
Mining Machinery Division

120 Liberty Street
Franklin, PA 16323
Phone: (814) 437-5731

THE JOY TECHNOLOGIES INC. STORY

Joy is an international corporation with manufacturing plants in the United States, United Kingdom, South Africa and Australia.

Its principal product is underground coal mining machinery which competes in the global market everywhere coal is found. Providing customers with high quality value intensive products at the lowest possible cost is a way of life at Joy; and the Value Engineering Program that has been in place, and constantly improving, since 1963 has been a key competitive strategy.

Management commitment manifests itself through formal corporate policies and procedures.

Savings results for fiscal year 1993 follow:

• Savings as a % Sales	4.0%
• $ Savings	$13 Million
• Employee Participation	65%
• Project Implementation Rate	84%

Joy's 30 year Value Engineering Program has helped earn two (2) distinctive awards, being:

- Joy Technologies received the first ever 'Excellence in Value Engineering Award) given by the Society of American Value Engineers (SAVE, 1987)

- Joy Technologies was twice named by Fortune Magazine as being one of only 100 United States companies named as the world's top competitor in markets they serve.

Thomas R. King, CVS

November 15, 1993

Alliant Techsystems Inc.
600 Second Street N.E.
Hopkins, Minnesota 55343

Telephone 612 939-2000

16 November 1993

Larry Zimmerman, CVS
President, Society of American Value Engineers
FAX (301) 384-1369

In response to your request, I'm forwarding the following information on our VE program which you may use in the upcoming Congressional hearings on Value Engineering legislation.

Benefits of Value Engineering at Alliant Techsystems

Alliant Techsystems has an active and successful Value Engineering program which has produced significant savings for our Government customers while helping to increase profits and improve competitive position for the company.

As a major developer and producer of defense products such as ammunition, torpedoes and other items, Alliant Techsystems has processed over 1,000 Value Engineering Change Proposals (VECPs) which have resulted in negotiated and definitized contract savings of over $175 million on Army, Navy and Air Force programs. We have participated in the DoD Value Engineering Program by effectively using the Value Engineering Incentive Clause in the Federal Acquisition Regulations (FAR) which has allowed us to propose changes to non-cost effective contract requirements and receive a share of the resultant savings. In addition, we have continuously applied the organized disciplines of the value engineering/value analysis approach to areas of our business that are not directly controlled by contract requirements and we have achieved "in-house" cost savings and cost avoidance that significantly exceed the contractual VECP savings.

Larry, if I can provide any additional information, please give me a call on (612) 931-5244 or FAX (612) 931-6512.

Sincerely,

T. Tam[illegible]earu, CVS
Value E[illegible]gineering Manager

TTS34

Marine Systems
Precision Armament Systems
Ordnance Systems
Information Storage Systems

TOTAL P.01

DoD VE Program

	In-house (VEPs) $M	Contractor (VECPs) $M	Total savings $M	In-house investment $M	Contractor investment $M	Total investment $M	In-house ROI	Contractor ROI	Total ROI
FY 83	1,219.0	132.5	1,351.5	61.8	15.6	77.2	19.8	8.5	17.5
FY 84	953.3	283.3	1,236.6	35.1	22.1	57.2	27.2	12.8	21.6
FY 85	1,680.7	339.9	2,020.6	67.0	21.6	88.6	25.1	15.7	22.8
FY 86	1,885.7	453.6	2,339.3	57.5	26.4	83.9	32.8	17.2	27.9
FY 87	2,658.8	558.1	3,216.9	98.2	31.7	130.9	26.6	17.6	24.6
FY 88	2,030.7	494.2	2,524.9	81.8	40.7	122.5	24.8	12.1	20.6
FY 89	1,231.1	216.8	1,447.9	47.1	27.2	74.3	26.1	8.0	19.5
FY 90	1,201.9	242.6	1,444.5	41.4	25.0	66.4	29.0	9.7	21.8
FY 91	699.5	398.7	1,098.2	30.0	142.2	172.2	23.3	2.8	6.4
FY 92	750.4	319.9	1,070.3	51.2	102.3	153.5	14.7	3.1	7.0
Total	14,311.1	3,439.6	17,750.7	571.9	454.8	1,026.7	25.0	7.6	17.3

Mr. PETERSON. Thank you very much. And our last witness, Mr. Prentice.

STATEMENT OF JEAN-PAUL PRENTICE, GOVERNMENT LIAISON COMMITTEE, ASSOCIATION OF TOTAL COST MANAGEMENT, ON BEHALF OF MICHAEL HOROWITZ, WASHINGTON, DC

Mr. PRENTICE. Thank you, Mr. Chairman. AACE International sincerely appreciates the opportunity to testify this morning concerning H.R. 133, H.R. 2014, and the OMB circular, A–131.

AACE International is a professional association dedicated to the optimization of resources, whatever those resources may be.

Consequently, our interest in H.R. 133, H.R. 2014, and OMB Circular A–131 cannot be overstated.

We also express our full support for any legislation which mandates the efficient implementation of value engineering or other resource optimization methodologies.

Statement of Unqualified Support for Mandated Value Engineering: AACE International expresses its unqualified support for mandated utilization of value engineering by Federal agencies. We believe it is historically clear that Federal agencies will not comply with OMB Circular A–131 in a fashion which optimizes the efficient use of value engineering as long as it is left solely to the agency's discretion.

Furthermore, OMB Circular A–131 is directed to some 400 Federal agencies who fall under the umbrella of the Government Operations Committee. There is no greater indictment of Federal agency noncompliance to OMB Circular A–131 than the fact that only 8 agencies have provided reports due December 31, 1993, on their value engineering activities as late as Friday, March 4, 1994.

H.R. 133 would require far more agencies to play a meaningful role in deficit reduction and the effective optimization of all resources at their disposal. The American taxpayer deserves no less.

We would like to also put forth some possible solutions for some of the agency concerns. One concern expressed by some Federal agencies is that mandated value engineering would not promote the effective use of value engineering, but cause money to be spent on unnecessary, unsuccessful, or inappropriate value engineering reviews.

Although we accept the concern as a valid one, there are several significant facts that should dampen concern over needless value engineering expenditures.

First, the most recent agency experience indicates that the opposite is true. Of the agencies reporting to OMB in accordance with the circular for 1993, the lowest reported return on investment is 8.6 to 1. That alone is a significant indicator that few unsuccessful value engineering reviews were attempted.

Second, H.R. 133 has sufficient means incorporated within it to alleviate the potential for unnecessary value engineering studies.

Among them are: (1) Section (b)(2)(B), allowing value engineering managers to establish the criteria under which they conduct the reviews; (2) section (b)(2)(C), allows them to establish the criteria under which the reviews would be waived; and (3) section (b)(8)(A),

which would allow the agency to identify projects, programs, or systems value engineering techniques would be applied upon.

Third, the economic viability of a value engineering study can sometimes be determined as early as the creative phase, which may be before major costs of the study are experienced.

Fourth, as long as the management opportunity exceeds 60 percent of the project, program, or system, the possibility of having a value engineering study that does not produce savings is highly unlikely.

Fifth, we took a poll, a telephone poll, of value engineering service providers. We did this in February 1994, and it would indicate also that agency concerns should be dampened.

When the poll providers were asked how many of their value engineering studies they conducted failed to provide savings greater than the cost of the study, only two reported a ratio lower than 20 to 1. They were 18 to 3 and 16 to 2. The best ratio during the poll was 50 to 1.

In closing, I would ask the committee to incorporate AACE International's full statement, as has already been stated by the chairman. We would hold a strong position in support of mandated value engineering studies. Thank you.

[The statement of Mr. Prentice follows:]

Jean-Paul Prentice, CCE
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Business (404) 806-1155 Fax (404) 806-0054 Residence (404) 399-0697

1 April 1994

Ms Cheryl Matcho, Clerk
Subcommittee on Legislation and National Security
B-373 Rayburn House Office Building
U. S. House of Representatives
Washington, D. C. 20515

RE: Written Statement Corrections

Dear Ms. Matcho:

Please make the following corrections to the AACE International written statement:

1) Page 2, paragraph 3,– "Furthermore, OMB Circular A-131 is directed to approximately 30 of the nearly 400 . . ."

Change to – "Furthermore, OMB Circular A-131 is directed to all of the nearly 400 . . ."

2) Page 2, last sentence – ". . . A-131, than the fact that only seven (7) . . ."

Change to – " . . . A-131, than the fact that only eight (8) . . . "

3) Page 5, last sentence – "We were advised that only seven (7) of the thirty (30) agencies who receive the circular had responded; Defense, . . . General Services Administration."

Change to – "We were advised that only eight (8) of the 369 agencies who receive the circular had responded; Defense, . . . General Services Administration and Treasury."

If you have any questions, please contact me. Thank you in advance for your time and kind consideration.

Sincerely,

jean-paul prentice

Jean-Paul Prentice, CCE

STATEMENT OF

JEAN-PAUL PRENTICE, CCE
AACE INTERNATIONAL GOVERNMENT LIAISON COMMITTEE

ON BEHALF OF

MICHAEL E. HORWITZ, PE CCE
PRESIDENT, AACE INTERNATIONAL

BEFORE THE

LEGISLATION AND NATIONAL SECURITY SUBCOMMITTEE
COMMITTEE ON GOVERNMENT OPERATIONS
UNITED STATES HOUSE OF REPRESENTATIVES

CONCERNING

H. R. 133
"SYSTEMATIC APPLICATION OF VALUE ENGINEERING ACT OF 1993"

AND

H. R. 2014
"VALUE ENGINEERING BETTER TRANSPORTATION ACT OF 1993"

AND

OMB CIRCULAR A-131
SUBJECT: VALUE ENGINEERING

ON

TUESDAY, MARCH 8, 1994

Jean-Paul Prentice, CCE
AACE International

Opening Statement

Mr. Chairman and Members of the Subcommittee:

AACE International sincerely appreciates the opportunity to testify this morning concerning H. R. 133, the "Systematic Application of Value Engineering Act of 1993," H.R. 2014, the "Value Engineering Better Transportation Act of 1993," and OMB Circular A-131 on Value Engineering. AACE International is a professional association dedicated to the optimization of resources, whatever those resources may be. Consequently, our interest in H. R. 133, H.R. 2014 and OMB Circular A-131 cannot be overstated.

We also express our full support for legislation which mandates the efficient implementation of value engineering or other resource optimization methodologies. Legislation which effectively reduces costs is desperately needed in view of America's debt crisis. To that end, we express our qualified support for H.R. 133 in its present form.

Statement Of Unqualified Support For Mandated Value Engineering

AACE International expresses its unqualified support for *mandated* utilization of value engineering by Federal agencies. We believe it is historically clear, that Federal agencies will not comply with OMB Circular A-131 in a fashion which optimizes the efficient use of value engineering, as long as it is left solely to the agency's discretion. Furthermore, OMB Circular A-131 is directed to approximately 30 of the nearly 400 Federal agencies who fall under the umbrella of the Government Operations Committee. There is no greater indictment of Federal agency noncompliance to OMB Circular A-131, than the fact that only seven (7) agencies had

Jean-Paul Prentice, CCE
AACE International

provided reports due December 31, 1993 on their value engineering activities as late as Friday, March 4, 1994. H.R. 133 would require far more agencies to play a meaningful role in deficit reduction and the effective optimization of all resources at their disposal. The American taxpayer deserves no less.

Possible Solutions For Agency Concerns

One concern expressed by some Federal agencies is that mandated value engineering would not promote the effective use of value engineering, but cause money to be spent on unnecessary, unsuccessful, or inappropriate value engineering reviews. Although we accept the concern as a valid one, there are several significant facts that should dampen concern over needless value engineering expenditures.

First, the most recent agency experience indicates that the opposite is true. Of the agencies reporting to OMB in accordance with Circular A-131 for 1993, the lowest reported Return On Investment [ROI] is 8.6:1.[1] That alone is a significant indicator that few unsuccessful value engineering reviews were attempted.

Secondly, H.R. 133 has sufficient means incorporated within it to alleviate the potential for unnecessary value engineering studies. Among them are: 1) section (b)(2)(B) allows the agency to set and amend the dollar amount threshold for requiring value engineering; 2) section (b)(2)(C) allows the agency's value engineering manager to establish criteria under which a value

[1] See Office of Federal Procurement Policy agency Value Engineering Reports for Fiscal Year 1993.

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engineering study may be waived; and, 3) section (b)(8)(A) allows the agency to identify the projects, programs or systems value engineering techniques will be applied upon.

Third, the economic viability of a value engineering study can sometimes be determined as early as the creative phase, which may be before major costs of the study are experienced. Fourth, as long as the management opportunity exceeds 60% of the project, program or system, the possibility of having a value engineering study that does not produce savings is highly unlikely.

Fifth, a telephone poll of value engineering service providers conducted in February 1994 also indicates that this concern should be dampened When polled providers were asked how many of the value engineering studies they conducted failed to provide savings greater than the cost of the study, only two (2) reported a ratio lower than 20:1; they were 18:3 and 16:2. The best ratio reported during the poll was 50:1.

Finally, the annual reporting requirements and Sunset Review of the bill provide the opportunity for the effective evolution of the rules and procedures governing the utilization of value engineering by Federal agencies, and State and Municipal governments grant recipients.

Specific Objections To H.R. 133

Our specific objections to portions of H.R. 133 are as follows:

1. "Qualified value engineering personnel" is not defined.
2. It appears that H.R. 133 directs the head of each Federal agency to require senior management personnel to establish and maintain value engineering procedures

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and processes *before* they receive value engineering training. We believe senior management personnel training should occur first.

3. H.R. 133 does not address the current practice by some Federal agencies who issue solicitations containing "sole source" certifications for value engineering services.

Specific Objections to H.R. 2014

Our specific objections to H.R. 2014 are as follows:

1. "Qualified value engineering personnel" is not defined.
2. The incentive portions of the bill are too easily manipulated and will probably result in incentive payments made outside the intent of the bill.

Specific Objections to OMB Circular A-131

Our specific objections to OMB Circular A-131 are as follows:

1. The circular does not mandate compliance on the part of all Federal agencies. Furthermore, the circular only goes out to approximately thirty (30) Federal agencies. We requested information from OMB's Office Of Federal Procurement Policy regarding the number of agencies that had complied with Section 9. Reports To OMB as of March 4, 1994. We were advised that only seven (7) of the thirty (30) agencies who receive the circular had responded; Defense, Interior, Justice, State, Transportation, Veterans' Affairs and the General Services Administration.

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Specific Objections to the Current Practice of Some Federal Agencies

Several Federal agencies require the Society of American Value Engineers Certified Value Specialist [CVS] certification. Among them are the Department of Defense, U.S. Coast Guard, Army Corps of Engineers; Bureau of Reclamation, USDA, Forest Service, Department of Interior, and the Department of Transportation, to name a few. The net affect of this practice is that value engineering services are solicited "sole source" to the Federal government, and to State and Municipal governments participating in Federal grant programs. Only a select group of persons may respond to solicitations.

This would certainly be acceptable if the "sole source" CVS certification was unique in some way, or provided a higher level of competence. However, that is not the case. The value analysis training received through AACE International and other organizations is equivalent to, and in some ways superior to that offered by the Society of American Value Engineers. Techniques of Value Analysis and Engineering by Lawrence D. Miles, the originator of Value Analysis and Engineering is utilized by both organizations. Functional Analysis System Technique [FAST] training is provided and utilized by both in value analysis. Education, competency exams, continuous training, periodic re-certification and work in the field requirements are prerequisite to certification maintenance in both groups. Consequently, we believe this "sole source" practice denies all other equally or better qualified cost professionals their citizenship right to participate in the free market enterprise, and is exclusionary. We do not believe a Federal agency has the right to "sole source" the beneficiary of the taxpayers' money

outside of a competitive process when national security interests are not a question.

Recent Cases Of Exclusion And Participation Denial

CASE NO. 1 – Party With Equivalent Certification and VE/VA Experience Denied The Opportunity To Respond To Solicitation For VE/VA Services

In January 1994, the Bureau of Reclamation, refused to accept a proposal from a qualified cost professional to provide value engineering services in accordance with an annually renewable five year value engineering services contract.

CASE NO. 2 -- Party With Equivalent Certification and VE/VA Experience Denied The Opportunity To Respond To Solicitation For VE/VA Services

On March 4, 1994, the Metropolitan Atlanta Rapid Transit Authority [MARTA] declined to accept a proposal from a local Atlanta MBE firm with equivalent certification to the "sole source" CVS certification solicited, to provide value engineering services on an annually renewable five year value engineering services contract. MARTA is the recipient of a Federal grant for portions of the work.

Potential Solutions

We offer the following potential solutions to the concerns expressed above:

1. Mandate the utilization of the American Society for Testing and Materials [ASTM] Standard Practice For Performing Value Analysis of Buildings and Building Systems in all applicable value engineering studies. Similar ASTM value analysis standards could be developed for administrative, management, production and manufacturing

applications.

2. Require that all cost professional certifications be accredited by a third party accrediting agency or organization. In this case, the Council of Engineering Specialty Boards [CESB] could accredit the Society of American Value Engineers Certified Value Specialist [CVS] certification. The AACE International Certified Cost Consultant [CCC] and Certified Cost Engineer [CCE] certifications are already accredited by the Council of Engineering Specialty Boards.

3. Utilize or create an umbrella certification, say "Cost Professional," for persons who could perform a wide range of resource optimization services, including value engineering, for Federal agencies and State and Municipal government grant recipients.

Conclusion

We recommend that H.R. 2014 be incorporated with H.R. 133, because it is redundant. Further, H.R. 133 should be amended in a fashion which addresses the foregoing concerns and specific objections. The legislation should especially forbid the practice by any Federal agency, of requiring a specific certification or title; or issuing a "sole source" solicitation, when any equivalent certification is available, unless all applicable certifications are specified; OR, the specified certification is followed by the phrase, "*or equal certification.*"

Mr. PETERSON. Thank you. I will thank all of the panel for accommodating us and moving through your testimony. We appreciate that.

We're going to have some questions that we will submit to you in writing. I think Mr. McCandless has some, too. But I have one or two here, and then if we have time, Mr. McCandless.

In your opinion, what steps must the Federal Government take to improve value engineering performance in its departments and agencies right now?

Mr. ZIMMERMAN. Mr. Peterson, a lot of the debate that goes on with value engineering when it's left up to the agencies is what they do and when they do it.

And part of the problem that's been related back to the people managing programs within government is continuity of a program, continuity of the people in charge, senior management representation, and the like. I think some of those things are important.

I think if a program is set in place, that immediately the action unfolds to make it happen. Those are things that I think are vital and important.

I think that there is education that needs to be done. We need to do education to highlight the features of value engineering as it needs to be applied in other agencies as well.

It's very well-known in construction, it's known in the manufacturing area. And there are two distinct areas in value engineering I should mention. One is VECPs, which allows a contractor to come in and put in ideas.

This is after a manufactured item is already in production, and this is in the construction field when the construction is taking place.

The second half of value engineering is applied as the program is being developed, and this is where the significant savings are being made. So I think one thing, as testimony goes on, there are two distinct areas that need to be kept in place.

Mr. PETERSON. Anybody else have a—Stan—have a response to that?

Mr. PRENTICE. One of the issues that was set forth in our statement was that it appeared that there was a lack of training on the front end when the senior management—before they actually set in place the processes and programs.

And we believe, in accord with what Mr. Zimmerman just stated, that you need to train those personnel first; then they have a much better idea of how—the senior management personnel I'm speaking about specifically—of how to go about setting the programs and processes in place.

Mr. BREZENOFF. This is extrapolating from an agency which is not Federal, but let me say that initially, when we introduced value management and value planning and value engineering within the Port Authority, there was considerable skepticism on the part of professionals that this in fact represented potential pay dirt.

It was very important to do a good job of persuading them at the outset as to the potential advantages to the agency. And now, as I believe the congresswoman noted, they are now the leading proponents of value engineering and value management.

Mr. PETERSON. Well, that kind of leads me to my next question. You know, we—question of how we get this done. How do all of you respond to Mr. Kelman's testimony that legislation is not needed at this time?

I mean, do you think that, given that kind of an attitude, that these things that you think need to happen are going to happen without legislation?

Mr. PRENTICE. Mr. Chairman, I don't think so. We have been calling into OMB for the last 1½ years, ever since the circular was first revised. And they don't get response from the agencies.

I discussed this with Mr. Coleman, who accompanied Mr. Kelman. OMB gets little response from the agencies.

I think the Treasury filed the report, but said, "We made no attempts."

Mr. QUERNS. Sir, virtually every value engineering reference or textbook you'll find starts out talking about people's resistance to change. That's very standard with value engineering studies, to echo earlier comments, that people think they do value engineering already when they really don't.

I heard the same comments at Kodak. "We don't need value engineering because we have extensive design reviews." That's partially correct, but not entirely. And I would agree with Mr. Prentice's and Mr. Zimmerman's positions on that.

Mr. PETERSON. Anybody think that this was going to happen without legislation at the table?

Mr. PRENTICE. No, sir.

Mr. PETERSON. Mr. McCandless, we've got 5 minutes, so it's all yours.

Mr. MCCANDLESS. Thank you. Mr. Rains, I'm going to start with you.

In reading what you gave us—and incidentally, all of your testimony is part of the record, and we'll be reading it or we have read it when it's been made available.

Are there examples where a value engineering review may not be appropriate or useful?

Mr. RAINS. I'm sorry, would you repeat that?

Mr. MCCANDLESS. Are there examples where a review, value engineering review may not be appropriate or useful?

Mr. RAINS. My experience has been, as we have used value analysis, we have increasingly found areas where it can be applied. We have—almost on a regular basis, we find nontraditional uses for value analysis.

So to directly answer your question, I haven't found—there have been very, very few instances where we have not applied value analysis or found out that it could not be applied.

Mr. MCCANDLESS. And does it always result in cost savings?

Mr. RAINS. No, it does not always result in cost savings. Sometimes we find out and it's good to learn that we could not improve the design or maybe we could, but the alternatives were not cost justified to implement.

But we have never had an unsuccessful team because we have always increased esprit de corps between team members, improved communication, everyone understood things a lot better than they did before.

So not every case have we achieved cost reduction, but we have never had an unsuccessful value analysis team.

Mr. MCCANDLESS. Mr. Zimmerman, would you comment on that?

Mr. ZIMMERMAN. In the field of construction, where I'm most familiar with, we have—I've done 450 VE studies, led them, and I know of none that have not had a return greater than the cost of our fee.

The only incidence that I know where it would come close to that is where an agency said that if you save money from the project at the 35 percent stage, we're going to slash your budget back to whatever that number is, not accounting for what may occur in the rest of the 65 percent design, at which case everyone starts defending their turf, which is—which was I don't think a very good position for that particular agency to take.

That's the only instance that I know of that it has not had the return. And our work is in Federal Government, and it is also in municipalities, similar to what it sounded like you may have come from as well.

We've done 250 studies on the Environmental Protection Agency's wastewater program. And part of the big benefit there was that back in the 1970's, when the clean water program was in its heyday, these projects were being built fast and furious, designed fast and furious, and some of them didn't work.

And the VE program as a second, objective overview of the work that was being done really helped to improve those, and the operability and the performance of facilities were increased as well.

Mr. MCCANDLESS. Mr. Querns, you're in a highly competitive business with production of your competitors overseas and so forth. Do you have any comments on the values and the cost savings?

Mr. QUERNS. Yes, sir. I don't think that cost savings, cost reduction is expected in every case. There are other benefits from value engineering, such as quality improvement, performance improvement, preventing rework, preventing scope increases, and other life cycle cost savings that cannot necessarily be defined as cost reduction.

And those are as important, in many cases, as cost reduction itself, especially to a company like Kodak, which is, as you say, in a very competitive environment today.

Mr. MCCANDLESS. Let me throw one out to the panel in the very short time we have left. Let's say that Mr. Peterson and I walk down to the Internal Revenue Service and say, we want you to do a value engineering job.

We're talking here about an entirely different type of activity than most of you have experienced here at the table.

Mr. Prentice, is that something that would work?

Mr. PRENTICE. Yes, sir, it will. As a matter of fact, I have a real interesting situation that has just recently happened.

We actually applied functional analysis to an administrative situation on contract compliance, and we were actually able to put costs into all the functions and come up with verb-noun associations to actually effect compliance. We weren't seeking specific cost savings. We were seeking implementation and compliance.

And we were actually able to do that. The IRS situation sounds relatively easy to me. I mean I don't know how some of the rest of the panel would feel about that.

Mr. GOLDSTEIN. I would just add to that one of the things that we——

Mr. MCCANDLESS. Would you identify yourself?

Mr. GOLDSTEIN. Yes. I'm William Goldstein, the deputy executive director at the Port Authority.

Mr. MCCANDLESS. Thank you.

Mr. GOLDSTEIN. That would be similar to what I assume an IRS procurement would be like, that we've done value engineering, value management analysis on systems projects, which I think lend themselves very nicely to this type of analysis.

The procurement process itself, where it may not be a major hardware procurement, but, for example, electronic toll collection at some of our bridges that we're looking at right now, I think that would be very appropriate.

Mr. MCCANDLESS. Thank you, gentleman.

Mr. PETERSON. I thank all of you for being with us and sharing your time and ideas and thoughts and answering questions. We appreciate it, and with that, the subcommittee is adjourned.

[Whereupon, at 12 noon, the subcommittee adjourned, to reconvene subject to the call of the Chair.]

APPENDIX

MATERIAL SUBMITTED FOR THE HEARING RECORD

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

THE DIRECTOR

May 21, 1993

CIRCULAR NO. A-131

TO THE HEADS OF EXECUTIVE DEPARTMENTS AND ESTABLISHMENTS

SUBJECT: Value Engineering

1. Purpose. This Circular requires Federal Departments and Agencies to use value engineering (VE) as a management tool, where appropriate, to reduce program and acquisition costs.

2. Supersession Information. This Circular supersedes and cancels OMB Circular No. A-131, Value Engineering, dated January 26, 1988.

3. Authority. This Circular is issued pursuant to 31 U.S.C. §1111.

4. Background. For the purposes of this Circular, value analysis, value management, and value control are considered synonymous with VE. VE is an effective technique for reducing costs, increasing productivity, and improving quality. It can be applied to hardware and software; development, production, and manufacturing; specifications, standards, contract requirements, and other acquisition program documentation; facilities design and construction. It may be successfully introduced at any point in the life-cycle of products, systems, or procedures. VE is a technique directed toward analyzing the functions of an item or process to determine "best value," or the best relationship between worth and cost. In other words, "best value" is represented by an item or process that consistently performs the required basic function and has the lowest total cost. In this context, the application of VE in facilities construction can yield a better value when construction is approached in a manner that incorporates environmentally-sound and energy-efficient practices and materials.

VE originated in the industrial community, and it has spread to the Federal Government due to its potential for yielding a large return on investment. VE has long been recognized as an effective technique to lower the Government's cost while maintaining necessary quality levels. Its most extensive use has been in Federal acquisition programs.

An August 1991 audit of VE in the Federal Government by the President's Council on Integrity and Efficiency concluded that more can and should be done by Federal agencies to realize the benefits of VE. Reports issued by the General Accounting Office and agency Inspectors General have also consistently concluded that greater use of this technique would result in additional savings to the Government.

5. Relationship to other management improvement processes. VE is a management tool that can be used alone or with other management techniques and methodologies to improve operations and reduce costs. For example, the total quality management process can include VE and other cost cutting-techniques, such as life-cycle costing, concurrent engineering, and design-to-cost approaches, by using these techniques as analytical tools in process and product improvement.

VE contributes to the overall management objectives of streamlining operations, improving quality, reducing costs, and can result in the increased use of environmentally-sound and energy-efficient practices and materials. The complementary relationship between VE and other management techniques increases the likelihood that overall management objectives are achieved.

6. Definitions.

a. Agency. As used in this Circular, the term "agency" means an executive department or an independent establishment within the meaning of sections 101, 102, 103(1) and 104(1), respectively, of Title 5, United States Code.

b. Life-cycle cost. The total cost of a system, building, or other product, computed over its useful life. It includes all relevant costs involved in acquiring, owning, operating, maintaining, and disposing of the system or product over a specified period of time, including environmental and energy costs.

c. Cost savings. A reduction in actual expenditures below the projected level of costs to achieve a specific objective.

e. Cost avoidance. An action taken in the immediate time frame that will decrease costs in the future. For example, an engineering improvement that increases the mean time between failures and thereby decreases operation and maintenance costs is a cost avoidance action.

d. In-house savings. Net life-cycle cost savings achieved by in-house agency staff using VE techniques.

e. Contracted savings. Net life-cycle cost savings realized by contracting for the performance of a VE study or by a Value Engineering Change Proposal submitted by a contractor.

f. Total Quality Management (TQM). A customer-based management philosophy for improving the quality of products and increasing customer satisfaction by restructuring traditional management practices. An integral part of TQM is continuous process improvement, which is achieved by using analytical techniques to determine the causes of problems. The goal is not just to fix problems but to improve processes so that the problems do not recur. Value engineering can be used as an analytical technique in the TQM process.

g. Value Engineering. An organized effort directed at analyzing the functions of systems, equipment, facilities, services, and supplies for the purpose of achieving the essential functions at the lowest life-cycle cost consistent with required performance, reliability, quality, and safety. These organized efforts can be performed by both in-house agency personnel and by contractor personnel.

h. Value Engineering Change Proposal (VECP). A proposal submitted by a contractor under the VE provisions of the Federal Acquisition Regulations (FAR) that, through a change in a project's plans, designs, or specifications as defined in the contract, would lower the project's life-cycle cost to the Government.

i. Value Engineering Proposal (VEP). An in-house agency-developed proposal, or a proposal developed by a contractor under contract to provide VE services, to provide VE studies for a Government project/program.

7. Policy. Federal agencies shall use VE as a management tool, where appropriate, to ensure realistic budgets, identify and remove nonessential capital and operating costs, and improve and maintain optimum quality of program and acquisition functions. Senior management will establish and maintain VE programs, procedures and processes to provide for the aggressive, systematic development and maintenance of the most effective, efficient, and economical and environmentally-sound arrangements for conducting the work of agencies, and to provide a sound basis for identifying and reporting accomplishments.

8. Agency responsibilities. To ensure that systemic VE improvements are achieved, agencies shall, at a minimum:

a. Designate a senior management official to monitor and coordinate agency VE efforts.

b. Develop criteria and guidelines for both in-house personnel and contractors to identify programs/projects with the most potential to yield savings from the application of VE techniques. The criteria and guidelines should recognize that the potential savings are greatest during the planning, design, and other early phases of project/program/system/product development. Agency guidelines will include:

(1) Measuring the net life-cycle cost savings from value engineering. The net life-cycle cost savings from value engineering is determined by subtracting the Government's cost of performing the value engineering function over the life of the program from the value of the total saving generated by the value engineering function.

(2) Dollar amount thresholds for projects/programs requiring the application of VE. The minimum threshold for agency projects and programs which require the application of VE is $1 million. Lower thresholds may be established at agency discretion for projects having a major impact on agency operations.

(3) Criteria for granting waivers to the requirement to conduct VE studies, in accordance with the FAR 48.201(a).

(4) Guidance to ensure that the application of VE to construction projects/programs and other projects/programs, will include consideration of environmentally-sound and energy efficient considerations to arrive at environmentally-sound and energy efficient results.

c. Assign responsibility to the senior management official designated pursuant to section 8a above, to grant waivers of the requirement to conduct VE studies on certain programs and projects. This responsibility may be delegated to other appropriate officials.

d. Provide training in VE techniques to agency staff responsible for coordinating and monitoring VE efforts and for staff responsible for developing, reviewing, analyzing, and carrying out VE proposals, change proposals, and evaluations.

e. Ensure that funds necessary for conducting agency VE efforts are included in annual budget requests to OMB.

f. Maintain files on projects/programs/systems/products that meet agency criteria for requiring the use of VE techniques. Documentation should include reasons for granting waivers of VE studies on projects/programs which met agency criteria. Reasons for not implementing recommendations made in VE proposals should also be documented.

g. Adhere to the acquisition requirements of the FAR, including the use of VE clauses set forth in Parts 48 and 52.

h. Develop annual plans for using VE in the agency. At a minimum, the plans should identify both the in-house and contractor projects, programs, systems, products, etc., to which VE techniques will be applied in the next fiscal year, and the estimated costs of these projects. These projects should be listed by category, as required in the agency's annual report to OMB. VEP's and VECP's should be included under the appropriate category. Annual plans will be made available for OMB review upon request.

i. Report annually to OMB on VE activities, as outlined below.

9. Reports to OMB. Each agency shall report the Fiscal Year results of using VE annually to OMB, except those agencies whose total budget is under $10 million or whose total procurement obligations do not exceed $10 million in a given fiscal year. The reports are due to OMB by December 31st of the calendar year, and should include the current name, address, and telephone number of the agency's VE manager.

The report format is provided in the Attachment.

Part I of the report asks for net life-cycle cost savings achieved through VE. In addition, it requires agencies to show the project/program dollar amount thresholds the agency has established for requiring the use of VE if greater than $1 million. If thresholds vary by category, show the thresholds for all categories. Savings resulting from VE proposals and VE change proposals should be included under the appropriate categories.

Part II asks for a description of the top 20 fiscal year VE projects (or all projects if there are fewer than 20). List the projects by title and show the net life-cycle cost savings and quality improvements achieved through application of VE.

Part III requires agencies to submit a detailed schedule of year-by-year cost savings, cost avoidances and cost sharing with contractors for each program/project for which the agency is reporting cost savings or cost avoidances. The aggregate total of all schedules shall equal the totals reported in Part I.A. of the annual report.

10. Inspectors General audits. Two years after the issuance of this revised Circular, Agency Heads shall ask the Inspectors General (IGs) to audit agency value engineering programs to (1) validate the accuracy of agency reported value engineering savings and (2) assess the adequacy of agency value engineering policies, procedures and implementation of this revised Circular.

Periodically thereafter, agency IGs should audit agency reported VE savings as the need arises.

11. Related Guidance. In general, value engineering investments should have positive net present value when discounted with the appropriate interest rate, as described in OMB Circular No. A-94, section 8.c. For detailed guidance on value engineering, refer to the appropriate sections of the Federal Acquisition Regulations.

12. Effective date and Implementation. This Circular takes effect within 30 days of its publication in the Federal Register. Heads of departments and agencies are responsible for taking all necessary actions to assure effective implementation of these policies, such as disseminating this Circular to appropriate program and other staff, developing implementation strategies and initiating staff training. Since these policies must be implemented in the Federal Acquisition Regulation (FAR), agencies should not duplicate the development of implementing procurement regulations being undertaken by the Federal Acquisition Regulatory Councils. However, implementation of these policies in the FAR must be accomplished within the time period specified below, with inclusion in agency solicitations and resulting contracts, as appropriate, to occur immediately thereafter.

Pursuant to subsections 6(a) of the Office of Federal Procurement Policy Act, as amended, (41 U.S.C. 401 et seq.), the Federal Acquisition Regulatory Councils shall ensure that the policies established herein are incorporated in the FAR within 180 days from the date this Circular is published in final form in the Federal Register. Promulgation of final FAR regulations within that 180 day period shall be considered issuance in a "timely manner" as prescribed in 41 USC 405(b)."

13. Sunset review. The policies contained in this Circular will be reviewed by OMB five years from the date of issuance.

14. Inquiries. Further information about this Circular may be obtained from the Office of Management and Budget (OMB), 725 17th Street, NW, Washington, DC 20503
Telephone (202) 395-6803.

Leon Panetta
Director

Attachment

Attachment: Page 1/3

AGENCY FISCAL YEAR XXXX
ANNUAL VALUE ENGINEERING REPORT

PART I.
Name, Title, Address and Phone Number of
Agency Senior Official Responsible for VE Program:

Agency VE Expenditures ($'s invested in VE this fiscal year): $_____

Dollar Share of Savings Provided to Contractors: $_____

Dollar Thresholds for each VE category (if different from $1 million):

TOTAL AGENCY NET LIFE-CYCLE COST SAVINGS ATTRIBUTABLE TO VE:

A. Summary of cost savings and avoidances recorded by category (See B. below):

	Cost Savings		Cost Avoidance		Total Savings +Avoidance	Grand Total In-house + Contractor Savings + Avoidance
	In-House	Contractor	In-House	Contractor		

B. Total Agency VE Net Life-Cycle Cost Savings and Cost Avoidances by Category:

Category	Cost Savings		Cost Avoidance		Total Savings +Avoidance	Grand Total In-house + Contractor Savings + Avoidance
	In-House	Contractor	In-House	Contractor		
1. Acquisition						
2. Administrative						
3. Other (be specific)						
a.						
b.						
c.						

C. Please describe the steps you have taken to validate the reported cost savings, whether through IG audit or other measures. Attach additional sheets, if necessary.

Attachment: Page 2/3

AGENCY FISCAL YEAR XXXX
ANNUAL VALUE ENGINEERING REPORT

PART II.

VE PROJECT DESCRIPTION

List the top 20 VE projects by name. Show the VE expenditures, VE savings, and VE cost avoidances. Describe any quality or other non-quantifiable improvements resulting from VE.

	VE Expenditures		Cost Savings		Cost Avoidance	
*PROJECT TITLE**	In-house	Contractor	In-House	Contractor	In-House	Contractor

*Description of Quality or other Non-Quantifiable Improvements:**

*Use additional sheets as necessary to include top 20 VE projects. Also, for each project listed, indicate what steps you have taken to validate the reported cost savings, whether through IG audit or other measures.

Attachment Page 3/3

AGENCY FISCAL YEAR XXXX
ANNUAL VALUE ENGINEERING REPORT

PART III

PROGRAM/PROJECT NAME: CONSTRUCTION OF JOHN DOE BRIDGE

	1994	1995	1996	1997	1998	1999	2000
1. Cost Savings:							
2. Cost Avoidance:							
3. Dollar Share of Savings Provided to Contractors:							
4. VE Expenses Attributable to this Program/Project (including a pro rata share of Salary/Expenses)							

5. For programs/projects not discussed in part II of the report, please discuss what steps you have taken to validate the reported cost savings, whether through IG audits or other measures. Attach additional sheets if necessary.

I

103D CONGRESS
1ST SESSION

H. R. 133

To require Federal agencies to apply value engineering, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JANUARY 5, 1993

Mrs. COLLINS of Illinois (for herself and Mr. CONYERS) introduced the following bill; which was referred to the Committee on Government Operations

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A BILL

To require Federal agencies to apply value engineering, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Systematic Application of Value Engineering Act of 1993".

SEC. 2. VALUE ENGINEERING REQUIREMENTS FOR FEDERAL AGENCIES.

(a) IN GENERAL.—Federal agencies shall apply value engineering consistent with subsection (b)(2) to, at a minimum, identify and implement opportunities to reduce cap-

ital and operation costs and improve and maintain optimum quality of construction, administrative, program, acquisition, and grant projects. The head of each Federal agency shall require senior management personnel to establish and maintain value engineering procedures and processes. Such procedures and processes shall, at a minimum—

(1) utilize qualified value engineering personnel consistent with paragraphs (1) and (4) of subsection (b);

(2) provide for the aggressive and systematic development and maintenance of the most effective, efficient, and economical arrangement for conducting the work of the agency; and

(3) provide a sound basis for the reporting of accomplishments to the Office of Management and Budget, the President, the Congress, and the public.

(b) AGENCY RESPONSIBILITIES.—To ensure that systemic value engineering improvements are achieved, each Federal agency shall, at a minimum, carry out the following:

(1) Designate a senior management official with a significant, well-documented background in value engineering as the value engineering manager within the agency, to oversee and monitor value engineering

efforts and to coordinate the development of criteria and guidelines referred to in paragraph (2).

(2) Develop criteria and guidelines for both agency employees and contractor employees to identify programs, projects, systems, and products with the greatest potential to yield savings and benefits from the application of value engineering methodology. The criteria and guidelines should recognize that the potential savings are greatest during the planning, design, and other early phases of program, project, system, and product development. The criteria and guidelines shall include the following:

(A) Consideration of return on the Government's investment in value engineering, determined by dividing the Government's cost of performing the value engineering function by the savings generated by the function.

(B) A dollar amount threshold for requiring the application of value engineering. The threshold shall be designed to ensure that value engineering is applied to—

(i) each program, project, system, and product of the agency that has a dollar value greater than the threshold; and

(ii) programs, projects, systems, and products comprising in the aggregate 80 percent of the budget of the agency.

For purposes of applying such a threshold, the dollar values of various programs, projects, systems, and products of an agency that have individual values below the threshold shall be aggregated if they utilize equivalent planning or design elements, are jointly administered, or are functionally equivalent.

(C) Criteria under which the value engineering manager of the agency may, on a case-by-case basis, waive the requirement of this Act to conduct value engineering studies, and procedures and requirements for documenting and maintaining records of the justification for each such waiver.

(3) Provide training (including practical experience) in established value engineering methodology to agency staff responsible for coordinating and monitoring value engineering efforts and to staff responsible for developing, reviewing, analyzing, carrying out, changing, and evaluating value engineering proposals.

(4) Ensure that funds necessary for conducting agency value engineering efforts are included in annual budget requests to the Office of Management and Budget.

(5) Document and maintain records of—

(A) programs, projects, systems, and products that meet agency criteria for requiring the use of value engineering techniques; and

(B) determinations (including the reasons therefor) that the recommendations resulting from a value engineering review should not be implemented.

(6) Except when inconsistent with this Act, adhere to the acquisition requirements of the Federal Acquisition Regulation, including the use of value engineering clauses in parts 48 and 52 for both prime and subcontractors.

(7) In the case of discretionary grants awarded by the agency, establish value engineering requirements, such as requiring grant applications to include a clause requiring the use of value engineering methodology by qualified value engineering personnel in the performance of the grant.

(8) Develop annual plans for using value engineering in the agency, which, at a minimum, identify—

(A) the agency and contractor projects, programs, systems, and products to which value engineering techniques will be applied in the next fiscal year; and

(B) the estimated costs of such projects, programs, systems, and products.

(9) Report annually to the Office of Management and Budget on value engineering activities in accordance with subsection (c).

(c) REPORTS TO OFFICE OF MANAGEMENT AND BUDGET.—

(1) IN GENERAL.—The head of each Federal agency shall submit to the Office of Management and Budget an annual report on the results of using value engineering in the agency. The report shall be submitted by February 15 of each year.

(2) CONTENTS.—The report required by this subsection shall include the following:

(A) The name, job title, address, telephone number, and any additional job titles of the agency's current value engineering manager.

(B) The Government's return on investment in value engineering achieved through actual implementation by the agency of recommendations adopted as a result of value engineering, calculated by dividing the amount of savings achieved through such implementation by the cost of performing value engineering reviews.

(C) The Government's potential return on investment achievable through value engineering, calculated by dividing the amount of savings achievable through the adoption of recommendations as a result of value engineering by the cost of performing value engineering reviews to produce those recommendations.

(D) A description of the application of value engineering to the agency's 20 programs, projects, systems, and products having the highest dollar value, including the net savings and quality improvements achieved through use of value engineering in those programs, projects, systems, and products.

(E) A listing of the criteria adopted by the agency pursuant to subsection (b)(2)(C) for waiving the application of the value engineering

requirements of this Act, and documentation of any waivers granted under the criteria.

(d) INSPECTOR GENERAL AUDITS.—The Inspector General of each Federal agency shall audit the savings reported by the agency in the second annual report submitted under subsection (c). Thereafter, the Inspector General of each Federal agency shall audit the reported savings every second year.

(e) DEFINITIONS.—For purposes of this Act, the following definitions apply:

(1) The term "Federal agency" has the meaning the term "agency" has under section 551(1) of title 5, United States Code.

(2) The term "savings" means a reduction in, or avoidance of, expenditures that would be incurred if programs, projects, systems, and products were not evaluated using value engineering techniques.

(3) The term "value engineering" means an organized effort, performed by qualified agency or contractor personnel, directed at analyzing the functions of a program, project, system, product, item of equipment, building, facility, service, or supply for the purpose of achieving the essential functions at the lowest life-cycle cost that is consistent with re-

quired or improved performance, reliability, quality, and safety.

(4) The term "life-cycle cost" means the total cost of a program, project, system, product, item of equipment, building, facility, service, or supply, computed over its useful life. The term includes all relevant costs involved in acquiring, owning, operating, maintaining, and disposing of the program, project, system, product, item of equipment, building, facility, service, or supply over a specified period of time.

(f) EFFECTIVE DATE.—This Act shall take effect on January 1, 1994.

(g) REVIEW.—The Director of Management and Budget shall review the policies contained in this Act 5 years after the date of the enactment of this Act and shall report the results of such review to Congress.

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103D CONGRESS
1ST SESSION

H. R. 2014

To amend title 23, United States Code, and the Federal Transit Act to provide an increased Federal share for projects which have a cost of $2,000,000 or more and to which value engineering is applied and results in a certain minimum project cost savings.

IN THE HOUSE OF REPRESENTATIVES

MAY 6, 1993

Ms. BYRNE (for herself, Mr. BOUCHER, Mr. FINGERHUT, and Mr. MORAN) introduced the following bill; which was referred to the Committee on Public Works and Transportation

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A BILL

To amend title 23, United States Code, and the Federal Transit Act to provide an increased Federal share for projects which have a cost of $2,000,000 or more and to which value engineering is applied and results in a certain minimum project cost savings.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Value Engineering Better Transportation Act of 1993".

SEC. 2. TITLE 23, UNITED STATES CODE.

Section 120 of title 23, United States Code, is amended by adding at the end the following:

"(j) INCREASED FEDERAL SHARE FOR VALUE ENGINEERING.—

"(1) IN GENERAL.—The Federal share payable on account of any project or activity carried out under this title shall be increased—

"(A) by 5 percentage points—

"(i) if the project or activity has an estimated cost of $2,000,000 or more;

"(ii) if, before 35 percent completion of project or activity design, value engineering is applied to the project or activity;

"(iii) if the State in carrying out the project or activity complies with parts 48 and 52 of title 48 of the Code of Federal Regulations, relating to Federal acquisition regulations;

"(iv) if the State submits to the Secretary for approval a completed value engineering analysis, signed by a certified value specialist, of the savings resulting from application of value engineering to the project or activity, including changes

made in the project or activity design as a result of such value engineering; and

"(v) if the Secretary determines that application of value engineering to the project or activity reduces the cost of the project or activity by 5 percent or more; and

"(B) by an additional 5 percentage points if the determination made by the Secretary under subparagraph (A)(v) is that application of value engineering reduces the cost of the project or activity by 15 percent or more.

"(2) LIMITATIONS.—

"(A) MAXIMUM FEDERAL PERCENTAGE.—Notwithstanding paragraph (1), the Federal share payable for any project or activity carried out under this title shall not exceed 100 percent of project or activity cost.

"(B) MAXIMUM FEDERAL DOLLARS.—Notwithstanding paragraph (1) and subparagraph (A), the amount of Federal funds payable on account of a project or activity under this title as a result of application of this subsection to the project or activity shall not exceed the amount of Federal funds which would have

been payable on account of the project or activity under this title but for this subsection.

"(3) PROHIBITION ON TRAINING.—No Federal funds may be used to provide training for carrying out value engineering under this title.

"(4) VALUE ENGINEERING DEFINED.—For purposes of this subsection, the term 'value engineering' means a systematic process of review and analysis of a project or activity during its design phase by a multidisciplined team of persons not originally involved in the project or activity in order to provide suggestions for reducing the total cost of the project or activity and providing a project or activity of equal or better quality. Such suggestions may include a combination or elimination of inefficient or expensive parts of the original proposed design for the project or activity and total redesign of the proposed project or activity using different technologies, materials, or methods so as to accomplish the original purpose of the project or activity.".

SEC. 3. FEDERAL TRANSIT ACT.

Section 12 of the Federal Transit Act (49 U.S.C. App. 1608) is amended by adding at the end the following:

"(n) INCREASED FEDERAL SHARE FOR VALUE ENGINEERING.—

"(1) IN GENERAL.—The Federal grant for any project to be assisted under this Act shall be increased—

"(A) by 5 percent of the net project cost—

"(i) if the project has an estimated cost of $2,000,000 or more;

"(ii) if, before 35 percent completion of project design, value engineering is applied to the project;

"(iii) if the grant recipient in carrying out the project complies with parts 48 and 52 of title 48 of the Code of Federal Regulations, relating to Federal acquisition regulations;

"(iv) if the grant recipient submits to the Secretary for approval a completed value engineering analysis, signed by a certified value specialist, of the savings resulting from application of value engineering to the project design, including changes made in the project as a result of such value engineering; and

"(v) if the Secretary determines that application of value engineering to the

project reduces net project cost by 5 percent or more; and

"(B) by an additional 5 percent of the net project cost if the determination made by the Secretary under subparagraph (A)(v) is that application of value engineering reduces net project cost by 15 percent or more.

"(2) LIMITATIONS.—

"(A) MAXIMUM FEDERAL PERCENTAGE.—Notwithstanding paragraph (1), the Federal grant for any project assisted under this Act shall not exceed 100 percent of the net project cost.

"(B) MAXIMUM FEDERAL DOLLARS.—Notwithstanding paragraph (1) and subparagraph (A), the amount of Federal funds which may be expended under a Federal grant under this Act for a project as a result of application of this subsection to the project shall not exceed the amount of Federal funds which would have been available for expenditure under such a grant for the project but for this subsection.

"(3) PROHIBITION ON TRAINING.—No Federal funds may be used to provide training for carrying out value engineering under this Act.

"(4) VALUE ENGINEERING DEFINED.—For purposes of this subsection, the term 'value engineering' means a systematic process of review and analysis of a project during its design phase by a multidisciplined team of persons not originally involved in the project in order to provide suggestions for reducing the total cost of the project and providing a project of equal or better quality. Such suggestions may include a combination or elimination of inefficient or expensive parts of the original proposed design for the project and total redesign of the proposed project using different technologies, materials, or methods so as to accomplish the original purpose of the project.".

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EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

OFFICE OF FEDERAL
PROCUREMENT POLICY

April 7, 1994

Honorable John Conyers, Jr.
Chairman, Committee on Government
Operations
U.S. House of Representatives
Washington D.C. 20515-6143

Dear Mr. Chairman:

Enclosed are responses to follow-up questions of March 10, 1994, from the Subcommittee on Legislation and National Security hearing on March 8, 1994, regarding Value Engineering. If you have any questions or concerns, please contact Mr. Robert M. Cooper, of my staff, at 202-395-4545.

Very truly yours,

Steven Kelman
Administrator

Enclosure

VE: POST HEARING (3/8/94) FOLLOW-UP QUESTIONS

1. Are agencies establishing and improving use of VE programs as a result of Circular A-131?

Yes. The revised Circular May 21, 1993 added the requirements for agencies to develop annual plans identifying both in-house and contractor projects, programs, systems, and products and their estimated costs; and report annually to OMB on thresholds, expenditures, savings, and their top twenty projects. Points of contact have been designated at the agencies, and annual reports indicate significant savings being achieved. Three major agencies (DoD, GSA, HHS) showed dramatic improvement in 1993 savings over 1992.

2. Ability of OFPP to verify compliance with A-131.

A. Current efforts to determine agency compliance consist of the annual agency reports and knowledge that VE clauses are required in all supply, service, and construction contracts over $100,000 by FAR Part 48.2.

B. It is unlikely there is useful information beyond that contained in the annual agency reports. However, to improve responsive of these reports OFPP plans:

to convene a meeting of the agency points of contact to discuss improving both the content and timeliness of these reports.

C. OFPP anticipates that as a result of closer coordination with the agency points of contact the effectiveness of the Circular will be better assessed over time.

D. Full compliance with the Circular is a question of criteria. It must be within a standard of reasonableness and limited by the reality that VE is difficult to benchmark, as several witnesses testified. In terms of contract clauses, the annual agency reports, and maintaining a relative level of savings, "full" compliance to a reasonable standard can be determined and OFPP plans to pursue this compliance.

3. Evaluating agency performance.

(Please see response at 2D above.)

4. 1993 Reporting:

Of 14 cabinet agencies plus EPA, GSA, and NASA, ten reported (60%). Of these, half showed improvement over 1992. Further, only six agencies (DoD, DoE, NASA, HHS, USDA, and VA) account for approximately 90% of federal procurement. OFPP received reports from four of them (67%), and two (DoD and HHS) showed dramatic improvement over 1992. In addition, GSA showed dramatic improvement. All remaining agencies not yet reporting have been contacted and are preparing their submissions. The most common explanation for delinquency was that data is not yet in from numerous field offices. OFPP will:

continue to pursue delinquent reports until received.

5. Agency exemptions.

No agency should be entirely exempt from VE. However, it should remain in the discretion of the Agency Head to determine the legitimacy of waivers on a case-by-case basis.

6. Senior management support and goal setting.

The revised Circular has imposed new requirements on agencies to implement VE (please see response at 1 above).

However,we do not believe goal setting is practicable or desirable for reasons stated in our testimony regarding agency budget discretion, and inherent difficulties in benchmarking this type of effort which was confirmed in other testimony at your hearing (please also see response at 2D above).

7. Most effective agencies.

Based on 1993 reports, the agencies currently making the most effective use of VE are DoD, GSA, HHS, DOI, DOS, and NASA.

8. Not in compliance.

Based on annual reports for the past two years, and the mandatory FAR clause requirement, to our knowledge no agency is in non-compliance with the Circular. However, OFPP plans:

to press for sustained and increased compliance through meeting with the agency points of contact jointly to facilitate coordination, initiatives (alternatives) and improved reporting.

9. Not cost efficient?

No agency has reported to date that VE is not cost efficient. One reason for this may be that agencies have the discretion to tailor their programs, and that requirements under the FAR clause are voluntary and self-incantivized.

10. DOD.

Based on utilizing required FAR clauses and their annual report, DoD appears to be in full compliance, particularly since their savings increased dramatically in 1993.

11. FAR.

All agencies include the FAR required VE clause in supply, service, and construction contracts over $100,000. An indicator of this short of manually checking tens of thousands of contracts is that most agencies by now have automated their contract preparation to insure inclusion of mandatory clauses, which includes VE.

12. Please see our response at 11 above.

13. IG incentives?

The IG offices can incentivize compliance with Circular A-131 and FAR Part 48 with periodic audits. OFPP plans:

to write a letter to agency IG offices requesting they include confirmation of compliance with VE requirements in their contract and program audits.

14. IG penalties?

By implication in our response at 13 above, the IG offices can report instances of non-compliance in audits that are submitted to Agency Heads and to OMB for follow-up action.

15. How ensure potential?

A basic point in regard to potential is the inherent inability to "benchmark" performance in VE (please see our response at 2D above). However, that being said the inclusion of mandatory contract clauses, annual reports, senior management support, periodic IG audits, and the inherent incentive of savings will all work to promote implementation of VE and compliance with existing regulation and guidance.

16. Inflexible statute (waivers?)

Two points concerning codification:

A. As we testified, OMB generally opposes codification of Circulars because it deprives the Executive Branch of necessary management flexibility.

B. Agencies already have waiver authority under Circular A-131 at para 8b(3).

C. There is a further danger in codification in that not only will there be more oversight and micromanagement which is unlikely to be cost effective, but agencies may be impelled into a numbers game and pursue VE indiscriminately without regard to return on investment. This is why our position is that current regulation and guidance is adequate, particularly since the Circular revision is less than a year old, and five of the agencies reporting to date have showed improvement over 1992. We believe the prudent course at this time is to pursue the follow-up actions we propose in regard to points of contact, annual reports, senior management support, and IG audits. In addition, as we testified, OFPP proposes:

public recognition of VE success stories.

17. H.R. 2014.

The Office of Management and Budget (OMB) and the Department of Transportation (DoT) support H.R. 2014's goal of encouraging States to use value engineering (VE) to reduce program costs without sacrificing quality. DOT has been a strong advocate of VE. Current DOT policy, as stated in a Departmental Order, requires all grants for major transportation projects to strongly encourage the use of VE. The Federal Transit Administration (FTA) requires VE to be used for all major capital investments. The Federal Highway Administration (FHWA) engineers and private contractors have taught over 220 courses on VE since 1975. However, OMB and DOT have several serious concerns about H.R. 2014 and, therefore, do not support it. These concerns will be articulated in a letter to the House Committee on Public Works and Transportation, a copy of which will be provided upon signature.

DoT is considering an alternative approach to encourage greater use of VE. In accordance with its June 1993 report to Congress on VE, the FHWA is developing a regulation that would require all States to establish a VE process. It is anticipated that any proposed FHWA regulation would outline minimum VE requirements and provide appropriate guidelines for the establishment of State VE programs. We believe this approach would be effective in encouraging the use of VE, without creating a burdensome Federal process to review and approve VE analyses, and without the other disadvantages of H.R. 2014 being articulated in the forthcoming letter to the Transportation Committee.

18. Codification.

Please see our response at 16 above.

CHAIRMAN CONYERS' FOLLOWUP QUESTIONS TO HON. STEVEN KELMAN

1. OMB Circular A-131 requires each Federal agency to establish and improve their use of value engineering programs. Is the Circular effectively achieving this goal?

2. You testified that your office is unable to verify compliance with OMB Circular A-131.

   -- What efforts have your office made to determine the level of compliance with this directive?

   -- Why is this information unobtainable? What steps are you taking to improve OFPP's ability to verify compliance?

   -- If OFPP cannot determine compliance, how do you assess the effectiveness of the Circular?

   -- Is full compliance an unrealistic expectation? If so, why?

3. In what way do you evaluate the VE performance of Federal agencies?

4. What agencies filed reports documenting VE use as required by the Circular by December 31, 1993?

   -- Does OMB independently confirm agency reporting of their use of VE?

5. Should any Federal agencies be exempt from performing VE? If so, which ones? For what reasons?

6. In 1992, the Committee received testimony that among the reasons for noncompliance with Circular A-131 and slow progress in achieving VE benefits were lack of senior management support and poor goal setting on the part of the agencies.

   -- How does the revised Circular correct these problems?

   -- What agencies have designated a senior management official to oversee use of VE? Please list these agencies and officials.

7. What agencies are making the most effective use of VE?

8. What agencies are not in compliance with management practices outlined in the revised Circular A-131?

   -- What alternatives do they employ?

9. Are any agencies reporting that VE is not cost-efficient? For what reasons? How do you respond?

10. Is the Department of Defense in full compliance with the Circular? If not, what reasons do they give for not following your policy directives? Do you support their position?

11. What agencies actually include VE provisions as stated in the FAR in their contracts?

12. Which ones do not? What alternatives to they employ?

13. What incentives can agency IGs employ to enforce compliance with the Circular?

14. What penalties can agency IGs employ to enforce compliance with the Circular?

15. Without the ability to compel agencies to carry out OMB's directives, how does your office ensure that the full potential of VE benefits are being achieved?

16. In your testimony, a principle criticism of statutory VE requirements was that such legislation would be "inflexible".

    -- If legislation were enacted, would a provision enabling agencies to waive VE requirements when use of VE is deemed inappropriate address this concern? If not, why?

17. In testimony, you requested the opportunity to respond in writing to the position of your office on H.R. 2014 and other voluntary or incentive approaches to achieve implementation of VE at the Federal level.

    -- What is OMB's position on H.R. 2014?

    -- Would the adoption of a voluntary or incentive approach, similar to that provided in H.R. 2014, improve agency compliance? If not, why?

18. If OMB Circular A-131 is an acceptable and useful guide for use of value engineering by Federal department and agencies, how could legislation that codifies the Circular be made equally acceptable and useful?

THE PORT AUTHORITY OF NY & NJ

One World Trade Center
New York, N.Y. 10048

Stanley Brezenoff
Executive Director

(212) 435-7271
(201) 961-6600 x7271

April 4, 1994

Subcommittee on Legislation and
National Security
B-373 Rayburn House Office Building
Washington, D.C. 20515

Attention: Rosalind Jackson

Dear Ms. Jackson:

In response to Congressman Conyers letter of March 10, 1994, I have attached answers to the questions he raised. Based on information from staff, I have placed experiences with our Program in the broader context of the questions. In some cases, the information is based on fact and in some cases based on my opinions or the opinions of staff.

Thank you for the opportunity to share the successes of our Program with the Committee.

Sincerely,

Stanley Brezenoff
Executive Director

Attachment

ATTACHMENT

1a. To what do you attribute the success of your program?

The Value Management Program should report to top level executives in the organization. At the Port Authority, this is a "Value Board" made up of the First Deputy Executive Director, Chief Engineer, Assistant Executive Director for Budget, the sponsoring Line Department Director and Chaired by the Deputy Executive Director/Capital Programs. We also report the results to our Board of Commissioners. In short, we have brought V.E. to the Board Room. The program also has the active participation of senior operating, technical, and financial staff in structuring the scope of the analysis and team composition.

The participation of outside experts acting at a "professional arms length" brings fresh ideas and unbiased recommendations to add value and achieve functional goals and objectives, without the perception of hidden agendas or ulterior motives.

The synthesis of Value Management and Risk Assessment provides senior policy executives with the tools and information to make balanced, quality decisions. Rather than the Value Management Program being perceived as a bureaucratic hurdle, it has become a dynamic tool in the Port Authority to accelerate decision making and efficiently advance the capital program.

Value Management is applied early on in the project development cycle with the emphasis on achieving the best possible project to provide the necessary functions in the most efficient manner possible. This ensures the best response and timing to appropriately meet the need for a project. Significant cost savings are invariably achieved, both in initial construction costs and longer-term operation costs. Approaching a Value Management program with the single, simplistic goal of cost cutting can be self-defeating and ultimately undermine broader support for the program.

1b. Could Federal agencies ensure similar results?

Yes. Many Federal agencies and DOD departments already have active Value Engineering programs. However, it is our impression that they could benefit with more "top down" support and incorporate many of the above mentioned ideas to make value engineering a more effective program to implement their respective TQM initiatives. The classic definition of "quality is the essential character of something" which relates to making the appropriate expenditures on the design and implementation without making expenditures on unnecessary functions.

Also, many Federal programs involve Value Engineering Change Proposals (VECP's) in which contractors make post contract award changes based on certain value mandated guidelines and share in half of the savings. In our opinion, in certain specific cases this approach is warranted, however, generally it is too late to achieve the benefits from V.E. Rather, V.E. should be implemented during the earlier stages of a project to be most effective.

1c. In the absence of legislation, what steps must the Federal Government take to improve V.E. performance in its departments and agencies?

Agency heads must be convinced that it is in their best interest to implement a V.H. Program, not because it is a mandated Federal requirement but rather because of the benefits to their agencies. There could be initial reluctance to allow their projects to be subjected to V.E scrutiny because of fear that savings achieved would revert back to the central Federal budget and thus reduce their capital budgets. This problem could be mitigated by allowing the participating agencies to "recycle" the cost savings within their respective agencies to finance other necessary deferred projects.

2a. How do you respond to the claim that use of V.E may not be cost efficient in all cases.

The perception that V.E. is not cost efficient in all cases may be because V.E. is often used too late in the design and implementation process or with a single, simplistic focus of initial short-term savings. That approach could result in projects that do not provide necessary functions and/or involve increased operating and/or maintenance costs. It only takes one or two of those kinds of failures to impact the reputation of the program and increased resistence to its use. Our experience consistently proves that for V.E. to be cost efficient, it should be done early on in the project development cycle focusing on overall functions and then again later in the project focusing on the detailed technical functions.

2b. In your opinion, what type of projects benefit most from the application of V.E.?

Most of our experience has been with capital program construction projects. We also had success in applying V.E. methodology to projects involving complex systems integration and risk issues and to those projects experiencing administrative and organizational problems. However, although not our experience, we believe, that V.E. has traditionally been successfully applied to manufacturing and high-tech applications such as defense industry production. In summary, V.E. has a broad range of applications in which various types of projects can benefit.

2c. If Value Engineering works, shouldn't all public sector agencies use the techniques? If not, why?

As long as any public agency, or any entity, gets bogged down in a highly structured performance measurement system with emphasis on cost savings, the bureaucratic administration of the process can become an end in itself, thus giving V.E. a bad name. The process should involve all stake holders working together in an integrative, structured environment to achieve common goals and the needed functions efficiently. These stake holders include the end users, the financially responsible entities, the senior policy makers, as well as the technical staff. Too often, only the latter is involved - i.e. engineering and technical staff trying to cut cost in a relatively isolated environment.

2d. Should any agency, department, or procurement program be exempt from performing V.E.? What criteria would warrant such an exemption?

We cannot think of any reason why certain agencies should be exempt from V.E. However, certain agencies would benefit more from different applications of V.E. than others. For instance, an agency such as the IRS would benefit more from a system and process oriented V.E.; an agency such as HUD or DOT could benefit from capital construction applications of V.E.; while DOD agencies producing weapons systems or NASA with high tech applications would benefit from the traditional manufacturing type V.E. In any case, it is our recommendation that V.E. be applied as early in the conceptual and planning stage as possible.

3a. In your opinion, would an incentive approach, similar to that provided in H.R. 2014 improve agency compliance?

As we understand, the incentive concept in H.R. 2014 involves an increase in Federal funding percentages based on implementation of Value Management. We would be cautious about complex measurement systems and would reward only agencies or recipients of Federal funds that have implemented effective value management programs that meet certain quality criteria. For example: use of Certified Value Specialists (CVS's), incorporation of the VM workshop job plan, direction from senior management, interactive involvement of operations/technical/financial decision makers, integration with risk management, etc.

3b. Would codifying the Circular improve compliance?

Codifying compliance and establishing numerical performance measurements could cause overemphasis on numbers and not functions. However, compliance should be achieved without overdue emphasis on mandatory reporting procedures, measurements and excessive emphasis on introducing the perception of "another layer of government". V.E. should survive on its own merits as identified by top management not because of centrally planned mandated, codified compliance requirements. Again, direction and leadership should be "top down".

3c. Would mandatory V.E. requirement help or hurt your cost-savings objectives?

Although it is mandatory that all major projects be value and risk analyzed at the Port Authority, the emphasis is on better value and risk reduction and not necessarily cost savings. The program has evolved such that initially reluctant participants have became eager team players who welcome the benefits of using the V.E. program to enhance project quality. Another is the enhanced project development and analysis that our project sponsors undertake in preparation for Value Management reviews. This effect alone improve the projects prior to the Value Management. Again, however, in our experience this approach has engendered significant savings, probably much larger and with more durability than a similar program with cost cutting as the primary objective.

CHAIRMAN CONYERS' FOLLOWUP QUESTIONS TO STANLEY BREZENOFF

1. You have an exceptional history of VE performance and cost savings.

   -- To what to you attribute the success of your program?

   -- Could Federal agencies enjoy similar results?

   -- In the absence of legislation, what steps must the Federal government take to improve VE performance in its departments and agencies?

2. H.R. 133 has been criticized for its across-the-board application of VE requirements for all Federal agencies.

   -- How do you respond to the claim that use of VE may not be cost-efficient in all cases?

   -- In your opinion, what type of project benefits most from the application of VE?

   -- If Value Engineering works, shouldn't all public sector agencies use the technique? If not, why?

   -- Should any agency, department, or procurement program be exempt from performing VE? What criteria would warrant such an exemption?

3. What revisions would you make to OMB Circular A-131 improve its effectiveness? What about H.R. 133 and H.R. 2014?

   -- In your opinion, would an incentive approach, similar to that provided in H.R. 2014, improve agency compliance?

   -- Would codifying the Circular improve compliance?

   -- Would mandatory VE requirements help or hurt your cost-savings objectives?

LNS

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March 28, 1994

RECEIVED
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HOUSE COMMITTEE ON
GOVERNMENT OPERATIONS

Congressman John Conyers, Jr., Chairman
Legislation and National Security Subcommittee
Committee on Government Operations
B-373 Rayburn House Office Building
Washington, D.C. 20515

Dear Congressman Conyers:

In response to your letter dated March 10, 1994 requesting further information about the NYC OMB Value Engineering/Value Analysis (VE/VA) Program, I shall try to clarify our experience.

My comments loosely correspond to the questions submitted in your letter.

1. Our VE program's success is the result of several elements:
   - we strive to make all VE reviews collaborative with the sponsoring or user agencies.
   - we schedule our reviews at early design milestones that will provide the maximum opportunity for positive change and we use requirements contracts for VE consultants to minimize schedule impacts on capital projects.
   - we bring in team members and specialists of the highest calibre to insure recommendations will be credible and offer a fresh perspective.
   - we carefully manage our studies to include agency staff and users in order to address all project issues, challenge constraints where applicable, and get independent assessments of cost and schedule.

   With a similar commitment to the worth of the VE process, there is no reason to doubt federal agencies can achieve success as well.

However, it is important to include non-monetary criteria in the definition of success as well as cost reductions.

2. Obstacles to the principles of VE can be categorized generally into either human factors or structural impediments. People are resistant to change and defensive about being reviewed. These natural reactions can be overcome with skill and sensitivity. Structural problems are often more difficult. VE requires top level support. Senior management must want to know the true cost and issues associated with a project or they will not get it. If they do not accept bad news as well as good news, they will not get it, and then they will not know it early enough to remedy the problems.

NYC determined it wants to have true assessments of project costs, scopes and schedules. Some agencies, unfortunately, have sometimes had more focused missions i.e. to advance projects. Until each agency's mission includes a balance among cost management, programmatic efficiency and schedule concerns, and their performance is measured against them, agencies will not embrace VE since it takes some time and may challenge project assumptions or raise critical issues which require resolution. Projects benefit from this being done early enough to find appropriate and cost-effective solutions, but there is still resistance to even small delays. Where agencies have set up satellite VE programs, unless they are located at an appropriately senior level and independent of the design managers, their VE studies have been severely handicapped by filtered information and unnecessary constraints as to what elements of the project were subject to review.

3. Since I am not as knowledgeable about the relationships among agencies at the federal level, I shall describe the NYC arrangements and hope that your Subcommittee can draw conclusions about parallels or differences.

OMB must approve purchases of services, equipment, agency staff or capital work. The City Charter requires OMB approval of scopes for capital projects, and OMB has chosen VE as a methodology or framework within which to review and approve these scopes for major projects. Smaller (under $30 million) and more routine projects, generally get reviewed without VE. Because the OMB approval is required, agencies understand their participation is necessary, and so, even if their enthusiasm is lukewarm, they see VE as an accepted part of the project review process. As the time for the VE study approaches, design agency staff are invited to participate in the structuring of the VE team and to suggest areas of concern that an outside expert could be helpful addressing. Their issues, sometimes with OMB, or with another involved City agency, will get resolved through the VE forum. They begin to see its benefits. As the study occurs, the design agency managers see the VE process as a means to challenge their design consultants to raise the level of thoughtfulness and the quality of their analysis, which ultimately improves their projects.

The OMB program has done a Pareto's Law analysis of the City's capital program. Over 80% of the City's capital construction funds were associated with about 15% of the projects. This kind of analysis permits us to target our use of VE to a small subset of projects which nevertheless results in reviewing the majority of the program. Similar analyses of federal agency programs could be done to determine the most appropriate areas for VE review. In agencies where service delivery is

the mission critical function (as distinct from design agencies, where projects are the focus), the most staff-intensive or time consuming functional areas might be the logical opportunities for VA reviews.

Although City agencies do not have a choice on whether or not their largest and most complex capital projects will be subjects for VE, they are not required to do VA on agency processes. They are increasingly interested in doing so as a means of focusing decreasing resources in a more effective way.

Even though the NYC VE program conducts studies on projects on a non-voluntary basis, the decisions on implementation are impossible to mandate. Agencies and designers must be convinced of the merit of any proposed changes before they will be accepted and incorporated into the design. After all, the designer of record must be comfortable enough to work out the details and sign the plans, and the sponsor agency must be willing to live with any changes for the life of the facility. The bottom line is: VE can be mandated or not, but acceptance of the VE ideas cannot be required. Stronger incentives or gainsharing frameworks might increase the voluntary use of VE/VA. It is a bit of a "hearts and minds" issue in that agencies which have had positive experiences will likely continue to use the methodology, while agencies who haven't will try to avoid it.

The surest way to encourage the use of VE/VA would be to demonstrate its power with a sample of different types of studies which are relevant to the agency missions of select federal agencies and then to publicize the results broadly. Then each agency should be able to determine the appropriate elements of its mission which are mission critical and to strategically plan how to use VE/VA to optimize

these areas. The plan will be different for every agency and thresholds will vary as well. Flexibility in application would be key to such a program's success. If there is not some reporting mechanism, how will the government know if the program is effective? These requirements could be structured to not be burdensome. In fact, such reports might lead to agency rewards and/or recognition as examples of government that works.

I can heartily agree with Administrator Kelman that VE is just one among several management tools available to government managers which may be useful in containing costs and improving function. Its power lies in its function analysis and the use of multidisciplinary teams within a structured framework. The intensity of a focused workshop can often be the most expeditious way to gain consensus about changes. The other methodologies generally require a more lengthy ongoing relationship to be successful.

No one technique is appropriate for all agency analyses and change efforts. Agencies need a full menu of tools to choose from. And VE/VA is not mutually exclusive with the other tools.

A VE/VA program requires time to initiate and it will take time to absorb changes after each study. Expectations should be conservative as an agency begins its program. A centralized repository of annual reports on progress toward each agency's self-determined goals is worthwhile, and could provide a resource for agencies to share lessons learned.

I concur with Administrator Kelman that states and localities do not need additional requirements imposed on them as conditions to obtaining federal grants.

4. I would like to suggest that applying VE/VA to the lion's share of an agency's programs can be very flexible. I agree with Administrator Kelman that VE is project specific, but "project" can be defined broadly to include prototype or repetitive projects or standards, where one VE study's results cover a large number of current and future specific projects. Thoughtful application of VE can be quite efficient. Then there is the use of VA to review and streamline agency procedures or functions. For example, an agency may determine it has four mission critical activities which include many units and tasks. Four VE studies could therefore encompass more than 80% of the agency's program. I agree that agencies need broad latitude in determining the areas to focus on.

Not all projects or processes are equally amenable to VE/VA, therefore agency discretion is needed. VA should be used on clearly defined processes with a beginning and an end agreed to at the outset. The major parties should help plan the effort so that the analysis will include most labor-intensive parts. Tangential sub-loops can often be dealt with by procedural directives or changed forms. It is conceivable that some programs may be inappropriate candidates for VE, but I cannot think of any examples except routine equipment replacement purchases. Exemptions should not be the focus of the agency. The focus should be on seriously and thoughtfully carving up the agency's mission into finite subject areas for analysis.

I do believe all public sector agencies can benefit to a greater or lesser degree from wider use of VE/VA. The private sector has far wider application so far, and has used it to increase their competitive edge in the world economy - in response to Japan's head start. Japanese industries embraced VE decades back and many

analysts partly attribute their success in the automotive and electronics industries to the consistent use of VE.

5. Incentives similar to those proposed in H.R. 2014 would likely be attractive as long as they were voluntary. So would interagency incentives like gainsharing some of the savings between OMB and the agency who generated them.

I do not know the ramifications of codifying OMB circular A-131, so it is difficult for me to comment on whether this will improve compliance. The circular appears to be a comprehensive definition of VE terminology and offers encouragement to set up an active VE/VA infrastructure within each agency. I cannot comment on whether or not this is sufficient to make it a reality or whether some legislation may be required.

Thank you for your interest in the NYC VE/VA Program. I remain available to clarify these comments, if needed.

Very truly yours,

Jill Woller, CVS
Deputy Chief Engineer

JW/bma
CJH.2

CHAIRMAN CONYERS' FOLLOWUP QUESTIONS TO JILL WOLLER

1. You have an exceptional history of VE performance and cost savings.

   -- To what to you attribute the success of your program?

   -- Could Federal agencies enjoy similar results?

   -- What obstacles did you face in introducing VE precepts into your government's management style?

2. You indicated in your prepared statement that senior agency support is critical to a successful VE or VA program.

   -- Have you encountered resistance from top level managers in agencies? To what do you attribute their resistance?

3. Your agency counterpart in the Federal government is very resistant to mandatory VE requirements.

   -- What lessons can Congress learn from the NYC OMB program?

   -- In your opinion, are mandatory requirements the only way to achieve effective use of VE in the Federal government?

   -- How do you respond to Office of Federal Procurement Policy Administrator Kelman's testimony that legislation is not needed at this time?

   -- How would mandatory VE requirements help or hurt your cost-savings objectives?

   -- In the absence of legislation, what steps must the Federal government take to improve VE performance in its departments and agencies?

4. H.R. 133 has been criticized for its across-the-board application of VE requirements for all Federal agencies.

   -- How do you respond to the claim that use of VE may not be cost-efficient in all cases?

   -- In your opinion, what type of project benefits most from the application of VE?

   -- If Value Engineering works, shouldn't all public sector agencies use the technique? If not, why?

   -- Should any agency, department, or procurement program be exempt from performing VE? What criteria would warrant such an exemption?

5. What revisions would you make to OMB Circular A-131 improve its effectiveness? What about H.R. 133 and H.R. 2014?

   -- In your opinion, would an incentive approach, similar to that provided in H.R. 2014, improve agency compliance?

   -- Would codifying the Circular improve compliance?

North American Operations

March 30, 1994

Congress of the United States
House of Representatives
Sub-committee on Legislation and National Security
B-373 Rayburn House Office Building
Washington DC 20515
ATTENTION: Rosalind Jackson

Dear Ms. Jackson:

Please find enclosed my responses to the sub-committee's follow-up questions concerning H.R. Bill 133 and other legislation relative to Value Engineering.

I apologize for any inconvenience to you for an incomplete address. Hopefully now, that will not be a problem.

If I can be of any further assistance on providing any additional input to the sub-committee's on-going deliberations, please feel free to contact me.

Sincerely,

James A. Rains, Jr. CVS

Manufacturing Building • General Motors Corporation • 30300 Mound Road • Box 9040 • Warren, Michigan 48090-9040

1. To what do you attribute the success of your program?

Your first question, I believe is a very important question. Even within General Motors I have seen many VE programs come and go. I believe, I can pinpoint the reasons why many of them were not able to sustain themselves. Your question deals with how do you perpetuate a VE program. You will learn from this lengthy answer that I have researched this topic quite extensively.

Before I get into the basics of perpetuating VE, let me briefly talk about starting a VE program. (I am well aware that VE is not new to many parts of the Federal Government). Delco Chassis was not the first division within General Motors to adopt the use of VE to improve its business. In the late 1970's VE began to spread rapidly in GM, and in the fall of 1979, management decided to appoint a person to establish and structure a program for Delco Chassis. This was done with full executive support. In fact, at our first workshop, which included ten, seven person teams, each executive participated as a full-time member, before, during and after the workshop. That briefly, was the establishment of VE at Delco Chassis and I might add the easy part. Keeping it alive and surviving the test of time is another major and everlasting hurdle.

For Delco Chassis, the secret of VE perpetual use lies in six categories:
1. Positive selling,
2. Success,
3. Continuous improvement,
4. Management support,
5. Networking, and
6. Reputation.

The first, and most important, element of a successful program is positive selling. No one could maintain a livelihood or business without positive selling; you would not be successful by just waiting near your telephone for a potential customer to call. This is why selling is so important. You can have the best of everything, but if potential customers do not know you exist, they will not call.

The value engineers at Delco Chassis are not guaranteed customers. In fact, they consider themselves consultants to the division, with a product to sell. Anyone who works at Delco is considered a potential customer for our VE program. It is our value engineers' job to identify the wants and needs of customers, and to propose how VE can help these customers achieve their goals and solve their problems. This activity is continuous and relentless. Our value engineers are always looking for new ways to use value engineering and for new customers.

One additional point about selling. It is stated as positive selling, which is what our value engineers do. While everything is not perfect, and hornet's nests do turn up, a positive attitude about VE and what it does and can do, is essential.

The second ingredient to perpetuate VE is success. If an established VE program does not produce any early successful results, it will not survive. Creativity and innovation are not enough; you must have implementors. Implementation of meaningful projects takes an incredible amount of work and commitment. Prior to using VE, Delco had a very strong cost improvement ethic. Not lip service, but a truly involved and visible cost reduction process. This ethic and VE was a natural marriage. It made the implementation of proposals from our very first workshop a reality. In fact, over a dozen significant projects were implemented. Success breeds success, therefore this initial kick-start is a must.

Success at Delco is not just measured on the ledger sheet. We know VE fosters team work, improved worker attitudes, and improved relationships among our customers, suppliers and employees. Our hourly workforce has benefitted significantly from VE participation and involvement. Their initial reaction is thankful for being allowed to participate; they've made comments like, "nobody has ever allowed me to be creative before." But after a while what really sinks in, is a new attitude toward their job, an awareness that they can influence and have an impact on change. This attitude adjustment is one tremendous attribute of VE that can often go unnoticed.

The third ingredient is continuous improvement. Our value engineers know that their workshops must be changed and updated on a regular basis to maintain their effectiveness. Many team members repeat as participants and it is important to continually improve our presentation materials. While the VE job plan is essentially fixed, how it is presented is not. We also change our motivational and team building exercises.

Part of our continual improvement relates to our ability to apply VE to new areas. Examples of this include several recent projects which support the Quality Network process in General Motors. This is GM's total quality management process. They do not just emphasize cost reduction - quality improvements and more synchronous plants and offices are a result. It is often difficult to put a price tag on these types of improvements.

Delco Chassis has used VE to develop new prototype parts systems, communications systems and improved cost estimating systems. In fact, just recently our value engineers formed

three teams from five area hospitals and facilitated an exciting and successful workshop in an effort to begin controlling the escalating cost of health care.

Delco Chassis' fourth ingredient to perpetuate a VE program is constant and consistent management support. This support can range from a minimum of just allowing VE to happen, to a maximum of active involvement and participation. The executive management team at Delco Chassis is close to the minimum edge of that range. They are not involved in the day to day operation. The staff, however, does establish a divisional business plan - a plan that includes our vision, mission, objectives, goals and key strategies by which we will achieve our goals. VE is one of these key strategies.

At Delco, no one is told they must use VE; no mandates, no edicts. No salaries or bonuses are dependent on the use of VE. Its use is not dependent on the whims of a champion who is here today and gone tomorrow. Our VE staff has been in three staff areas, and has had three different managers, eight different staff heads and four different general managers. VE could not survive that much leadership change if it existed on mandates and edicts. The fact that the tool works and our value engineers do a great job of selling and of reaping successful results has convinced the Delco management team that VE exists because it is a powerful and useful tool to achieve Delco's goals and objectives.

One reason why many VE practitioners join the Society of American Value Engineers (SAVE) is to get out of the vacuum we work in and learn and share with others. This is called networking, and is the fifth ingredient to perpetuate VE. One large advantage for Delco Chassis is our ability to network with the entire General Motors organization. All the VE activity within GM is coordinated through the GM Corporate Value Management Committee. This committee is composed of volunteers from interested divisions of GM, and its purpose is to foster and promote the use of VE in the best interests of the corporation.

This networking deserves much of the credit for keeping VE alive at General Motors. I believe it is safe to say that without this informal, volunteer organization, VE would not have survived the test of time within GM to the extent that it has. Any organization within GM can receive the leveraged benefits of this huge resource to establish VE at its location.

The key here, is that the Federal Government can emulate this activity. Value practitioners from the several agencies could meet 3 - 6 times per year, with a set agenda to share ideas, discuss individual VE efforts (good or bad), VE results, and invite outside speakers to maintain an outside perspective of VE applications and techniques.

The last ingredient that perpetuates VE at Delco Chassis is a solid reputation. VE has a solid reputation, and our value engineers are respected for their excellent facilitator skills and VE knowledge. When your VE staff treats everyone as a customer and satisfies those customers, repeat business and perpetuation is guaranteed.

Some value engineers promise the world to their clients. They promise huge savings potential from workshops, they promise quick implementation, and they promise they can handle scores of teams. These promises are usually broken and then so is the credibility of VE. Our value engineers do not promise the world, but in most cases they do deliver what they promise.

Our group works with a vision. In June of 1990, our VE staff had such a vision, when, at the annual VE update with the Delco Chassis staff, the nomination of Delco for the "Excellent in Value Engineering" Award presented by SAVE was discussed. A decision was made to go for it. Receiving the award, almost a year later, was the result of that vision. But, more importantly, the award reinforces the fact that we are on the right track with VE at Delco Chassis, and that its continued and expanded use will help us reach our business plan goals and objectives.

Positive sell, successful implementation, continuous improvement, management support, networking and a solid reputation that delivers what you promise all add up to customer satisfaction, And customer satisfaction always wins.

Yes!!! the Federal agencies can enjoy similar results. Value Engineering, when used properly, is a very powerful tool. VE can be used for almost anything. It can be used by your subcommittee to help you decide how VE should be used in the Federal Government. We have used VE to help us at Delco improve our own VE program. Can the Federal Government save billions of dollars by implementing the use of VE? Yes!

In the absence of legislation, what steps must the Federal government take to improve VE performance in its departments and agencies? I believe the success elements described above would be the same for any organization that wants to improve its VE performance.

2. How is the private sector unique in its implementation of value engineering programs?

I do not believe that the private sector is unique in its implementation of VE programs. At least it doesn't have to be. Currently Federal agencies view VE as an added expense and added time factor. We essentially view VE as an expense saver and a time saver. The difference is in the approach that is used. When VE becomes a way of life and is used as a matter of course, rather than as an activity plugged into a chain of events as an addition, VE then is used as a primary tool to develop product designs, construction designs and improvements to systems and organizations. If done properly as you are in the development process you save the most time and the most money. The trick here is one must have faith that, that is really what is happening, since you have no base to compare your time and dollar savings to. (Unless you can have two similar projects; one using VE in the development stages and one not.)

What obstacles did you face in introducing VE precepts into your industry's management style?

As discussed earlier, at the time of introduction VE fit extremely well into our cost reduction efforts. We, like any organization had and still do encounter unbelievers, engineers that are not team players or feel that they are the only one who can design products. (The "not invented here" syndrome.) We just deal with these people straight on; continually challenging them. Many times they try to kill good ideas because it was not theirs, or because it causes them extra work. People are people. Individuals react different ways to each situation. Good value practitioners learn how to deal with this.

3. H.R. 133 has been criticized for its across-the-board application of VE requirements for all Federal agencies.

How do you respond to the claim that use of VE may not be cost-efficient in all cases?

This is a classic question. People who do not believe in the VE job plan will almost always get around to this question. My classic answer is, if I knew what benefit or result I would get by using VE then I would not need to do it. The key here is that one never knows what they will get until they get it. The opposite also holds true; one will not know if one will get nothing until a full effort is made and no results occur. This is not to mean that VE should be used haphazardly. but sometimes it is just as important to know that a product or design cannot be radically improved, as it is to come up with major improvements. In industry knowing that you cannot significantly improve a design , may lead to a decision to not get into or get out of a potential non-profitable position.

In your opinion, what type of project benefits most from the application of VE?

I touched on the answer to this question earlier. The greatest benefits are derived from upfront use in the development stages. This is true if you are dealing with the development of anything (products, processes, procedures, organizations or systems).

4. What revisions would you make to OMB Circular A-131 to improve its effectiveness? What about the two legislative proposals we are considering?

In your opinion, would an incentive approach, similar to that provided in H.R. 2014, improve agency compliance?

Would codifying the Circular improve compliance?

In general, I feel that I am not qualified to answer these questions. However, as a taxpayer I have one comment relative to any of these measures. VE can only save taxpayers money and/or reduce our deficit, if, dollars saved using VE or any other tool are reduced from future budgets. I understand that this would be a hard sell in Washington; what incentive is it to use VE if budgets get reduced. It is up to your subcommittee to create those incentives. There are really many ways to do this; however perhaps the subcommittee can brainstorm the function "create incentive". Do not stop being creative until you have at least 100 ideas on how to "create incentive". Do not evaluate at all until you are done brainstorming. This is how VE works. Try it!

CHAIRMAN CONYERS' FOLLOWUP QUESTIONS TO JAMES A. RAINS, JR.

1. You have an exceptional history of VE performance and cost savings.

   -- To what to you attribute the success of your program?

   -- Could Federal agencies enjoy similar results?

   -- In the absence of legislation, what steps must the Federal government take to improve VE performance in its departments and agencies?

2. How is the private sector unique in its implementation of value engineering programs?

   -- What obstacles did you face in introducing VE precepts into your industry's management style?

3. H.R. 133 has been criticized for its across-the-board application of VE requirements for all Federal agencies.

   -- How do you respond to the claim that use of VE may not be cost-efficient in all cases?

   -- In your opinion, what type of project benefits most from the application of VE?

4. What revisions would you make to OMB Circular A-131 improve its effectiveness? What about the two legislative proposals we are considering?

   -- In your opinion, would an incentive approach, similar to that provided in H.R. 2014, improve agency compliance?

   -- Would codifying the Circular improve compliance?

148 Bent Oak Trail
Fairport, NY 14450
18-Mar-94

Honorable John Conyers, Jr., Chairman
House of Representatives
Committee on Government Operations
Subcommittee on Legislation and National Security
B-373 Rayburn House Office Building
Washington, D.C. 20515-6143
Attention: Rosalind Jackson

Re: OMB Circular A-131, H.R. 133, and H.R. 2014

The following are my responses to Congressman Conyers followup questions with regard to the reference proposals:

1. To what do you attribute the success of your program?

   The success of the Kodak Value Engineering program is a result of top management support and participation. Research and development money was allocated to improve existing and new value management methodology (i.e., value graphs, technology roadmapping, systems dynamics of value).

   Kodak also has two world reknown experts that keep our expertise up-to-date and on the cutting edge of methodology. Kodak's Manufacturing Quality Assurance Organization also consults outside the company which broadens our experience base and credibility.

2. Could Federal agencies enjoy similar results?

   Yes, Federal agencies can enjoy similar results if federal programs receive similar top-down support, and if there are appropriate incentives in-place.

3. In the absence of legislation, what steps must the Federal government take to improve VE performance in its departments and agencies?

   In the absence of legislation, the Federal government may want to consider expanding Value Engineering Change Proposal incentives to all FAR contracts. Teams and individuals should be rewarded for using Value Engineering. Value Engineering studies should be funded by the same agencies that have responsibility for Value Engineering Implementation. Hold individuals accountable for not using Value Engineering, and for not utilizing the results of Value Engineering studies. Update training in modern value management.

4. How is the private sector unique in its implementation of value engineering programs?

   The private sector differs from public programs in Value Engineering implementation in that the private sector tends to use Value Engineering tools for value improvement, and not just for pure cost reduction. The private sector has blended Value Engineering with Quality Function Deployment and Voice-of-the-Customer analyses to allow for competitive analysis and benchmarking of new product designs. Value Engineering has also been used in the down-sizing process in addition to designing organizations for value.

5. What obstacles did you face in introducing VE precepts into your industry's management style?

   We faced the following obstacles in introducing Value Engineering to the Kodak management style:

   - There are other competitive methodologies perceived as doing the same thing as Value Engineering (i.e., the "we are already doing VE - we just don't call it that" syndrome).
   - It is difficult to get people to spend time on formal Value Engineering studies since project teams are perceived as already accomplishing the same ends as VE studies.
   - Engineers are under tremendous pressure to control costs, and view Value Engineering studies as adding to their costs. Their clients are less likely to accept proposals that include Value Engineering because the proposals are more costly than those without Value Engineering. The cost of Value Engineering studies is added to the cost of the project that is borne by clients.

6. How do you respond to the claim that use of VE may not be cost-efficient in all cases?

   Value Engineering may not be cost-efficient in all cases. However, cost reduction is just one variable in the value equation. The focus should not be on cost alone. Performance improvement is often more important. Delivery is also an important part of the value equation. Projects and Value Engineering cannot survive on just cost reduction. Value Engineering studies help eliminate rework, improve productivity, prevent unnecessary costs, and improve quality.

7. In your opinion, what type of project benefits most from the application of VE?

The types of projects that stand to benefit most from the application of Value Engineering include design of products, services, software, hardware, procedures, systems, machines, and organizations. Value Engineering is considered a design methodology. So it lends itself to design projects. At Kodak, Value Engineering was used to organize a worldwide division when the director found that his organization and budget did not fit his mission statement. So, we have seen savings in organization design and downsizing. Kodak has also seen tremendous savings in capital projects like machine design and construction, and in consumer-type products.

8. What revisions would you make to OMB Circular A-131 to improve its effectiveness?

The effectiveness of OMB Circular A-131 could be improved by eliminating the ambiguity associated with the term "where appropriate". As worded, agencies may be able to avoid Value Engineering because they don't know what it is, or because they have an outdated cost-reduction view of it. The circular also addresses the need for qualified people to lead Value Engineering teams. Teams should have qualified cost professionals to represent the percent cost parameter, and well-qualified managers to represent the percent importance parameter of the value ratio. Leadership of Value Engineering studies should not be restricted to Certified Value Specialists.

9. In your opinion, would an incentive approach, similar to that provided in H.R. 2014 improve agency compliance?

In my opinion, an incentive approach similar to H.R. 2014 would improve only the appearance of compliance. As I said in my testimony, I think there is potential for abuse of this kind of incentive. It is too easy to fabricate cost savings by inflating baseline cost estimates during conceptual engineering. A recommendation is for the government to fund the conduct of Value Engineering studies themselves, as opposed to providing additional funding based on calculations of questionable cost savings that may result from the studies.

10. Would codifying the Circular improve compliance?

I believe that codifying OMB Circular A-131 would increase federal agency usage of Value Engineering concepts. For example, Value Engineering Change Proposals are used extensively by companies that deal with the Department of Defense.

11. If legislation is enacted that codifies OMB Circular A-131, is it still necessary to clarify that Total Cost Management is an acceptable method?

Total Cost Management is the overarching science of managing costs throughout program life-cycles. It includes Value Engineering, and other economic analytical techniques. Total Cost Management includes numerous cost management issues that are not addressed by Value Engineering. I think the point is that if the intent of OMB Circular A-131 is cost reduction, then we should require consideration of the full range of cost management and not just one element of it.

Yes, it is necessary to specify Total Cost Management. However, it is neither technically correct nor appropriate to refer to Total Cost Management as just another management technique that can be used with Value Engineering. More proper wording would be to require Value Engineering "and the rest of the Total Cost Management methodologies as well".

In summary, Value Engineering should be codified. But, two points are key to achieving the goal of OMB Circular A-131.

- o Value Engineering benefits include more than just cost reduction.
- o Total Cost Management is the right tool to accomplish the full-range of cost reduction goals. Total Cost Management should be specified in OMB Circular A-131 in order to open the door to optimum gains in governmental operations improvement and deficit reduction.

Very truly yours,

Wesley R. Querns

Wesley R. Querns
Certified Cost Engineer
Project Management Professional
Certified Professional Estimator

CHAIRMAN CONYERS' FOLLOWUP QUESTIONS TO WESLEY R. QUERNS

1. You have an exceptional history of VE performance and cost savings.

   -- To what to you attribute the success of your program?

   -- Could Federal agencies enjoy similar results?

   -- In the absence of legislation, what steps must the Federal government take to improve VE performance in its departments and agencies?

2. How is the private sector unique in its implementation of value engineering programs?

   -- What obstacles did you face in introducing VE precepts into your industry's management style?

3. H.R. 133 has been criticized for its across-the-board application of VE requirements for all Federal agencies.

   -- How do you respond to the claim that use of VE may not be cost-efficient in all cases?

   -- In your opinion, what type of project benefits most from the application of VE?

4. What revisions would you make to OMB Circular A-131 improve its effectiveness? What about the two legislative proposals we are considering?

   -- In your opinion, would an incentive approach, similer to that provided in H.R. 2014, improve agency compliance?

   -- Would codifying the Circular improve compliance?

5. The Circular states that VE can be used with other management techniques and methodologies such as Total Quality Management, concurrent engineering, life cycle costing and others.

   -- If legislation is enacted that codifies OMB Circular A-131, is it still necessay to clarify that Total Cost Management is an acceptable method?

RMA
Rajan Mahima Associates, Inc., Consulting Engineers

July 20, 1994

Hon. John Conyers, Jr.
Chairman
Committee on Government Operations
Sub Committee on Legislation & National Security
B-373, Rayburn House Office Building
Washington, D.C. 20515

Reference: Your letter of 3/10/94

Attention: Ms. Cheryl Phelps

Dear Mr. Conyers:

Enclosed please find the answer to the questions in your above referenced letter.

If you have any questions, please do not hesitate to call.

Very truly yours,

R.Varadarajan, Ph.D., P.E.
COFPAES, Chairman

c.c. Nancy Parke
Brien Lorenze

416 Hungerford Drive, Suite 300 Rockville, Maryland 20850 (301) 294-6503 FAX (301) 294-2146

1. What Revisions would you make to OMB Circular A-131, improve its Effectiveness ?

   a. A-131 is sufficient as it stands.

   b. The current procedures outlined in A-131 are adequate.

   c. VE will be cost effective only in larger projects, with a construction cost of over five (5) million dollars.

   d. New designs will benefit more than rehabilitation designs with retrofit.

   e. Projects below five (5) million dollars should be exempt.

   f. Implement A-131 as it stands. Nothing more is needed.

2. a. The individual should be a registered professional with atleast ten (10) years of experience.

   b. COFPAES does not see a need for Statutory VE requirements.

CHAIRMAN CONYERS' FOLLOWUP QUESTIONS TO DR. RAJAN VARADARAJAN

1. What revisions would you make to OMB Circular A-131 improve its effectiveness? What about H.R. 133 and H.R. 2014?

   -- In your opinion, would an incentive approach, similar to that provided in H.R. 2014, improve compliance?

   -- How do you respond to the claim that use of VE may not be cost-efficient in all cases?

   -- In your opinion, what type of project benefits most from the application of VE?

   -- Should any agency, department or procurement program be exempt from performing VE?

   -- In the absence of legislation, what steps must the Federal government take to improve VE performance in its departments and agencies?

2. What should be the minimum level of achievement for someone to be able to perform value engineering at the Federal level?

   -- If this issue is not decided in your favor, would you still support statutory VE requirements?

Society of American Value Engineers

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July 26, 1994

Honorable John Conyers, Jr.
Congress of the United States
House of Representatives
Committee On Government Relations
2157 Rayburn House Office Building
Washington, D.C. 20515-6143

Responses to The House Subcommittee on Legislation and National Security of the Committee on Government Operations

1. What revisions would you make to OMB Circular A-131 to improve its effectiveness?

Legislate it! It's the only way.

- What about A-131?

I like the way it is written! HR2014? It should be part of HR133.

- In your opinion, would an incentive approach, similar to that provided in H.R. 2014, improve compliance?

I do not believe incentives would improve compliance as there is little incentive for government employees to save money or change the status quo. This is why it is so difficult to change. With a $4.0 trillion deficit, is there a question of the need to change? VE has nothing to prove! It continually improves quality cost performance, etc. Is this enough of an incentive?

- How do you respond to the claim that VE may not be cost efficient in all cases?

The limit for VE projects in HR 133 is set by the agency. By using 80% of agency budget requiring VE, the agency has control of the program. Lower thresholds for projects negate this potential. Of the 800 studies completed by our firm, we know of none in this category. We would hope the few projects referenced will be compared to the thousands that do show benefits.

A short personal note. Japan's manufacturing strength (electronics, automotive, plastics, film) was garnished through VE. Korea's rapid rise in manufacturing (electronics, manufacturing and shipbuilding) is though VE. Wake up! We are being buried by our own management technology advancements applied abroad.

- In your opinion, what type of project benefits most from application of VE?

All projects benefit from VE though communications, teamwork, function evaluation and creativity. Those benefiting most are complex, high cost, high risk or repeat projects. Note that VE is applied to more than projects.

- Should any agency, department or procurement program be exempt from performing VE?

No! Why should they not want to benefit from increased quality, efficiency and cost savings.

- In the absence of legislation, what steps must the Federal government take to improve VE performance in its departments and agencies?

1). Dissuade those that stand in the way of progress, quality, improvement and a need to save money. VE, if mandated, is the manager's best tool as they can apply VE internally, with outside help, etc. to achieve results.

2). Frustrated government VE managers must wrestle each new boss, commissioner or secretary for program support or funding. Half of their efforts are spent in this mode rather than doing the work. If you have talked to these dedicated people, they are big advocates for better government, but are thwarted by the constant turnover of management.

3). Do not stand for agency excuses such as 12 of 69 agencies responding on their VE reporting through A-131 requirements. Congress and the Senate need to let agencies know this is not acceptable! Legislation will help!

2. What should be the minimum level of achievement for someone to be able to perform value engineering at the Federal level?

- If this issue is not decided in your favor, would you still support statutory VE requirements?

Levels of achievement are observed in two areas: that of administration of a VE program and that of doing the actual value engineering work effort through facilitation of team studies. First, the administration of VE programs can be accomplished by intelligent, organized and motivated employees with a strong desire to improve the system, project, procedure, etc. Throughout government, there are hundreds of these folks who have administered VE programs and later achieved some sort of recognition or certification. The important thing

is to do VE wherever possible to improve what we do! Actual facilitation of VE studies, program development requires more skill. Here, a higher level of expertise is needed and is usually acquired through experience, and training. Achievement is not as important as attitude and people skills.

- If this issue is not decided in your favor, would you still support statutory VE requirements?

Yes, we would support statutory requirements and believe them to be necessary.

Respectfully Submitted,

Larry W. Zimmerman, P.E. FSAVE
Past President

CHAIRMAN CONYERS' FOLLOWUP QUESTIONS TO LARRY ZIMMERMAN

1. What revisions would you make to OMB Circular A-131 improve its effectiveness? What about H.R. 133 and H.R. 2014?

   - In your opinion, would an incentive approach, similar to that provided in H.R. 2014, improve compliance?
   - How do you respond to the claim that use of VE may not be cost-efficient in all cases?
   - In your opinion, what type of project benefits most from the application of VE?
   - Should any agency, department or procurement program be exempt from performing VE?
   - In the absence of legislation, what steps must the Federal government take to improve VE performance in its departments and agencies?

2. What should be the minimum level of achievement for someone to be able to perform value engineering at the Federal level?

   - If this issue is not decided in your favor, would you still support statutory VE requirements?

RESPONSE TO QUESTIONS

JEAN-PAUL PRENTICE, CCE
AACE INTERNATIONAL GOVERNMENT LIAISON COMMITTEE

ON BEHALF OF

MICHAEL E. HORWITZ, PE CCE
PRESIDENT, AACE INTERNATIONAL

PREPARED FOR

THE HONORABLE JOHN CONYERS, JR., CHAIRMAN
LEGISLATION AND NATIONAL SECURITY SUBCOMMITTEE
COMMITTEE ON GOVERNMENT OPERATIONS
UNITED STATES HOUSE OF REPRESENTATIVES

CONCERNING

H.R. 133
"SYSTEMATIC APPLICATION OF VALUE ENGINEERING ACT OF 1993"

AND

H.R. 2014
"VALUE ENGINEERING BETTER TRANSPORTATION ACT OF 1993"

AND

OMB CIRCULAR A-131
SUBJECT: VALUE ENGINEERING

ANSWERS TO QUESTIONS

The following postulates are set forth to avoid clouding answers to the specific questions posed. They represent important factors necessary for an in-depth understanding of the question and answer. The postulates also include considerations relevant to the *modus operandi* of the question's subject.

POSTULATE NO. 1

The primary impediment in the Federal government to the successful enactment of any mandated resource optimization legislation is the unique culture of the Federal bureaucracy. The major procedural impediment is the budgeting process.

An example of the budgeting process impediment might be as follows:

> The Department of Transportation realizes $1.5 billion in savings due to VE in 1994. Its 1995 fiscal budget request is reduced by $1.5 billion.[1] In order to alleviate the budget reduction, the agency manager must provide clear and convincing evidence that the $1.5 billion is needed in the agency's budget in order to meet *legislatively mandated responsibilities*. The justification efforts require considerable resources.

Consequently, agency chiefs have no incentive *whatsoever*, to engage in any management practice which realistically or apparently reduces that agency's budget.

POSTULATE NO. 2

Neither citizens, the Congress nor the President should expect the managers of Federal agencies to behave differently than managers in the private sector. To that end, agency managers should not be expected to implement methodologies which may have the immediate or long term affect of stripping them of their power, decreasing the size of the agency they manage, decreasing their authority or reducing the size of their agency budget without a mandate to do so, or some compelling interest which will perform those very tasks for those managers if

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[1] Vice-President Al Gore, National Performance Review, The Gore Report On Reinventing Government, (New York: Time Books, 1993), 15.

they fail to perform them.[2]

Peter Drucker also postulated that "neither managers nor departments will conduct business with a view to ridding themselves of their own authority and existence . . . [sic],"[3] which further complicates efforts to reduce costs in the Federal government.

POSTULATE NO. 3

OMB Circular A-131 is issued pursuant to 31 U.S.C. §1111. **Improving economy and efficiency.** The statute directs the President to, "(1) make a study of each agency to decide, and may send Congress recommendations, on changes that should be made . . ." and "(2) evaluate and develop improved plans for the organization, coordination, and management of the executive branch of Government." Clearly, the President is directed to perform tasks that require the full cooperation of Federal agencies. However, he is not given the power to mandate agency compliance. The President is directed to make a study, decide, evaluate and develop, ***but not implement.***

POSTULATE NO. 4

The question at the crux of the dilemma faced by all parties associated with H.R. 133, H.R. 2014 and OMB Circular A-131 are "*How do we make tax savings in government as important as profits in a private enterprise?*" and, "*Is there a way to reward cost performance without punishing government managers or perpetuating a numbers game which actually rewards deceit?*"

POSTULATE NO. 5

Cost reduction is not the only benefit sought in a value analysis. Improved quality, elimination of rework, functional improvements, identification of potential risks, scope increase prevention or other life-cycle savings, are other possible benefits, but none of them meet the FAR definition of "cost reductions."

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[2] Abraham Maslow, Motivation and Personality, (New York: Harper and Row, 1987).

[3] Peter Drucker, "The Coming Of The New Organization," Harvard Business Review, January/February 1988, 45-53.

QUESTIONS & ANSWERS

Questions

1. What revisions would you make to OMB Circular A-131 to improve its effectiveness? What about H.R. 133 and H.R. 2014?

Answer

The following revisions to OMB Circular A-131 would improve its effectiveness:

1) the force of law
2) mandated compliance
3) required VE training of management personnel before they begin to assume the responsibilities set forth in the circular; and,
4) a section which sets forth the required qualifications for cost professionals who wish to perform VE services.

The following revisions to H.R. 2014 would improve its effectiveness:
1) replace "signed by a certified value specialist" with "signed by a qualified cost professional" at (iv)on page 2.
2) Delete Section 2 in its entirety, with exception of "(4) VALUE ENGINEERING DEFINED."
3) Delete Section 3. FEDERAL TRANSIT ACT in its entirety.

H.R. 2014 is little more than a bill setting forth incentives for VE compliance. It should not be sent to the floor of the House with an affirmative recommendation. H.R. 133 sufficiently incorporates the scope of H.R. 2014 without the unmanageable incentives.

The following revisions to H.R. 133 would improve its effectiveness:
1) define "qualified value engineering personnel."
2) a section which sets forth the required qualifications for cost professionals who wish to perform VE services.
3) senior management accredited VE training prior to establishing VE procedures and processes.

Question

a) In your opinion, would an incentive approach, similar to that provided in H.R. 2014, improve compliance?

Answer

No. The incentive approach will not improve compliance to OMB Circular A-131 or H.R. 133 if enacted, because of the inherent contradiction between the budgetary process and incentive. If the agency successfully pursues the incentive, its budget will be reduced by the amount of VE savings realized. Effectively then, attaining the incentive deprives the agency of budgetary funding. Operatively, the "incentive" is a misnomer for "agency budget reduction."

Question

b) How do you respond to the claim that use of VE may not be cost-effective in all cases?

Answer

VE will not be cost effective in every case. However, there is substantial evidence that VE is not being applied in cases where its ability to provide substantial savings has been affirmed. During hearings before this committee in June 1992, A. Mary Schiavo, Inspector General of the U.S. Department of Transportation testified that:

> "We found the Government wide policy to encourage rather than mandate the use of value engineering in Federal grant programs continued to achieve only limited results. . . We concluded that Department of Transportation grantees did not effectively utilize value engineering, and missed opportunities for savings on grants related to $12 billion of highway construction projects; $1 billion of major rail and bus projects; and $1.3 billion of airport improvement projects."[4]

Question

c) In your opinion, what type of project benefits most from the application of VE?

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[4] A. Mary Schiavo, testimony before the United States Congress, House, Committee On Government Operations, The Systematic Approach For Value Engineering Act, Hearings before the Legislation And National Security Subcommittee of the Committee On Government Operations on H.R. 281, 102d Congress, 2d Session, June 23, 1992 (Washington: U.S. Government Printing Office, 1993), 35.

Answer

The type of projects that benefit most from VE are construction, manufacturing, industrial process industries, management and administrative studies; in order neutral. Although management and administrative areas are not replete with VE history, the methodology has a great following internationally in these areas. Japan, the United Kingdom, Korea and Germany are examples of countries who routinely employ VE in management and administrative studies.

Question

d) Should any agency, department or procurement program be exempt from performing VE?

Answer

No. Codification of the circular or other legislative mandate should apply to all agencies. Nevertheless, the waiver provisions in H.R. 133 must be included. Presently, performance of VE is the exception rather than the rule. Any mandate should operatively reverse this so that performance of VE is the rule, unless the requirement is waived.

Question

e) In the absence of legislation, what steps must the Federal government take to improve VE performance in its departments and agencies?

Answer

Create or develop an implementation method which operatively answers the questions set forth in Postulate No. 4. In other words, the Federal government must make cost savings as important in government as profit is in the private sector; and, develop and implement a system to reward cost performance by agency managers, while removing manager focus from department, budget and authority survival.

Question

2. What should be the minimum level of achievement for someone to be able to perform value engineering at the Federal level?

Answer

The minimum level of achievement for someone performing value engineering at the Federal level should be those qualifications set forth by Lawrence D. Miles, the father of value analysis, in Chapter 14 of his book,

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Techniques of Value Analysis and Engineering.[5] Mr. Miles lists the following requirements:

> 1) one week of basic training followed by; 2) six months of on-the-job value analysis work followed by; 3) one week of advanced training; and 4) six months of additional value analysis work.

The prerequisite for commencing value analysis training is some experience in the value analysis area. In addition, basic experience in industrial engineering, manufacturing or special procurement dealing with particular specifications or arrangements and negotiations between buyer and seller is desirable.

Question

a) If this issue is not decided in your favor, would you still support statutory VE requirements?

Answer

Yes. The question is not one of favor, but uprightness, fitness, equity and fair play.

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[5] Lawrence D. Miles, Techniques of Value Analysis and Engineering 3d Edition, (United States: Eleanor Miles Walker, 1989), 267-273.

CHAIRMAN CONYERS' FOLLOWUP QUESTIONS TO JEAN-PAUL PRENTICE

1. What revisions would you make to OMB Circular A-131 improve its effectiveness? What about H.R. 133 and H.R. 2014?

   -- In your opinion, would an incentive approach, similar to that provided in H.R. 2014, improve compliance?

   -- How do you respond to the claim that use of VE may not be cost-efficient in all cases?

   – In your opinion, what type of project benefits most from the application of VE?

   – Should any agency, department or procurement program be exempt from performing VE?

   – In the absence of legislation, what steps must the Federal government take to improve VE performance in its departments and agencies?

2. What should be the minimum level of achievement for someone to be able to perform value engineering at the Federal level?

   -- If this issue is not decided in your favor, would you still support statutory VE requirements?

City of New York
Office of Management and Budget
75 Park Place • New York, NY 10007
(212) 788-5900

Testimony of

New York City Office of Management and Budget
Value Engineering/Value Analysis Program

Presented by
Jill Woller, CVS

Before

Subcommittee on Legislation and National Security
Committee on Government Operations
House of Representatives

March 8, 1994

Chairman and Members of the Subcommittee,

My name is Jill Woller. I am the Deputy Chief Engineer of the NYC Office of Management and Budget. I have twenty-five years of experience in the fields of education, architecture, program management and government; the last eight in value engineering. I am certified as a Value Specialist by the Society of American Value Engineers (SAVE). My principal responsibility is the management of the City of New York's Value Engineering/Value Analysis (VE/VA) Program.

I am please to be here to offer support and encouragement for VE legislation such as H.R. 133 and H.R. 2014 and OMB's circular A-131. However, I have certain concerns which I shall expand upon after describing the NYC OMB Program.

New York City's Program may offer one model for the comprehensive and systematic application of VE to agency projects and procedures. Our VE Program is ten years old and has evolved and expanded during that period of time. Its original impetus was as a methodology to manage the costs and confirm the scope of work for complex capital projects.

Over the years, VE has become an accepted and integral part of the City's approval process for major projects. It is OMB's management tool for ensuring that the projects will fulfill their intended purposes in the most cost effective manner and can be built within the available funding.

But in addition to the quantifiable benefits of reduced initial and life-cycle costs, VE has also demonstrated many intangible ones. For example, our VE studies become interagency forums for the resolution of project-related issues and for the identification and removal of unnecessary elements which permit inclusion of project improvements. In fact, it is often the case that omissions or deficiencies in a project can be found and corrected early enough to avoid costly changes in the design later on

or unpleasant surprises during construction. When funds are scarce, the rigor of function analysis can help an agency crystallize its programmatic priorities and on every project, constraints are examined and either confirmed or challenged. VE studies are reality checks both for the sponsor or user agency and for OMB. Occasionally our independent VE cost estimates indicate that additional funds are required to meet the essential functions.

Having established VE's effectiveness in reviewing capital projects, OMB has recently begun applying VE/VA to selected City processes or procedures which are problematic or overly time-consuming. In particular, during the past year OMB conducted four Value Analysis studies for City agencies trying to streamline their procurement processes. These studies, lead by a consultant facilitator, were composed of City agency personnel who represented the major functional areas of the process. We also brought in two outside experts in procurement, one from the public sector and one from the private sector in order to provide a fresh perspective on the process.

Value analysis studies of agency operations and processes offer tremendous potential in terms of streamlining and productivity. But we must be cautious as to how we quantify the results. Procedural VA studies, even more than technical VE reviews of designs, are change efforts. Change is difficult to initiate and manage, requiring ongoing re-evaluation and support. Design changes, once accepted based on the merits of alternative proposals, are far easier to implement than workflow changes. Habits die hard; even inefficient, frustrating, time-consuming habits.

The team members for VA studies of procedures should be the people who are most knowledgeable about these processes and have the responsibility to make them work. Careful facilitation through the VA process will help these people move from frustration and defensiveness to team empowerment and creative solutions.

However VA studies are extremely dependent on top level concurrence in order for these efforts to achieve real time savings. Senior agency support of change efforts

is critical in overcoming inertia. If this support is not present, don't even start looking at the operation. The relevant people will not be released for the study, or if the study occurs, the participants' aroused expectations will be dashed and they will feel set up and more demoralized than before. Follow-up is also critical to insure the carrying out of sound ideas.

If these studies are taken seriously, they offer the potential of improved service delivery, shorter time delays in processing mission-critical functions and sometimes staffing reductions. Often it may become apparent that the time saved from unnecessary activities should be redeployed to needed but unmet or more important functions, and so a net staff reduction may not be the most desirable solution in some cases.

OMB's experience in reviewing two agency procurement processes for consultant services (one for design services and the other for human services) has been very illuminating. For the first time, as a result of a considerable prestudy interviewing effort, each agency was able to see its workflow visually in a baseline flowchart showing all process activities with their associated time durations. This enabled the team members to see how their separate functions fit into the whole process, and to see the gaps, overlaps and interdependencies among them.

One agency was spending 446 working days processing a complex design contract. The workshop resulted in accepted ideas which will potentially cut that time in half. Another agency required 239 working days for contracting and will potentially be able to reduce its time to 175 days. The more difficult changes to implement in process studies involve oversight agencies and other external entities which impose regulations. These ideas are still being pushed at the Mayoral level in New York and will further reduce agency procurement time once implemented.

Having shared with you the context within which I have reviewed the proposed legislation, here are my comments. I believe that the use of VE/VA in a systematic

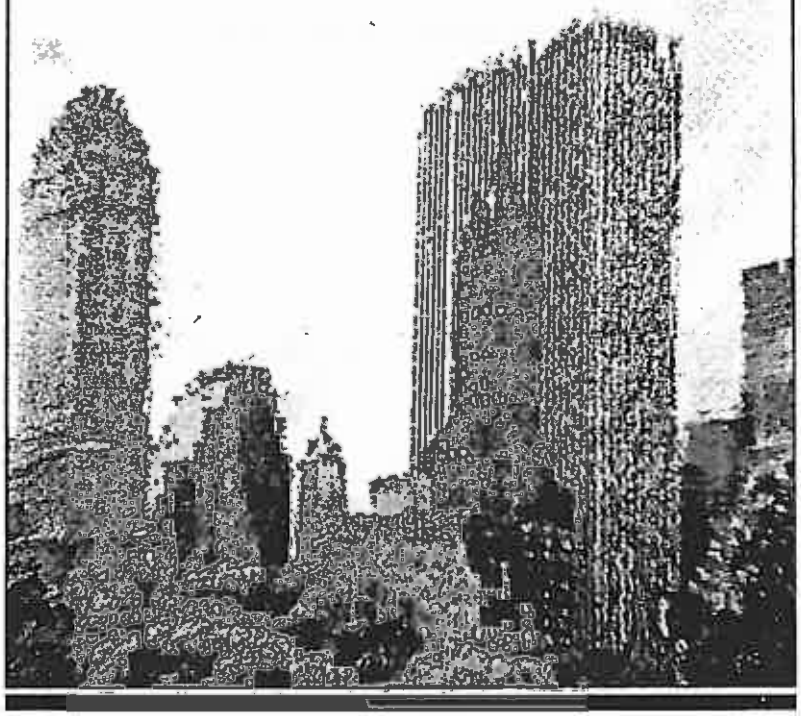
fashion by agencies should not be optional, since there is natural resistance to change and overcoming that initial reluctance will require experience of the benefits. If legislation is required to insure such use, it should be drafted to allow agency flexibility in choosing the best candidate projects and procedures for review, but the criteria for the choices should include areas of high cost or staffing, functions central to the agency's mission, sensitive projects, new technologies or systems, and standards or prototypes which will be used repetitively.

Cost thresholds also should be flexible and will likely vary from agency to agency. Waivers or exemptions from VE/VA within the above categories of candidate projects or programs should be justified in writing and monitored along with reports on progress or results.

A transition period will be necessary in order to put in place the VE/VA management staff, train them, develop contracts for consultant services and develop protocols for selection of projects for review. These elements, along with top level agency support and monitoring by OMB are critical to VE's success on a system-wide level. Once the program is established in each agency, incentives should be put in place along with the mandate to use VE comprehensively. Perhaps a gainsharing is possible which will allow an agency to keep and redirect a certain percentage of either its implemented cost savings or of the reduced staff resources. Other incentive clauses may be appropriate for projects with federal funding contributions (similar to those outlined in H.R. 2014), as long as there are no hidden escape clauses.

In conclusion, NYC OMB's experience has been positive and we have learned a great deal about what works and what doesn't, but careful attention to the human factor and to inertia is needed to initiate a VE/VA effort and encouragement and monitoring of progress is critical for the effort to succeed. The potential for cost management and service efficiency is enormous and should be supported through legislation or other appropriate action. Thank you.

Fiscal Year 1993 ANNUAL REPORT



Office of Management & Budget
Value Engineering/Value Analysis Unit

Fiscal Year 1993
Annual Report

Prepared By:
Office of Management and Budget
Value Engineering/ Value Analysis Unit

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Executive Summary

The New York City Office of Management and Budget (OMB) Value Engineering/Value Analysis (VE/VA) Unit conducted ten VE/VA studies during Fiscal Year 1993. This report documents the achievements of these studies. The results reflect the collaborative efforts of the sponsor, user and oversight agencies, along with talented professionals on both the design and VE teams. In all cases, the City's interest in advancing functional and cost-effective projects is the guiding impetus, and this common goal usually leads to agreement on approach. In the course of each VE study, ideas and proposals are developed which offer alternative ways to accomplish all of the required functions of a project, but in a more cost effective manner. Many VE studies include input from consultants who have experience in designing and operating similar types of facilities and are able to refocus a project's scope to meet the appropriate functional objectives.

The past year's VE projects included:

North River WPCP Odor Control Study
CDCSA Technology Center
Queensboro Bridge
Public Safety Answering System Upgrade
Long Range Sludge Management Plan
DOC Central Cook/Chill Kitchen
Harlem Hospital Ambulatory Care Facility
Bowery Bay WPCP Stabilization
Procurement Process Value Analysis (3 Workshops)
NYPD Training Facility

The Computer and Data Communication Services Agency (CDCSA) Technology Center provides data processing services to the City. This VE study, by taking advantage of expert consultants, was able to give an independent assessment of the current plan and suggested various actions that would help to insure that no system failure would result in the data center being inoperable for more than four hours. Even though these suggestions increased the cost of the project, they increased the reliability of the citywide data network.

The Procurement Process Value Analysis studied two agencies, the Department of Environmental Protection (DEP) and the Department of Health (DOH), as well as oversight agencies, to see if it was possible to reduce the total amount of time it took to procure services. This VA study was different from other studies because it focused on time rather than project improvements and life cycle cost reductions. Reducing the time it take to procure services will enable agencies to achieve their critical missions more efficiently. This study could also have a citywide impact because lessons learned could be used to significantly shorten the procurement process for other City agencies.

The Long Range Sludge Management Plan is part of a comprehensive plan to deal with the recent prohibition to ocean dumping of sewage sludge and develop constructive land disposal alternatives. Originally, the Department of Environmental Protection (DEP) intended to build five processing facilities in the five boroughs. Due to public opposition, one site in Brooklyn has been deleted from the current project. The VE study recommended many ideas, many of which will be factored into the final project. These ideas, which the DEP has agreed to study further, have the potential to reorient the ultimate solution in a constructive way while dramatically reducing the associated capital and operating costs.

The Bowery Bay Water Pollution Control Plant (WPCP) is a step aeration activated sludge plant designed for the primary and secondary treatment of sludge. The VE study identified operational problems and plant deficiencies not included in the designer's original scope of work, yet necessary to the project, and determined the most cost effective solution to meet the State Pollution Discharge Elimination System (SPDES) requirements. The VE review process added an estimated $9,500,000 in essential capital cost items to the project estimate, but corrected the scope of the project in the process.

The North River Water Pollution Control Plant (WPCP) Odor Control project was designed to mitigate odor complaints from the surrounding neighborhood. This project was initiated in an attempt to locate odor sources. The VE team analyzed the cost/benefit relationship for all the measures being proposed in the design, and suggested that odor control measures be prioritized and constructed in phases on that basis. Those having the greatest impact on odor for relatively lower cost should be installed first, followed by progressively less effective and more costly measures, if necessary. The VE team believed that some of the later phases of this odor containment strategy will not be necessary, reducing the ultimate capital costs of the project. The VE team felt that the final tanks should not be fully covered because this costly work would not have a significant impact on plant odors, but might create operational problems. The DEP has agreed to revisit the inclusion of the covering of the final tanks (estimated at $26,600,000) after the earlier phases of the project are installed.

Finally, the Harlem Hospital Ambulatory Care Facility was designed to consolidate clinic functions into a single building as far as practicable. The project's estimated construction cost far exceeded its available budget and the project, though needed, was at risk of stalling. The VE team suggested reconfiguring the building to permit more flexible relationships among the clinics, while attempting to reduce the project's construction costs. Reconfiguring the building enabled the project to proceed within its funding limit.

Fiscal Year 1993 VE/VA Summary

Project		*Capital Construction Cost*	*Budget*	*Accepted Cost Reduction*	*Cost Reduction/ Cap. Const. Cost*	
North River WPCP	1	$192,620,000	$82,143,000	$4,863,000	2.5%	
CDCSA Technology Center		$20,285,000	$20,000,000	($397,000)	-2.0%	
Queensboro Bridge		$117,589,000	$103,646,000	$17,571,000	14.9%	
Public Safety (E-911)		$93,781,000	$72,000,000	$10,790,000	11.5%	
Long Range Sludge Mgt. Plan	2	$1,204,583,000	$400,000,000			
DOC Central Kitchen		$85,500,000	$70,000,000	$3,153,000	3.7%	
Harlem Hospital		$52,181,000	$41,925,000	$10,063,000	19.3%	
Bowery Bay WPCP		$109,004,000	$55,000,000	$1,486,000	1.4%	
Procurement Process	3					
NYPD Police Training Facility		$239,792,000	$220,000,000	$8,707,000	3.6%	
Total		$2,115,335,000	$1,064,714,000			
Total without Sludge Mgt.		$910,752,000	$664,714,000	$56,236,000	6.2%	4

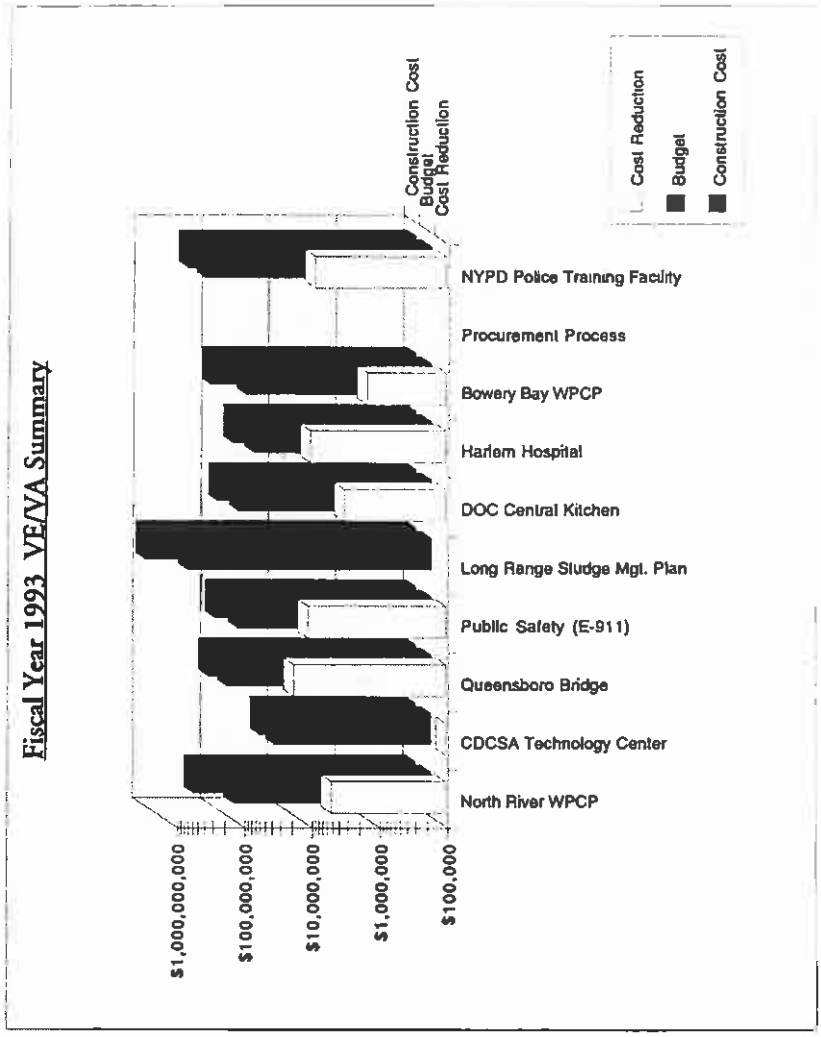
Average Cost Reduction Percentage 6.9% 4

1: Need for Final Tank Covering Estimated at $26,600,000, is Under Further Study.

2 : Many Further Study Recommendation Are Considered Strong Candidates for Acceptance and Are Expected to Significantly Impact the Final Results. Therefore, This Project Has Not Been Included in the Calculations.

3 : Study Focuses on Time Rather Than Dollar Savings.

4: These Calculations Do Not Include the Sludge Management Project.


Fiscal Year 1993 VE/VA Summary
Construction Cost
Budget
Cost Reduction
Cost Reduction
Budget
Construction Cost
NYPD Police Training Facility
Procurement Process
Bowery Bay WPCP
Harlem Hospital
DOC Central Kitchen
Long Range Sludge Mgt. Plan
Public Safety (E-911)
Queensboro Bridge
CDCSA Technology Center
North River WPCP
$1,000,000,000
$100,000,000
$10,000,000
$1,000,000
$100,000

North River WPCP Odor Control Study

Facility Plan Study

July 20, 1992

In 1979, the Department of Environmental Protection (DEP) instituted a waste water treatment management planning program to improve receiving water quality in New York City. With the completion of the primary treatment facilities in 1986, the North River Water Pollution Control Plant (WPCP) was designed to help reach the DEP's goal. Secondary treatment began in the spring of 1991.

The North River WPCP is a multi-level superstructure that extends over the Hudson River on a concrete platform. The Riverbank State Park was constructed on the roof of the plant. This park includes indoor and outdoor swimming pools, a skating rink, amphitheater, and a restaurant.

Following the start-up of full plant operations in the spring of 1991, odor complaints from the surrounding neighborhoods increased significantly. An odor emission study was initiated in an attempt to locate odor sources. The key goal was to assess the off-site impact of plant related odors, especially in the Riverbank State Park and the local community. The odor detection program identified areas that required odor containment devices.

Selected Highlights of Capital Cost Reductions and other Project Improvements:

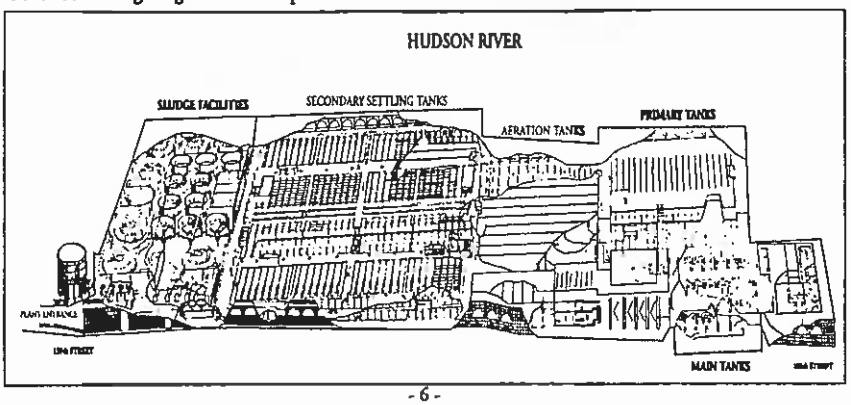
This Value Engineering (VE) study assessed the remedial measures being proposed for cost effectiveness and efficacy. The VE team believed some of the measures of work under Phase B would not be necessary (ie. final tank covering at $26,600,000). This will be revisited after Phase A of the project is built.

The largest cost savings involved reducing the volume of contaminated air in the tanks requiring odor control treatment by installing a ceiling, saving $4,290,000.

Using more precast concrete in lieu of more costly Fiberglass Reinforced Plastic (FRP) for the covers of the tanks will save an additional $600,000 .

The use of aerobic microorganisms to digest scum and grease in the scum concentrator will initially add $120,000 to the cost of the project. However, aerobic microorganisms will reduce operating expenses by $133,000 a year, which will save a total of $1,210,000 over the life of the project.

Cost reduction - Phase A $4,863,000



CDCSA Technology Center
Scope/Schematic Study

July 28, 1992

The Computer and Data Communication Services Agency (CDCSA) provides services to multiple users within City government. One major component of this agency is the Computer Service Center (CSC) which provides data processing services to City agencies. Currently, their offices are located throughout Manhattan.

The City is building a new facility with a developer in downtown Brooklyn. When their current lease expires in 1994, CDCSA will relocate data processing and administrative offices to this new facility.

Since this data center will be operated 24 hours per day, 365 days per year, all building systems must be designed so the facility can function continuously even during various failures. The goal is to provide a facility in which no system failure could result in the data center being inoperable for more than four hours and that future upgrade in equipment can be accommodated in a seamless environment.

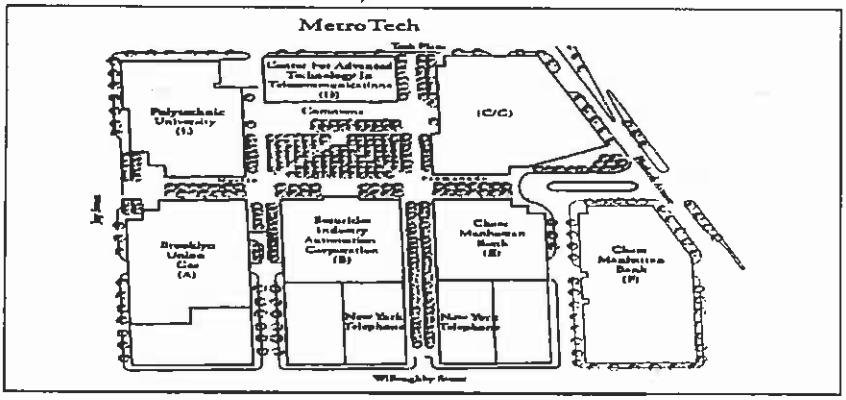
Selected Highlights of Capital Cost Reductions and other Project Improvements:

In general, the VE team confirmed the direction of the project's design. One focus of the VE team was to minimize the possibility of water damage in the computer area. Several VE recommendations dealt with added measures to prevent water damage, adding $123,000 to the cost of the project.

The largest cost reduction resulted from the use of a low temperature supply air to cool the office area. Using a lower air temperature will reduce the total volume of air required by 30%. This will reduce the size of the ductwork and fans required to move the air.

While many of the VE recommendations will initially add to the cost of the project, they will reduce future costs and computer "downtime". For example, using ultra-sonic humidifiers will add an additional $150,000 to the project, while saving approximately $36,000 per year in energy costs.

Total cost reduction ($397,000)



Queensboro Bridge
Scope Study

August 31, 1992

The Department of Transportation (DOT) wants to improve the structural integrity and reduce the number of accidents occurring on the lower outer roadways of the Queensboro Bridge. They will achieve this goal by correcting structural deficiencies, replacing the deck, relocating Con Edison's high voltage electric lines, and redesigning traffic access patterns. One lane will also be changed from automobile to pedestrian and bicycle traffic to improve safety for these users. The VE team suggested modifications that could improve function, improve constructability, and reduce costs.

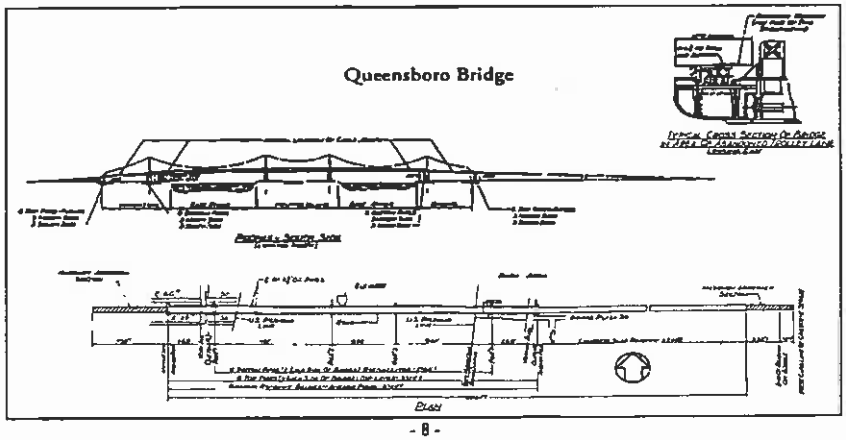
Selected Highlights of Capital Cost Reductions and other Project Improvements:

The major cost avoidance recommendation accepted was the use of a Prefabricated Unitized Floor System (PUFS) in lieu of a deck system constructed at the site. The PUFS enhances the overall reliability of the system due to a better controlled inspections at the fabrication plant. The capital cost reduction of this recommendation is $6,445,000.

The VE team felt that concurrent construction of Con Edison feeder pipes under both the north and south roadways, instead of constructing the north and south roadways sequentially, would reduce traffic congestion. A shorter construction time would increase the safety of pedestrians and bikers. This recommendation has an associated capital cost reduction of $727,600.

The relocation and splicing of the high voltage cables is an around-the-clock process that will disturb residential neighborhoods near the bridge in Manhattan. The alternate construction of a platform that will enable pipes, carrying the high voltage cables, to be launched on a continual basis will reduce construction time. This recommendation will reduce neighborhood disruption and save $2,000,000 in capital costs.

Total cost reduction $17,572,000



Public Safety Answering System Upgrade
Scope Study

November 16, 1992

The current public safety answering system commenced operations in 1973. The system has not been upgraded since it was installed. In the interim, much of the original technology has been rendered obsolete.

The New York Police Department (NYPD) will upgrade the entire system to incorporate Enhanced (E)-911 technology. Currently, 911 call takers must ask for a phone number and the location of each caller. E-911 technology utilizes Automatic Number Identification (ANI) and Automatic Location Identification (ALI). With E-911 technology, a call taker will only have to verify information from a caller, improving the overall accuracy of the system. This enhanced system will also be able to incorporate new technology when it becomes available, such as Automatic Vehicle Location (AVL).

This VE study focused on the draft Request for Proposals (RFP) document which would be issued to procure a Systems Integrator (SI) to design, build and install the new system. The VE team suggested clarifications to the RFP which would reduce the contingency cost factor proposers typically include when expectations are unclear. Of the proposals developed by the VE team, 30 were accepted, two proposals were designated for further study, and one proposal remains open for discussion.

The most important result of the VE study was the analysis and acceptance by the Office of Management and Budget (OMB), the New York Police Department (NYPD), and the Department of General Services (DGS) of an alternative backup plan. Originally, a "cold backup" strategy was planned in which E-911 staff would transfer to an unmanned secondary site if the primary site systems went down for any reason. This backup strategy required the temporary utilization of the current manual Borough backup system until relocation to the backup site was completed. The decision to operate dual "hot sites" will increase project costs, but it will guarantee acceptable levels of reliability, while minimizing loss of service. Each hot site will be capable of two thirds of the projected future capacity.

Selected Highlights of Capital Cost Reductions and other Project Improvements:

Since the proposed system is quite complex, the VE team made numerous suggestions to increase the SI's accountability during the entire process. The VE team also suggested requiring the SI to describe in detail the means of achieving the system reliability called for in the RFP. This will permit a more thorough study of proposed systems, within a competitive environment while avoiding the costs associated with changes after the proposer is selected. Potential cost avoidance, roughly 5% of total project costs, could amount to $4,500,000.

The VE team recommended that the City specify threshold facility performance requirements and not set numerical standards. This idea would make the SI responsible for the means to achieve satisfactory performance, with a projected cost avoidance of $4,000,000.

The VE team also suggested eliminating excessive performance requirements in the system. Originally, all transactions had to be answered within three seconds 100% of the time and within one second 95% of the time. Changing these to 99.9% within three seconds and 97.5% within one second will provide adequate performance with a reduced cost of $750,000.

Total cost reduction $10,790,000

Long Range Sludge Management Plan
Facility Plan/Scope Study

December 14, 1992

Pursuant to the Ocean Dumping Ban Act of 1988, New York City entered into a Consent Decree and Enforcement Agreement to phase out and end ocean dumping of sewage sludge. The City's Sludge Management Plan to meet the terms of the agreement consists of three separate phases: Immediate, Intermediate, and Long Range Plans. Under the Long Range Plan, the existing dewatering facilities will continue to operate and additional processing facilities will be constructed throughout the City.

The goal of the Long Range Plan is to implement a beneficial use sludge management system that will accommodate peak sludge production (1.6 times the average), and provide for adequate capacity redundancy. The plan calls for a system of five sludge processing facilities that would compost, thermally dry, or chemically stabilize sludge for beneficial use. End users for these sludge products will be City agencies as well as private firms.

The VE team recommended re-evaluating the capacities of different sludge processing technologies relative to the marketability of the products that are produced, potentially saving $869,000,000 in life cycle costs. The VE team also suggested maintaining the out-of-state sludge disposal program for as long as possible and building new sludge plant for the year 2008, saving $1,819,899,000 in life cycle costs.

Proposed Sludge Processing Facilities

The VE team suggested providing interior column supports over the walls of the blower room to reduce the spans to less than half their current dimension, and changing the shape of the roof trusses to peaked trusses. This suggestion allows the benefits of a clear span while saving $4,795,000 off the capital costs of the project.

The VE team's recommendations are currently being studied further by the DEP. This program is still being refined and may evolve into a much different final project.

DOC Central Cook/Chill Kitchen
Schematic Design

January 11, 1993

The Department of Correction (DOC) currently uses a decentralized method to feed the inmate population. The purpose of this new facility being advanced under Consent Decree is to provide central production of cook/chill meals for all City correctional facilities, both on and off Rikers Island. The cook/chill process is a method of production where food is cooked in large quantities via conventional methods and rapidly chilled over a short period of time. Food produced at this central facility will be stored in a food bank before it is delivered to each satellite receptor kitchen, where the food will be reheated.

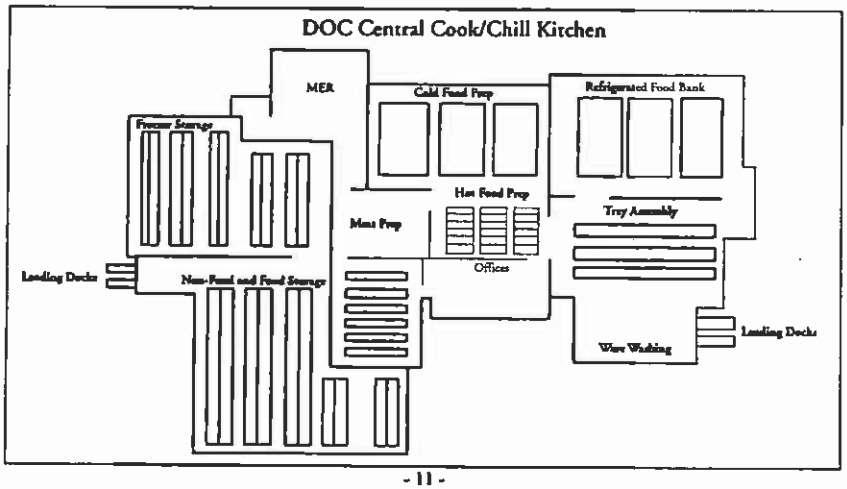
A centralized cook/chill methodology ensures strict quality control during production. It also eliminates the need to maintain hot food temperatures during transport, while improving the nutrient content during rethetmalization. A secondary benefit involves improved monitoring of inventory which reduces waste. Production in this central kitchen will run one shift over a five day work week, providing 117,251 meals daily. Current demands of individual facilities totaled 83,751 meals per day and required a seven day work week.

Selected Highlights of Capital Cost Reductions and other Project Improvements:

The VE team suggested using four-high storage racks instead of the proposed three-high storage racks in the adjacent central warehouse. This would result in the reduction of 8,250 sf of space, or permit the addition of functions not incorporated in the original design, at an overall potential reduction of $1,600,000.

The VE team also suggested eliminating one of the three emergency generators with a potential cost reduction of $390,000.

Total cost reduction $3,153,000



Harlem Hospital Ambulatory Care Facility

Scope/Schematic Study

February 1, 1993

The New York City Health and Hospitals Corporation (HHC) wants to establish a new ambulatory care facility on the Harlem Hospital Center Campus (HHCC). The current ambulatory care clinics are fragmented and housed in various locations throughout the campus. The age, design, and location of these buildings in relation to the main hospital make them unsuitable for direct patient care functions.

The project consists of the construction of a new Ambulatory Care Facility on the site of a current parking lot. Many existing services will be relocated from their current locations and consolidated in this new building. Some administrative functions will remain in renovated space.

Selected Highlights of Capital Cost Reductions and other Project Improvements:

The VE workshop was conducted by two parallel teams: the first reviewed functional and space requirements and operating efficiencies; while the second team reviewed architectural, structural, mechanical, and electrical systems.

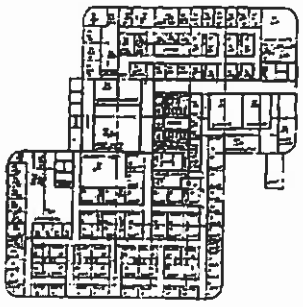
The first team reviewed the space program requirements and determined that a total of 108,073 gsf would satisfy all the HHC functional requirements and New York State hospital standards. This is 3,251 gsf less than the original design required, reducing the cost by $705,200.

The VE team also suggested reconfiguring the Ambulatory Care building and adjacencies to permit more flexible relationships among the clinics allowing neighboring clinics to be expanded into adjacent space on an as needed basis, while allowing more efficient patient circulation and separating staff from patient circulation. The rearranged spaces were accepted by the HHC. This recommendation had an associated cost reduction of $1,097,000.

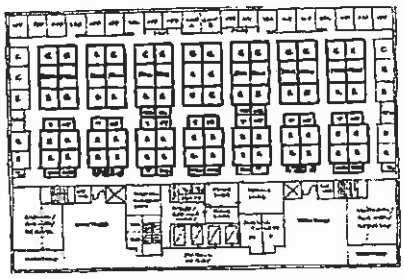
The major cost reduction proposed by the second team and accepted by HHC avoided the need to relocate the oxygen plant and demolish the old Nurses Residence by relocating the new building footprint. The capital cost reduction identified with this recommendation is $4,086,000.

Total cost reduction $10,063,000

Original Design



VE Proposed Configuration



Bowery Bay WPCP Stabilization
Facility Plan/Scope Study

February 22, 1993

The existing Bowery Bay Water Pollution Control Plant (WPCP) is located in Astoria, Queens. The plant is a step aeration activated sewage treatment plant designed for a dry weather flow of 150 million gallons a day (mgd), and a maximum of 300 mgd. The secondary treatment facilities can handle 225 mgd.

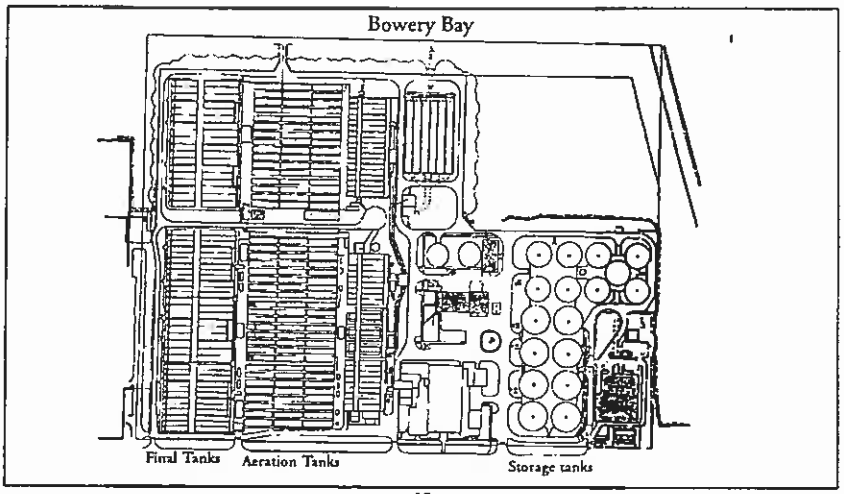
Remedial measures to correct operational problems and plant deficiencies were identified, developed, and evaluated to determine the most appropriate and cost effective solutions while meeting State Pollution Discharge Elimination System (SPDES) requirements.

Selected Highlights of Capital Cost Reductions and other Project Improvements:

The VE workshop included a number of recommendations, with an estimated additional capital cost of $9,500,000, which are crucial for plant operations. The VE team identified the need for increasing the influent and effluent piping diameter essential to compensate for planned increased flow, which increased the capital costs of the project by $5,200,000. The VE team also suggested replacing the existing non-working spray water system in the aeration tanks and adding another rotary self-cleaning type strainer. This will increase the capital cost of the project by $1,300,000. These suggestions, although adding to the capital cost, will provide functional and necessary improvements to the project.

Other recommendations that were accepted will result in capital cost reductions. The VE team suggested replacing existing weirs with finger weirs at a capital cost reduction of $440,000.

Total cost reduction $1,486,000



Procurement Process
Value Analysis

DEP	March 24, 1993
DOH	April 21, 1993
Oversights	May 26, 1993

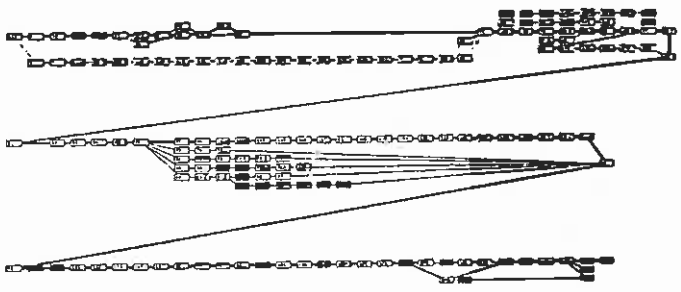
The study was sponsored by the Procurement Policy Board (PPB) and the Mayor's Office of Contracts (MOC) with support from the Mayor's Office of Operations (OPS). The goal of the study was to develop a series of ideas to improve the City's procurement process and shorten the amount of time it takes to procure professional services. This initiative was undertaken to address serious concerns raised by City managers, who need to acquire professional services in a timely manner to accomplish the missions of their respective agencies. The current procurement system is relatively new and subject to agency misunderstandings.

The study focused on three different views of the procurement process. Workshop I focused on the Department of Environmental Protection (DEP). The DEP determined that competitive sealed proposals from pre-qualified lists for design services on construction contracts over $5 million represent their most critical procurement type. This type of procurement represents more than three-quarters of the agency's activity. Once implemented, the accepted ideas promise to save a substantial amount of time. It is estimated that the DEP could bring its average procurement time for complex projects down from 446 working days to approximately 200 working days.

Workshop II analyzed the procurement process for the Department of Health (DOH). The DOH determined that competitive sealed proposals responding to a Request For Proposals (RFP) were the most critical to accomplish their mission. Proposals were developed that could be largely implemented by the DOH. Once implemented, the accepted ideas are estimated to bring the DOH's average procurement time down from 239 working days to under 175 working days. The proposals from both studies can be broken into six broad categories: tools creation, human resource development, team building, process modifications, vendor selection, and centralization.

Workshop III focused on the external aspects of the procurement process that affect the operating agencies but are outside their control (i.e. oversight changes and changes in the rules). The team formulated recommendations across ten major themes that would have to be accomplished to achieve a target procurement time of four months. Some of the themes centered on: forms reductions, maximizing delegation and post audit, and using citywide contracting.

Current DEP Procurement Process



NYPD Police Training Facility
Conceptual Design

June 23, 1993

The New York Police Department (NYPD) intends to build a new training facility in the Bronx. The design for this facility was the subject of a competition among several prestigious architectural firms. Members of the winning design team participated in the Value Engineering (VE) study. The plan calls for the consolidation and expansion of all recruit and borough-based in-service training as well as specialized training currently conducted elsewhere.

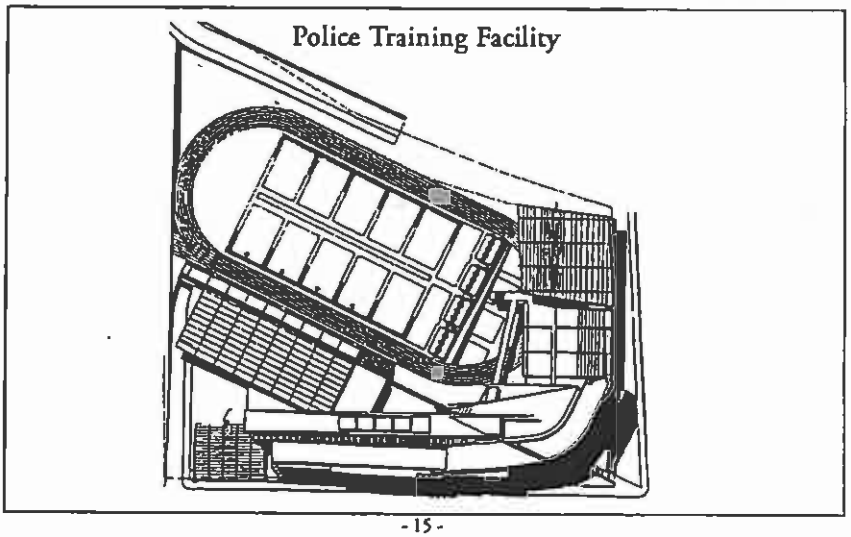
Selected Highlights of Capital Cost Reductions and other Project Improvements:

The VE team, including the project designer, suggested using a high density filing system instead of a conventional filing storage system, which will save 4,820 sf of space. A cost reduction of $5,612,000 is associated with this recommendation.

After reviewing the classroom utilization assumptions, the VE team proposed reducing the number of recruit classrooms from 38 to 35. This accepted recommendation will result in the elimination of one core and two divisible classrooms, with an associated cost reduction of $1,220,000.

The VE team also proposed that the library should function as a learning center with computer databases and multi-media network access instead of conventional printed material. This suggestion would improve the library's function, while saving $771,000 in capital costs. The reproduction room will also utilize state-of-the-art equipment in lieu of printing presses, saving $440,000.

Total cost reduction $8,707,000



June 23, 1992
Testimony

Legislation and National Security Sub-Committee
of the
Government Operations Committee
United States House of Representatives

John Conyers, Jr.
Chairman

Mr. Chairman, my name is Donald E. Parker. I am pleased to have been asked to submit this testimony with regard to your pending legislation on value engineering. I served as the first Director of GSA's Public Buildings Service (PBS) value engineering (VE) and value management (VM) program beginning September 11, 1970.

I hold a BSCE Degree from Northwestern University and served as a Commissioned Officer in the U.S. Navy Civil Engineering Corps early in my career. I am a registered professional engineer (PE), a certified cost engineer (CCE) of the American Association of Cost Engineers, and a Fellow and life certified value specialist (CVS) of the Society of American Value Engineers.

I served 28 years with the Federal government, 14 years with Navy and 14 years with PBS. I am now self-employed as a successful building developer and consultant in the private sector.

To be honest with you, when I was at GSA I was strongly against having a VE law. I felt, how can you legislate creativity? How can you legislate someone to want to conserve and protect taxpayer resources when getting the mission accomplished is more important?

Now, some 22 years later, I am here to tell you that I was wrong. Because of my experience at GSA, I now fully support legislating value engineering. The reasons for this are provided at the end of my testimony. Now for the story.

BEGINNING OF THE PROGRAM

VE, an industry technique since 1947 originated in the General Electric Company by Larry Miles, was introduced by Arthur F. Sampson and Larry Roush in the mid 1960's while they were working in executive positions for the State of Pennsylvania. They applied VE in State government operations, successfully saving the State millions of dollars. For his outstanding work, Mr. Sampson was elected as Honorary Vice President of the Society of American Value Engineers.

In 1970, when Mr. Sampson was named Commissioner, PBS, the first thing he wanted to do to improve operations was start a VE program. He brought with him Larry Roush as his Special

Assistant who shared the successful VE experience in Pennsylvania.

I was Deputy Director of Value Engineering in the Naval Air Systems Command at the time but I originally came from a construction background in the old Navy Bureau of Yards and Docks (now NAVFAC). On September 11, 1970, I began my first day at PBS on the Commissioner's staff.

It took me nearly a year to start the program. Handbooks had to be written, training materials developed, organization agreed upon, levels of effort established and contract provisions written.

In addition, the private sector had to be willing to perform VE. At the time I was hired, the American Institute of Architects and American Consulting Engineers Council had never been formally introduced to the concept and had not taken a position on it. The breakthrough came on April 27, 1971, when the National Public Advisory Panel on Architectural Services endorsed the principles of using VE in Architect-Engineering services and set forth the professional requirements for the performance of VE.

Mr. Sampson recognized the need for qualified staffing of the VE program. In August 1971, I was authorized to hire another seasoned value engineer to support me.

The PBS program began in ernest on October 4-7, 1971, at the first meeting of PBS Regional VE Board Chairmen who met in Washington, DC for their indoctrination seminar. Mr. Sampson personally approved of the regional office nominees to spearhead VE activity. He wanted the best performers as VE leaders, not just those who could be spared.

On January 12, 1972, PBS issued its first handbook on VE Methodology for use by its employees and contractors. On March 2, 1973, PBS introduced the first VE service requirements for Construction Manager and Architect-Engineer (A-E) contracts. This was the first formal use of VE services during the design stage of Federal buildings.

The program at PBS for fiscal years 1972 through 1976 was a full and thriving program saving taxpayers more than $10 million a year with a peak return-on-investment of more than $18 for every dollar of program cost. Exhibit A is a detailed report of the success of the program for the first 5 years.

Because of the success of the program in PBS, Administrator Sampson ordered the program spread throughout GSA. As a first step, my Deputy was promoted and transferred in May 1973 to begin and direct a value analysis (VA) program in GSA's Federal Supply Service (FSS). I was allowed to backfill this vacancy with a second qualified value engineer.

In May 31, 1974, the VE program name was changed to Value Management (VM) in order to provide a broader scope of application of the program for all GSA services. And, on November 22, 1974, GSA issued its Policy Manual requiring that all services and staff offices establish and maintain a VM program. Dollar thresholds for performance were set and each service was to designate a full-time manager to direct its VM program.

During this period in 1974, Larry Roush was the Commissioner, PBS. Mr. Sampson was the Administrator, GSA. Mr. Sampson gave Mr. Roush a second title, that of being the Deputy Administrator for Special Projects. It was under this hat that PBS would act as leader and catalyst for the GSA-wide program. By July 1974, a third certified value engineer was hired to support the added GSA-wide responsibilities.

The PBS program continued to prosper. The GSA-wide program, however, floundered. The National Archives and Records

Service (NARS) and the Automated Data and Telecommunications Service (ADTS) ignored direction from PBS, a sister service and designated leader of the GSA-wide program. On December 14, 1976, a new GSA Order was issued establishing an Intra-GSA VM Committee to help the other services get started. Lots of meetings were held but I received no top level management support from NARS or ADTS, only lip-service.

In 1976 the PBS program began having its own problems because of change of management. Nicholas A. Panuzio, previous Mayor of Bridgeport, Connecticut became Commissioner. He wanted to know why VM should receive his attention and support above all other programs he could use to do the same task. He asked me to prepare a "white paper" for him on the subject.

A copy of this white paper, which I later had published, is provided as Exhibit B to this testimony. Upon receiving the white paper, Mr. Panuzio appeared to become a real enthusiast and offered to support the program. On December 13, 1976, Commissioner Panuzio issued a guidance letter to all regions requiring the preparation of a VM Plan for FY 1977 and indicating the level of resources to be utilized in performing VM.

To make the program more GSA-wide a new handbook for contract value incentive clause usage was published August 1, 1978. It provided guidance on clauses for construction contracts, service/term contracts, leases, equipment, and supply contracts for GSA-wide usage. It also provided for the first standards for giving employee awards for VE participation in contract activity. Ironically, supervisors ignored it and would never recommend anyone for an award.

In October 31, 1978, a revised handbook on VM methodology was issued for GSA-wide use in conducting internal VM studies. It too contained the first standards for an employee awards program for causing cost savings. And, no employee was ever recommended by management for an award.

BEGINNING OF THE END

On February 22, 1978, Robert K. Bogardus became Acting Deputy Commissioner, PBS. On March 12, 1978, the VM Division was unilaterally moved from staff to the Commissioner, PBS to staff to the Assistant Commissioner, Design & Construction, PBS. I viewed this as a deliberate downgrading of the VM program by pushing it deeper into the bowels of the organization where I could not be as effective in communicating across organizational lines within PBS or outside of PBS.

As a result, in January 1979, a GSA Order was issued transferring the responsibility for the direction and coordination of the GSA-wide VE Program to the Transportation and Public Utilities Service (TPUS).

January 1979, I attempted to send out the FY 1978 VM Performance Report for PBS which measured performance against a previously established one-percent savings goal. The letter also provided specific requirements for improvement which amounted to a minimum of one study be conducted per Division. This letter was blocked by Dennis Keilman, Acting Commissioner, PBS.

June 1979, Admiral Rowland G. Freeman III, at his confirmation hearings before the Senate Government Affairs Committee to be GSA Administrator indicated that VE was an excellent tool for cost avoidance and pledged to see that the program would receive continued emphasis. However, shortly after confirmation Admiral Freeman appointed A. R. Marschall (former RADM of NAVFAC) as Commissioner of PBS. This was the same Marschall who testified on May 19, 1975 in the hearings on military construction appropriations that when the Chairman mentioned VE that he "put a burr under my saddle." Unfortunately the Commissioner never followed the Administrator's policy for VE and the Administrator never enforced it.

82-619 O - 94 - 9

August 16, 1979, I prepared Regional Cost Reduction Goals for the PBS VM program for issuance. On February 7, 1980, I received this correspondence back unsigned - it was blocked by PBS management and never sent out.

September 24, 1979, the VM Director, FSS, was appointed to manage the GSA-wide VE Program. I recommended this because he at least still worked at the Commissioner level and had access to the other services.

November 15, 1979, PBS management blocked the issuance of my summary FY 1979 VM Program Report.

December 18, 1979, PBS Commissioner Marschall blocked issuance of a letter to Regional offices requiring more effective cost control of design work by directing them to contract for VE review of design work when staff is not available to perform the studies. The Commissioner's comments were, "I gag on this."

THE FINAL BLOWS

In January 28, 1980, Senator Jennings Randolph, Chairman, Committee on Environment and Public Works, wrote Administrator Freeman a 6-point letter requesting information on VE program results. In an attempt to elicit support for the program I

sent forward a proposed response to Senator Randolph indicating that for the first time in several years no VE goals had been assigned and that no savings in the VE program had been reported in FY 1980. The only savings to report came from old FY 1979 regional data. On March 11, 1980, Commissioner Marschall wrote "Value engineering goals be damned! The way to save money is by good design and meticulous construction contract administration."

January 22, 1980, the responsibility for direction and coordination of the GSA-wide VE Program was once again transferred from TPUS to the Acquisition Policy Directorate, Office of Acquisition Policy.

April 3, 1980, David Dibner, Assistant Commissioner for Design and Construction wrote a letter in response to the February issue of Civil Engineering Magazine which announced that VM procedures have been dropped as a separate consultant service and that henceforth VM would be performed by regional design and construction personnel or architect-engineers as an integral part of their design functions.

On April 8, 1980, the VM Division lost its name identity altogether by being merged with the Cost Management Division under the Office of Design & Construction.

May 20, 1980, Commissioner Marschall rescinded in part his animosity toward VE and the signal he was sending regarding his concern for cost. He wrote all Regional Administrators that he supported the principles of VE but not its "trappings." This did little good - the earlier messages were clear.

In September 1982, a key VE employee left PBS to return to private industry. He was hired to help serve the GSA-wide program but was frustrated at every turn and could not be effective working in a remote Branch of a Division of one Office of PBS.

In December 12, 1982, I was detailed out of the Cost Management Division to serve as Director Program Planning & Analysis Division, Office of Design & Construction further weakening the VM program.

June 3, 1983, Steven L. Hammer, GSA Associate Administrator for Operations wrote a letter to all Regional Administrators stating that current policies and instructions regarding VE were not being enforced in the regions and that he expected Regional Administrators to enforce all policies and procedures. Unfortunately this was the first such letter of its kind since the GSA-wide VE policy had been issued 9 years earlier and, it too was ignored.

August 29, 1983, William A. Clinkscales, GSA Associate Administrator for Policy and Management Systems, wrote the GSA Assistant Administrator for Acquisition Policy, "I do not concur with your proposal to establish a GSA Value Engineering Program. The objectives of value engineering are inherent in the management of every GSA project and program. We expect our managers to choose the most economical alternatives and eliminate all unnecessary costs at all times. It is therefore, unnecessary and wasteful to establish a separate program which will aggrandize the means at the expense of the desired results. Let's let managers manage."

On September 29, 1983, a new GSA Order was issued setting forth the policies and procedures for having a GSA-wide VE program. With the above attitudes inherent in top GSA management the climate to attempt to consciously reduce cost and conserve taxpayer resources was non-existent.

On December 6, 1983, I was assigned to serve as Director Cost Management Division, Office of Design & Construction, PBS.

On January 8, 1984, I was reassigned to serve as Director Program Management Division, Office of Design & Construction, PBS.

On April 11, 1984, I was detailed from PBS Design Management Division to serve on a Planning Task Force established by the Commissioner. Normally one would consider this an honor but I felt it was the first foot out the door.

Then, while I was gone on detail, they reorganized the Division which abolished the VM activity. On October 24, 1984, I received a letter from the Assistant Commissioner for Design and Construction informing me that my position had been abolished.

On December 1, 1984, I accepted retirement from GSA on an involuntary discontinued service basis. I was 47 years of age at the time with 28 years distinguished Federal service.

EPILOGUE

The last qualified value engineer and certified value specialist left PBS in May 1986. His position was left unfilled. His duties were assumed by another staff member who had no VM experience or training. Without qualified people, the program was dead.

On January 26, 1988, OMB issued Circular No. A-131 in an attempt to stem off legislating VE as a program. The Circular required agencies to establish a VE program.

On December 5, 1988, GSA responded by issuing a new GSA Order requiring each service to establish a VE program tailored to its mission and organizational structure and to appoint a Program Director, among other things.

On August 14, 1991, PBS's response was to cancel its only handbook on VE methodology, disestablish all regional VM Boards, and convert its VM program for A-E services during design to "guidance only."

With the qualified staff gone, cancelling the program documents, including VE methodology, is the last straw.

CONCLUSION

It is my belief that the VE program in PBS ultimately died because:

1. The program sponsor and mentor left.

2. Continuity could not be maintained because of musical chair changes in management (see Exhibit C).

3. Poor regional VE performers, who were previously pressured to achieve VE, were promoted to headquarters positions.

4. No enforcement mechanisms existed against individuals who failed to comply with written GSA policy.

5. Conserving and protecting taxpayer resources is not an operational or mission necessity.

The DOD calls the regulations it issues "Instructions." GSA calls them "Orders." From my military background, I always thought that an order was more authoriative than an instruction. Not so in GSA, VE order's were meaningless.

Incorporating VE into "law" will also be meaningless unless it has proper enforcement mechanisms. Yet, I now firmly believe this must be done. Legislation is the last best hope to provide the continuity the program needs and to clearly set the tone for elimination of waste of taxpayer funds.

Yet, from the above litany one can see that good words do not get the job done. And, if you don't have the faithful, good faith does not help either.

RECOMMENDATIONS

1. Legislate the reporting of VE to Congress for each Department or Agency but requiring its use and application at the lower Service. Two examples:

    - o GSA would report to Congress with the law requiring programs in PBS, FSS, etc.

    - o DOT would report to Congress with the law requiring programs in FAA, UMTA, Coast Guard, etc.

2. Require that the Office of Personnel Management (OPM) ensure that all Senior Executive Service (SES) merit pay plans incorporate VE goal achievement as a required performance factor before bonuses and raises are issued.

General Services Administration
Public Buildings Service
Value Management Program

REGIONAL SAVINGS

(Savings x1000)	1972	1973	1974	1975	1976	Totals
Region 1	$9.8	$19.8	$89.2	0	$143.0	$261.8
Region 2	0	0	$357.7	$145.1	$23.1	$525.9
Region 3	$144.4	$212.4	$358.7	$125.6	$7,453.3	$8,294.4
Region 4	$7.4	$87.9	$7,147.3	$2,190.6	$1,533.1	$10,966.3
Region 5	$1,002.4	$545.7	$822.5	$269.5	$1,374.0	$4,014.1
Region 6	$228.0	$73.3	$236.6	0	$1,123.4	$1,659.3
Region 7	$235.9	$115.8	$705.5	$33.8	$375.8	$1,466.8
Region 8	$45.9	$13.2	$29.1	$371.0	$2.1	$461.3
Region 9	0	$12.0	0	0	0	$12.0
Region 10	$22.7	$749.3	$295.0	$105.3	$1,113.7	$2,286.0
Totals	$1,694.5	$1,829.4	$10,041.6	$3,240.9	$13,141.5	$29,947.9

REGIONAL COSTS

(Costs x1000)	1972	1973	1974	1975	1976	Totals
Central Office	$113.6	$98.5	$147.7	$210.4	$247.2	$817.4
Region 1	$28.9	$15.6	$29.5	$72.6	$26.8	$173.4
Region 2	$27.8	$22.9	$166.5	$67.9	$38.7	$323.8
Region 3	$26.7	$45.2	$114.5	$96.2	$94.8	$377.4
Region 4	$35.1	$38.2	$57.8	$49.9	$113.4	$294.4
Region 5	$33.6	$40.8	$136.0	$61.1	$28.6	$300.1
Region 6	$27.0	$28.4	$36.1	$52.3	$17.6	$161.4
Region 7	$52.5	$27.7	$15.9	$25.8	$28.8	$150.7
Region 8	$31.9	$15.4	$18.0	$20.8	$5.2	$91.3
Region 9	$31.1	$25.7	$3.0	$14.1	$3.8	$77.7
Region 10	$32.4	$45.3	$56.0	$51.7	$121.6	$307.0
Totals	$440.6	$403.7	$781.0	$722.8	$726.5	$3,074.6

RETURN ON INVESTMENT

	1972	1973	1974	1975	1976	Total
savings/costs	$3.84	$4.53	$12.85	$4.48	$18.09	$9.74

Exhibit A

General Services Administration
Public Buildings Service
Value Management Program

SUMMARY INTERNAL PERFORMANCE

Measurements	1972	1973	1974	1975	1976	Totals
Number attending VM Executive Seminars	101	60	28	53	60	302
Number attending VM Workshops	126	206	178	150	93	753
Number of Savings Reports	16	9	39	75	79	204
Dollars saved (x1000)	$683.3	$666.5	$8,971.1	$3,037.4	$13,069.9	$26,428.2
Program costs (x1000)	$308.2	$318.6	$477.7	$665.8	$692.5	$2,462 8
Return on investment (savings/cost)	$2.20	$2.10	$19.20	$4.56	$18.87	$10.73

SUMMARY CONTRACTOR PERFORMANCE

Measurements	1972	1973	1974	1975	1976	Totals
Number of proposals received	44	130	62	36	36	308
Number of proposals withdrawn	2	8	3	2	1	18
Number of proposals approved	32	82	48	27	26	215
Percentage of proposals approved	82%	68%	81%	79%	72%	70%
Average processing time in days	37.7	28.6	43.9	63.1	39.0	42.5
Contractor savings share (x1000)	$444.4	$1,392.0	$938.4	$181.1	$40.6	$2,996.5
Government savings share (x1000)	$1,011.2	$1,182.9	$1,070.5	$203.5	$71.6	$3,519.7
Program costs (x1000)	$132.4	$85.1	$303.3	$57.0	$34.0	$611.8
Return on investment (savings/cost)	$7.60	$13.70	$3.50	$3.57	$2.11	$5.75

A White Paper on Value Management

by Donald E. Parker, PE, CVS, CCE

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He is recipient of SAVE's Value Engineer of the Year and Distinguished Service Awards.

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Preface

While working for an agency of the Federal Government I experienced a situation of continually changing top management. The manager that had hired me, knew about value management, supported the program and acted as my mentor had moved to another position.

The replacement top managers all needed to know about value management. They asked, "What is it doing on my staff?" "What is it all about?" "Why do I need it to do my job?" All of these are familiar questions to an incumbent Value Management Program Director.

Along came a top executive who asked a different question, "Why should I support value management over all the other programs I have that achieve the same results?" "What makes value management so special to deserve special emphasis?" With that, I agreed to prepare the following White Paper to address the subject.

Basic Duty

A major part of the responsibilities of the head of any agency is to "protect and conserve" the resources entrusted by the people for use in their benefit. The question then follows, how much effort and resources is one willing to allocate to this function and under what mechanism(s) does one wish to manage this activity?"

Current Mechanisms

The mechanisms available to managers to conserve and protect resources are many and varied. But, basically, they can be put into two groups: static and dynamic.

The static mechanism are devices built into the process of doing business as guidelines, regulations and laws. They should happen all the time, and of course, they do cost hidden resources to achieve their benefit. Some examples of static mechanisms intended to conserve and protect resourcesd are shown in Figure 1.

Operational-Mission Related Responsibility
Conserve & Protect Resources

Static Mechanisms	Dynamic Mechanisms
Personnel Ceilings	Productivity Programs
Budget Limitations	Work Simplification
Competitive Procurement	Cost Reduction
Laws from Congress	Paperwork Management
Davis-Bacon Act	Life Cycle Costing
Economy Act	Management by Objectives
Etc.	Employee Suggestions
	Management Improvement
	Zero Based Budgeting

Figure 1

Static mechanisms exist to assist management in preventing a big blunder. It is an approach whose costs and benefits are rarely calculated. However, recognizing they exist and that they are important, they are not the subject of this White Paper.

It is the dynamic mechanisms for protecting and conserving resources that are the subject at hand. In our agency, some of these dynamic mechanisms are listed in Figure 1. Other dynamic mechanisms not included in Figure 1 are:

Exhibit B

Energy Conservation	Economic Analysis
Value Management	Design-to-Cost
Management Surveys	Trade-off Analysis
Presidential Initiatives	Systems Analysis
Audits	

All compete for the resources of management. They are dynamic because their emphasis and utilization fluctuates with seasons of Government and power. They are dynamic because the level of their use by managers is limited by their understanding, experience, training, use, and preconceived notions concerning these mechanisms. They are dynamic because the level of their use by employees is limited by these same issues in addition to their perception of management's interest in them.

Operational Perceptions of Dynamic Mechanisms

Before discussing in more detail the selection of dynamic mechanisms for this agency, one must address the perceptions that our operating managers seem to have when it comes to allocating resources (i e., ceiling, dollars, manhours) to these type of functions. Fairly, they wonder about operational priorities, how their job will be made easier, who will get the credit and what the credit is! Direct benefit to them is not apparent to them.

In the business world, the function of effort to protect and conserve resources is clear. It contributes to profit. And, managers can rationalize that what is good for the company, is good for them.

In Government, the function and purpose of the expected effort is more subtle. It is to improve the utilization of resources. Yet, the system is so designed to create apprehension regarding impact on resources and performance instead of motivation to perform:

Action	Fear
Improve productivity	Ceiling will ultimately be reduced
Save money	Unobligated funds indicates poor performance
Encourage suggestions	Workload will increase
Encourage studies	Dilutes ability to perform operational responsibilities
Generate life cycle cost ideas	Demands for limited money will increase
Identify problems	Reflection on job performance

A most interesting statement taken from the joint GSA-FEA-OMB Energy Conservation Site Visit Report (Conservation Paper Number 38 dated April 1976) reads:

> "It is almost axiomatic that any effort or program is helped by top management interest. Human nature is such that most employee time and effort is directed toward those aspects of the job that are closely reviewed and about which management is concerned."

With regard to energy conservation, the above report found that there was an attitude that the mission of the activity was the *total* and top priority and that conservation was only a secondary function.

Most managers do not perceive a direct "sense of duty" to assist in protecting and conserving resources. This happens because the effort required to protect and conserve resources is not treated as a task assignment equal in importance to other mission or operational priorities. And the focus of executive management is generally not on these issues.

Supporting this conclusion is the "Wilcock Survey" of SAVE, dated July 1976. The survey was initiated by Mr James W. Wilcock, Chairman and Chief Executive, Joy Manufacturing Company, in response to his request to assess the effectiveness of communications between value engineers and their executive management. In his keynote address to the SAVE National Convention (Baltimore, 1975) Wilcock commented that executives, for the most part, do not support value management programs to the degree of commitment necessary for success. The survey found 1) that executive managers are (as a group) not interested in cost improvement, and 2) value engineers have been less than effective in creating a program to interest executive management in cost improvements. A partial summary of statistics from the survey is:

Goal Establishment	
Established by executive head	11 9%
Established by program or line manager	14 6%
Not clearly defined	23 3%
Goal Performance	
Responsibility of line groups	4 9%
No directed goals	27 0%
Submittal of Reports	
To executive management	37 6%
No reports submitted	24 2%
Written	94 0%
Oral	6 0%
Executive Interest	
Active and involved	28 6%
Interested but passive	61 0%
Not involved	10 4%
Miscellaneous	
Programs considered highly successful	27 9%
Presentation of planned program to executive management	26 7%

The Necessity for Task Assignment

Misconceptions and oversimplification regarding many dynamic mechanisms prevail with adverse effect on effective utilization. Here are a few of the more common misconceptions:

- improved productivity is achieved only by working harder or faster
- work simplification results only by cutting out steps in the process
- management improvement benefits cannot be calculated
- energy conservation is an artificial problem
- value management only works on problems
- cost reduction always means giving up something

- paperwork management is concerned only with reducing the amount of paperwork
- achieving life cycle cost (LCC) savings always requires higher first costs
- management by objective requires commitments without resources
- management surveys result only in reports
- employee suggestions increase workload and stir up problems already known to management without the resources to cope with them

These misconceptions can all be corrected through education and application. First, however, regardless of the mechanism used to conserve and protect resources, it is important that the effort desired be a closely reviewed job responsibility. A good way to achieve this is to accept the task as an operational responsibility, commit resources to it, and manage those resources to ensure effective results.

Competing Programs

The common argument when one specific mechanism is pushed and promoted is that it is just another program being demanded when the organization is already burdened with many other worthwhile "programs."

The dictionary defines a program as an "official edict or decree" and a "prearranged plan or course of proceedings." To carry this one step further, the dictionary defines an official act as a formal, written act. And, a prearranged plan is an arrangement of means or steps for the attainment of some objective which, when operational, has personnel assigned to accomplishing the tasks and an operating budget.

General Service Administration planning staff also relates the definition of a program to include the elements of a defined effort, authorized, funded, identified outputs, a unique collection of resources, policies and technologies to achieve a major responsibility inherent in the agency mission.

As analysis shows, of all the possible listings of dynamic mechanisms, GSA planning staff has four such "programs" with measurable workload. These are energy conservation, value management, employee suggestions, and management surveys. These fully meet all of the elements of the definition of a program.

The other dynamic mechanisms do not, at this time, involve as high a level of activity in this agency as do the above four programs.

Picking A Program

If I had to pick just one from the above list of dynamic mechanisms to conserve and protect resources, I would pick value management (VM). VM is a planned effort directed at analyzing the functional requirements of:

> systems, services, procedures, paperwork, regulations, requirements, design, equipment, supplies, facilities and hardware

to achieve essential functions at the lowest total cost, consistent with required performance, quality, reliability, appearance, safety and operation.

The reasons for this choice are several:

1. It has universal application in all of the other dynamic mechanism areas. The objective of VM is to improve value. Improving value can be achieved by:
   - improving productivity
   - simplifying work
   - improving management
   - conserving energy
   - reducing cost
   - reducing paperwork
   - improving LCC
   - achieving objectives economically
   - auditing for problems and performance
2. VM has the advantage of advocating or concentrating on no new techniques other than the relationship of cost and worth to function. It teaches and supports the utilization of all *existing* techniques in application to the proper problem. Figure 2 shows how the role of VM methodology fits into the utilization of all of the other dynamic mechanisms.

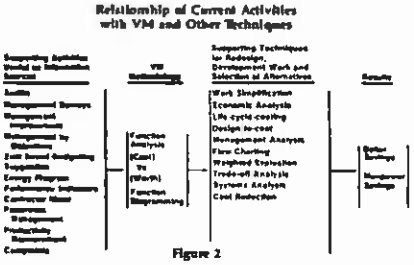

Figure 2

3. VM has a system of identification, study, approval, implementation and followup that can be taught and used by employees at all levels.
4. VM can improve worth and success rate of all agency studies because of its applicability. Not only does the VM program provide a system (VM job plan) to ensure approved VM studies arrive at a definitive conclusion of implementation, VM also improves the quality of the study. It provides the added dimension of studying function and relating cost of function to the worth of functions. Studies that end in paper reports fail because they do not satisfy management. They either define the wrong problem, study the wrong issue, arrive at unworkable solutions, fail to have all the information, fail to be creative, lack empathy for implementation, or fail

to quantify benefits. VM studies specifically address each of these issues as part of the VM job plan. A VM study can be done to determine the function cost and worth of all the dynamic mechanisms previously identified, if desired.

5. And last, our agency has already expended a lot of resources to have a VM program where it has not done so in any other area. Let's build upon its strengths and correct its weaknesses.

Past Agency Performance

In the past five years, our agency has saved $30 million dollars. Regardless of this, there is much room for improvement in program performance in terms of the untapped potential of the program, the uneven distribution of program effort between the various offices and divisions, and the fluctuating attitude of line management towards the program. Our analysis takes each in turn:

First, the good:

1. Our return-on-investment (ROI) for operating this agency program has always shown a profit:

Fiscal Year	ROI
1972	$ 3 84
1973	$ 4 53
1974	$12 85
1975	$ 4 48
1976	$18 09

2. Our "hard" cash savings (appropriated funds) and "impact" savings (future life cycle cost) have provided funding for additional necessary work:

Fiscal Year	Hard Savings	Impact Savings	Total Savings
1972	$ 1,408,000	$ 287,000	$ 1,695,000
1973	1,197,000	633,000	1,830,000
1974	2,164,000	7,877,000	10,041,000
1975	2,924,000	317,000	3,241,000
1976	12,384,000	758,000	13,142,000

3. Our agency is the first and only agency to have a comprehensive VM program in the design phase of facilities under A-E contract. Other Federal agencies, state and local Government, and private sector firms are beginning to follow our leadership.

4. Our contract value incentive clause has received wide praise from the General Accounting Office and many other sources for its simplicity, clarity and fairness. Our processing time and approval percentage for contractor value change proposals is excellent:

Fiscal Year	Average days processing	Percent approved
1972	37 7	82%
1973	28 6	68%
1974	43.9	81%
1975	62 2	66%
1976	39 0	72%

5. During the past five years we have trained more than 750 employees in the techniques of VM through workshops. We have a good potential of resources to draw upon in conducting VM studies.

Next, areas of improvement:

1. Internal participation has never been adequate considering the number of regions below $100,000 in savings. For the 10 regions, here is the record:

	Number of Regions by Amount Saved				
Fiscal Year	> 500K	200-500K	100-200K	< 100K	0 Saved
1972		2	1	4	1
1973		1		5	4
1974	2	3	1	2	2
1975	1	2	1	3	1
1976	5	1	1	1	2

2. The balance of participation between divisions needs improvement. Our judgment is that 95 percent of the savings achieved originated in the Design & Construction Division, with the other 5 percent from Buildings Management Division. Nothing has been saved by the Space Management Division. And, the majority of all savings since 1974 are related to contractual services provided by our A-E's. Hence, many of our employees feel that VM applies only to design work and it only gets done if contracted for.

3. Our contract incentive clause participation has fallen off and is unbalanced:

Fiscal	Total	Number of Regions by No. Received			
Year	No. Received	>10	5-10	1-5	0
1972	41	1	0	4	5
1973	130	3	4	2	1
1974	48	2	2	5	1
1975	41	2	0	6	2
1976	36	0	4	3	3

The surge of participation in 1973 was caused by the purchase contract program. In 1972, one contractor on one project produced 31 of the 41 proposals. In 1973, a second contractor produced 35 of the 130 proposals.

The argument is given that, because of our design program with A-E's, our contractor participation should expect to fall off. This is the same as inferring we have perfect designs, economically ideal construction, and the most technologically advanced components. None of these is true when designing under the constraints of criteria, schedule, first cost and competitive procurement. Our judgment, based on the large number and dollar volume of contracts we have, and compared with experience in the Department of Defense constructions, is that our participation is only 10 percent of what it should be. We need more effort in aggressively marketing the clause with the spirit of making it work.

4. An agency audit (No. 21-4002-PCC dated December 17, 1974) of the VM program confirmed the above and found in addition:

   - A need for an effective and progressive regional program by regional VM Board Members assigned program responsibility.

- A need for higher priority assigned to the VM program by top regional officials.
- A need for more management direction in the motivation of agency employees.
- A need for greater effort to identify and publicize the benefits and rewards available to employees for approved VM proposals, and in conjunction with this, clarification as to when VM is job related.

Statistics from this report read as follows (based on 85 employee interviews by the audit team):

- 22 percent submitted VM suggestions.
- No suggestions made outside of the VM training workshops were approved.
- 62 percent stated that supervisors had not encouraged VM ideas and some directly discouraged participation.
- 50 percent indicated that regional management does not give full support to the VM program.

5. The same audit report recommended that the agency head take the necessary action to ensure that:

- Specific regional VM objectives be established.
- VM objectives, accomplishments, and resources are incorporated in regional performance reporting.
- The regions use all methods for identifying VM studies, including the systematic (or forced methods) as prescribed in the VM Handbook for the agency.

Epilogue

Now that you've read the actual story, I would like to tell you how it all turned out.

The White Paper above, was quite successful. The agency head liked it and put out a pronouncement that he wanted full support for the VM program and that all regions had to participate. Unfortunately, he lasted in his job only a short year and I, the VM Program Director, was transferred to another position and finally left the agency.

The VM program went down the tubes. The bureaucracy finally won by waiting for the inevitable shift in the seasons of Government and power. A true dynamic mechanism! ▲

EXECUTIVES IN CHARGE

DATE	GSA Administrator	PBS Commissioner
1970-72	Robert B. Kunzig	Arthur F. Sampson
1972	Dwight Ink (Acting)	
1972-75	Arthur F. Sampson	Larry Roush
1975		Walter Meisen (Acting)
1975-76	Jack M. Eckerd	Nicholas Panuzio
1977-79	Joel W. Solomon	
1977-78		Tom L. Peyton (Acting)
1978		James B. Shea Jr.
1978-79		Dennis Keilman (Acting)
1979-81	R. G. Freeman III	A. R. Marschall
1981-83	Gerald P. Carmen	Richard O. Haase
1983-85	Roy Kline	L. L. Mitchell (Acting)

Exhibit C

VALUE ENGINEERING: STATUS REPORT
MARCH 1994

NEW ENDORSEMENTS
NEW MOMENTUM

- New Secretary of Defense is Vocal Champion of VE
- Congressional Hearings on Value Engineering set for March 8
- Virginia Legislature Votes Unanimously to Mandate Use of Value Engineering in Capital Projects
- Value Engineering Explained

An Update from John Hoving,

Legislative Representative for the Society of American Value Engineers and Counsel to the Miles Value Foundation

THE HOVING GROUP
1762 Church Street, NW Washington, DC 20036 (202) 939-8980

VALUE ENGINEERING IN THE DEFENSE DEPARTMENT:

SUPPORTERS INCLUDE THE NEW SECRETARY OF DEFENSE

Secretary of Defense William Perry, then Deputy Secretary, spoke at the Pentagon on July 21, 1993, at the presentation of the annual Honorary Awards for Value Engineering Achievements and had this to conclude about Value Engineering:

> **"Whether by reducing costs, increasing productivity, improving durability, reliability or maintainability, Value Engineering helps us to get that extra measure of value for the limited resources which we have."**

During the last fiscal year for the Department of Defense, **4,401 in-house Value Engineering (VE) proposals resulted in savings of $750 million. Another 392 contractor-initiated proposals had an additional savings of $319 million.**

The leadership in the Defense Department recognizes the effect of its VE programs. On December 10, 1993, Under Secretary of Defense Acquisition, Dr. John M. Deutch, wrote:

> **"The DoD Value Engineering (VE) Program, through our internal and industry efforts, reports savings and cost avoidances of over one billion dollars annually, more than any other DoD cost reduction program. . . I would like to increase emphasis on this program."**

[Secretary Perry's remarks and Dr. Deutch's memo appear at the end of this memo]

Value Engineering:

One last uninhibited, expert, objective search for answers

–without blame or recriminations–

before final decisions for a product or service are made.

VALUE ENGINEERING LEGISLATION IN CONGRESS:

HEARINGS SCHEDULED FOR HR 133

AND NUMBER OF CO-SPONSORS INCREASES FOR HR 133 AND HR 2014

Title:	**HR 133: The Systematic Application of Value Engineering Act**
Introduced by:	**Cardiss Collins (D-Ill) and John Conyers (D-Mich)**
What the bill would do:	**HR 133 would maximize the use of VE by requiring each federal agency to use VE in their projects or programs that comprise 80% of the agency's budget.**
Hearings Scheduled:	**March 8, 1994** Subcommittee on Legislation and National Security of the House Government Operations Committee 10 a.m. in 2154 Rayburn House Office Building
Status of Co-sponsors:	**Increased from 28 to 48.**

[Co-sponsors: Wayne Allard (CO), Robert Andrews (NJ), Dick Armey (TX), Bill Baker (CA), Roscoe Bartlett (MD), Sherrod Brown (OH), Leslie Byrne (VA), Eva Clayton (NC), Barbara-Rose Collins (MI), Christopher Cox (CA), Michael Crapo (ID), George Darden (GA), Peter DeFazio (OR), Norman Dicks (WA), John Doolittle (CA), Sam Farr (CA), Bob Filner (CA), Sam Gejdenson (CT), Pete Geren (TX), Bob Goodlatte (VA), Bart Gordon (TN), Martin Hoke (OH), Bob Inglis (SC), Andy Jacobs (IN), Tim Johnson (SD), Jack Kingston (GA), Scott Klug (WI), Mike Kreidler (WA), Carolyn Maloney (NY), Matthew Martinez (CA), John M. McHugh (NY), Martin Meehan (MA), Constance Morella (MD), John Murtha (PA), Stephen Neal (NC), John Olver (MA), Bill Orton (UT), Tim Penny (MN), Charles Rangel (NY), Tim Roemer (IN), Edward Royce (CA), Louis Stokes (OH), Dick Swett (NH), James Walsh (NY), Albert Wynn (MD), Sidney Yates (IL), William Zeliff (NH), Dick Zimmer (NJ)]

VALUE ENGINEERING IN CONGRESS (CONTINUED)

Title:	**HR 2014: Value Engineering Better Transportation Act of 1993**
Introduced by:	**Leslie Byrne (D-VA)**
What the bill would do:	**HR 2014 would provide federal dollars as incentive to state transportation programs that include VE reviews.** By increasing the federal project share to state transportation departments that use value engineering, **the financial burden on the state is reduced. When a project's overall cost goes down through value engineering, the federal government spends less, and that saves taxpayer dollars.** Her bill does not mandate or penalize those states that choose not to use value engineering, but it does provide local, state, and federal governments with an incentive to save money while creating a better product.
Status of Co-Sponsors:	**Increased from 6 to 12** [Co-sponsors: Rick Boucher (VA), Eric Fingerhut (OH), James Moran (VA), Norman Sisisky (VA), Eva Clayton (NC), Robert Andrews (NJ), Dick Zimmer (NJ), Scott Klug (WI), Herbert Bateman (VA), Dan Schaefer (CO), George Darden (GA), Bart Gordon (TN)]
History:	As a State Senator, Rep. Byrne revitalized the Virginia Department of Transportation (VDOT) in 1990 by requiring VE reviews on all transportation projects costing $2 million or more. The VDOT, seeing VE's usefulness and concrete, money-saving results, actually expanded the use of VE into other projects.

The Government Accounting Office (GAO) has measured VE savings at typically 3 to 5 percent of project cost.

VALUE ENGINEERING AND THE VIRGINIA STATE LEGISLATURE: A UNANIMOUS ENDORSEMENT

The Virginia State Legislature recently passed by 99-0 in the House and 38-0 in the Senate, Senate Bill No. 125. **This law mandating Value Engineering on capital projects will be signed into law after the veto session in April and will become effective July 1, 1994. It is patterned after HB 423 (1990) by then Delegate Leslie Byrne.** A major reason for the success of the bill is the strong record of VE in Virginia; VDOT reported savings of $37,752,214 through the second quarter of FY 93/94 thanks to Value Engineering. The bill reads:

> Senate Bill No. 125
> 2.1-483.1:1. Use of Value Engineering.
>
> The Department of General Services, through its Division of Engineering and Buildings, shall ensure that value engineering is employed for any such project costing more than two million dollars. For purposes of this section, "value engineering" means a systematic process of review and analysis of a capital project by a team of persons not originally involved in the project. Such team [which shall include appropriate professionals licensed in accordance with Chapter 4 of Title 54.1] may offer suggestions that would improve project quality and reduce total project cost by combining or eliminating inefficient or expensive parts or steps in the original proposal or by totally redesigning the project using different technologies, materials, or methods.
>
> The Director of the Department of General Services may waive the requirements of this section for any proposed capital project for compelling reasons. Any such waiver shall be in writing, state the reasons for the waiver, and apply only to a single capital project.

According to VDOT Commissioner Ray D. Pethtel, "VE has saved approximately 20 million transportation dollars over a span of three years, and including administrative costs, has provided the Virginia Taxpayers a return above costs ration of 34:1."

SOME FACTS ABOUT VALUE ENGINEERING

WHERE DID VALUE ENGINEERING COME FROM?

Although now popular and successful all over the world, "Value Analysis (VA)" and its partner "Value Engineering (VE)" were developed originally by an American. Lawrence Miles, of General Electric, devised the VE method in the closing months of World War II as a way to make the most efficient use of limited wartime funds and raw materials. Both processes work as "saving scalpels" -- VE takes place in the design stage; VA after production has begun.

WHAT IS THE VE PROCESS AND WHERE IS IT APPLICABLE?

Value Engineering is a unique, problem-solving technique. It can be applied anywhere there is a function that must be performed and a way to measure it. Or to quote the definition used by the Virginia Legislature: "'value engineering' means a systematic process of review and analysis of a capital project by a team of persons not originally involved in the project. Such team...may offer suggestions that would improve project quality and reduce total project cost by combining or eliminating inefficient or expensive parts or steps in the original proposal or by totally redesigning the project using different technologies, materials, or methods."

WHAT'S INVOLVED IN A VE REVIEW?

Once the decision is made to analyze a given plan or process, a VE team is assembled to make an analysis in a concentrated, intensive review.

For each problem, the multi-discipline team, none of whom were involved in the original design, identifies -- actually reduces the project to -- the essential actions that must be performed in that problem area. After the basic functions are agreed upon, the team then brainstorms in many creative and pragmatic ways to accomplish the essential function. Specifically, the phases of a formal VE study are:

- Information gathering (What is now being done?)
- Function Analysis (What must be done?)
- Creative Brainstorming (What else will do the job?)
- Evaluation (Which ideas are best?)
- Development (What is the impact if adopted?)
- Presentation (Show VE recommendations to owner/management.)
- Implementation and Audit (Tally annual impact, improvements, savings.)

IS VE SOMETHING THAT CAN BE USED ONLY IN CONSTRUCTION PROJECTS?

VE is absolutely not limited to construction, or what we generally consider as an engineering project. Remember – any process that can be measured. VE was used with great success in a hospital. Outpatients were taking a disproportionate amount of time to be processed and treated. Thanks to a VE review of how patients were admitted, processed, diagnosed, and treated, the amount of time of a patient's stay was significantly reduced, cutting down on waiting room time, form-filling delays, and freeing the doctors' time to see more patients.

"REVIEWS" CAN BE EXPENSIVE. WITH VE, DO YOU END UP SAVING MORE THAN YOU SPEND?

VE is very cost efficient.

Over the past twenty years of so, typical savings in construction projects have averaged five percent or more of the project construction budget. In the past few years, the Navy and Army construction arms have generated over six percent savings.

The ratio of Value Engineering savings to Value Engineering costs in construction is traditionally better than ten dollars saved for each Value Engineering dollar spent, including all expenses such as time and support.

In the 1987 Value Engineering Senate hearings, the EPA (which is the only federal agency now required by law to perform Value Engineering) returned $34 for each Value Engineering dollar spent – a Return On Investment (ROI) of 34-to-1.

The City of New York's Office of Management and Budget in the same Value Engineering hearings reported a savings ratio of 114/900 or 11.6 percent of the total project budget. This is a Return on Value Engineering Investment of 114/1.2 or $95 saved for each Value Engineering dollar spent.

WHAT MAKES VALUE ENGINEERING UNIQUE?

IT HAS A TRACK RECORD
IT'S VERSATILE
ITS SUCCESS CAN BE MEASURED
IT WORKS

FOR MORE INFORMATION ABOUT VALUE ENGINEERING, ITS HISTORY, AND POTENTIAL USES IN GOVERNMENT AND THE PRIVATE SECTOR, CONTACT HAL TUFTY, PRESIDENT OF THE MILES VALUE FOUNDATION AND EDITOR/PUBLISHER OF VALUE DIGEST, A NEWSLETTER DEVOTED TO DEVELOPMENTS IN VALUE ENGINEERING. HE CAN BE REACHED AT (202) 347-8998.

Remarks made by Deputy Secretary of Defense William Perry at the Annual Honorary Awards for Value Engineering Achievements For Fiscal Year 1992

July 21, 1993, The Pentagon

A British writer, Graham Green, once wrote: "There always comes a moment in time when a door opens and lets the future in." The ending of the Cold War has opened that door for the United States and the future is out there waiting to come in. The challenge to the managers in the Defense Department is what we can do to help shape that future; What we can do to restructure our Defense Department for the new era which we are now entering.

Professor Theodore Levitt of the Harvard Business School said that most managers manage for yesterday's conditions because yesterday is where they got their experience and made their successes, but management is about tomorrow, not yesterday. Most of you in this room, and certainly myself, have accumulated our management experiences during the Cold War, now we have a very different job. We must restructure the Defense Department for tomorrow's security problems which are very different from the problems of the Cold War.

The ending of the Cold War has not brought about an ending of history as forecast by Professor Fukuyama. The security problems we face in Bosnia, Iraq, and Somalia already are requiring military forces to be based there, and we continue to face problems in North Korea, and civil wars in the former Soviet Union that challenge our security.

So while the end of the Cold War has not brought about the end of history, it has very clearly brought about an end of the increasing Defense budget which we had during the late '70s and the '80s. The American public and the American Congress are both asking for peace dividends, and this has led a beginning in 1986 to a gradual reduction in the Defense budget which over the ten year period '86 to '96 looks like it will amount to about 40% reduction in real terms.

So our management challenge is how do we cope with very difficult security challenges which I just described to you with this dramatic reduction in resources. That is to say in the face of these budget decreases, how do we maintain the distinctive advantage which our forces had in Desert Storm. I would describe those advantages as three-fold: an advantage in people and leadership; an advantage in readiness; and an advantage in technology.

Now maintaining those advantages in the face of a 40% reduction in resources, we might be tempted to say as Winston Churchill in an exasperated tone once said to the British Parliament, "Do not ask me to take sides against arithmetic." And that's the arithmetic with which we are confronted--40% reduction--and the problem we are confronted with is maintaining that distinctive advantage of our military forces. Now how we take sides against arithmetic is the management challenge we face. And I would submit to you that there are three management imperatives to do that.

The first of those is that we will have to reduce the size of our force--we were, already under the Bush Administration, in the process of going from 2.1 to 1.6 million. Under the Clinton Administration we now are projecting going as low as 1.4 million.

A second of those is reducing the infrastructure: the bases, the depots, the Defense industry consolidation that is going on; all of those suggest that if we are reducing the budget and reducing the force size, the infrastructure needs to come down proportionally with that.

And then finally we have to be able to reduce the overhead in our system proportionate with these reductions.

The net result of this if we do it right is that while we will have a smaller force it will be a force with the same capabilities as our Desert Storm force, and a force that is ready to fight and win anytime that may be necessary. So our issue is how to spend these Defense resources wisely and that involves reducing the cost of doing business. But we just can't reduce the cost we have to maintain the performance at the same time we are doing that. And that brings us precisely to the theme of this whole meeting which is Value Engineering. Whether by reducing costs, increasing productivity, improving durability, reliability or maintainability, value engineering helps us to get that extra measure of value for the limited resources which we have.

Improvements that have been brought about by the people that we are here to honor today have been truly outstanding. We have had estimates that have over the past year there have been more than a billion dollars worth of cost savings that were generated by the value engineering program. This would have greatly pleased Larry Miles who was the GE Engineer who invented value engineering during World War II and for a very similar objective that we are looking at today. But you today represent Larry Miles' legacy and you also inspire all of the military and civilian personnel who are trying to improve our nation's defenses everywhere, everyday. So thank you and now let's proceed with the awards.

[In all, 25 awards were given for VE achievements in the Army, Navy, Air Force and the Defense Logistics Agency in seven categories: program management; individual; procurement/contract administration; Value Engineering professional; field command; installation; and contractor.]

MEMORANDUM for Secretaries of the Military Departments, Directors of Defense Agencies, DOD Comptroller

From : **John M. Deutch, Under Secretary of Defense.**

Subject: **Office of Management and Budget (OMB) Circular A-131, "Value Engineering"**

Date: **10 December 1993**

In view of constrained budget realities it is essential that the Department strive to achieve greater value for acquisition dollars available. The DoD Value Engineering (VE) program, through our internal and industry efforts, reports savings and cost avoidances of over one billion dollars annually, more than any other DoD cost reduction program. VE offers a proven structured approach to achieve key objectives of eliminating unnecessary requirements, reducing acquisition and life cycle costs, and is in consonance with DoD acquisition reform objectives. I would like to increase emphasis on this program.

Moreover the Office of Management and Budget, recognizing the importance of this program, is expanding and strengthening current VE efforts across all Departments and Agencies through its new OMB Circular A-131. This circular requires: more rigorous reporting and record-keeping procedures; a more structured planning and review process; expanding application of VE from the traditional cost reducing approach to a product, service, and process improvement orientation; and inclusion of necessary funding in the annual budget requests to OMB.

To help strengthen the emphasis on VE I am establishing a VE Program Executive Steering Group. I have asked the Deputy Assistant Secretary (Production Resources) to chair this Steering Group. The Steering Group will develop a comprehensive, coordinated, but realistic, DoD VE program to reduce nonessential program and acquisition costs, reflecting the policies outlined by OMB, and identify and commit required resources. I am requesting that you identify an individual to participate as a member of the Steering Group within 15 days of this memorandum.

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