DEFENSE INDUSTRIAL BASE: NEW STOCKPILE OBJECTIVES

HEARINGS

BEFORE THE

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WEDNESDAY, NOVEMBER 24, 1976

CONGRESS OF THE UNITED STATES,
JOINT COMMITTEE ON DEFENSE PRODUCTION,
Washington, D.C.

The committee met, pursuant to recess, at 10:05 a.m., in room 5302, Dirksen Senate Office Building, the Honorable William Proxmire (vice chairman of the committee) presiding.

Present: Senator Proxmire.

OPENING STATEMENT OF CHAIRMAN PROXMIRE

Senator PROXMIRE. The committee will come to order.

Today we are considering the strategic and critical materials stockpiles, as part of the Joint Committee's review of the defense industrial base.

The strategic stockpiles are an outgrowth of the cutoff of foreign materials supplies during World War II. In 1946, the Congress passed the Stock Piling Act. Since then, it has created the Supplemental Stockpile and the Defense Production Act Inventory.

Postwar experience, and especially the severe material shortages of 1973 and 1974, has confirmed the wisdom of maintaining a stockpile as a hedge against disruptions in foreign supplies of vital materials for which the United States is heavily dependent on imports.

Recognizing the commonsense wisdom of stockpiles, however, does not tell us very much about how to manage them to suit our defense interests. It doesn't tell us very precisely what materials to hold or how much of these materials to stockpile in a technologically, politically, and economically volatile world.

Moreover, the history of our stockpiles is replete with examples of their use or abuse for budget balancing, for price stabilization and for almost every other purpose other than the only legal one—strategic mobilization.

The stockpiles have been especially controversial since 1973, when new guidance was issued that virtually eliminated the stockpiles as we had known them before. This controversy has led to a year-long interagency study and the development of a new stockpile policy. It is this policy that the committee intends to examine today.

The new policy has two parts: a new set of assumptions and a new formula or methodology for calculating stockpile goals. This complex new formula is an abrupt departure from the old system of stockpile objectives. Right at the start, it will increase our stockpile require-

ments for 72 of the 93 essential materials. It will increase the cost by literally billions of dollars.

Furthermore, it permits the stockpile goals to be revised annually to account for changes in a variety of economic and political factors. And it calls for a new stockpile acquisition and disposal plan to be submitted to the Congress every year for the necessary appropriations.

Stockpile planning will be far more fluid and difficult to comprehend than it has been in the past. With a constantly changing acquisition and disposal plan and a routinely changing set of stockpile goals, there seems to be little or no way of keeping track of where it stands or of getting a good grip on what this new stockpile will consist of or what it will cost us. There is a real potential here for stockpile costs to go steeply upward. If a close friend of the administration wishes to have a material bought in which he has a big financial interest, why couldn't this easily be done with little or no accountability? If the President wants to save a billion or two to balance his budget or make it look good, wouldn't this new stockpile policy easily permit it?

There are many other important issues at stake in this new policy. We want to know, for example, why civilian materials requirements are being included in what is, by statute, a national defense stockpile. This gives it the appearance of an economic stockpile rather than a strategic stockpile. There is a real question in our minds, I think, as to whether we need a stockpile as big as the new one now being planned; especially in an era of relative peace and when the Joint Chiefs of Staff are planning for short wars, not long ones. Are we overinsuring against the negligible military threat of an extended conventional war? What are the real motives that led to these increases in stockpile goals, so soon after they had been dramatically reduced?

We want to know, too, whether this new policy contemplates using the stockpile as a unilateral buffer stock against cartels of foreign producers and for other forms of economic warfare. Or whether it is aimed at stabilizing world or domestic materials prices. In this connection we would be interested to know whether the current statutes permit use of the stockpiles for these or other purposes, such as catering to special interests. We need to know the effect of disposal and acquisition programs on the civilian economy, especially markets, prices and employment. Will this hoarding of materials further retard economic recovery? We need to be assured that any other use of the stockpile, if permitted, would not exhaust its resources in a way inimical to our national defense, which of course is the basic justification for stockpiling.

We also want to examine the new assumptions that drive stockpile planning to see whether they are defensible. We want to look at the new methodology to be sure it is manipulation and tamperproof and not just an economically elegant shell game.

Finally, we want to examine the new stockpile policy and formula in the context of our national materials situation. We want to know whether it takes other initiatives into account, such as the forthcoming recommendations of the National Commission on Supplies and Shortages. If the new stockpile policy does not fit comfortably into a total strategy for dealing with materials problems across the board, then it will not be of much use and will not long survive.

Perhaps the biggest issue at stake here is the overall credibility of the administration's new stockpile policy. The administration discovered earlier this fall just how deep is congressional skepticism of stockpile management when it failed to pass a major stockpile disposal bill. The entire history of the stockpiles permits no attitude other than one of healthy skepticism.

General Bray, we are glad to have you back before the Joint Committee. The committee appreciates what you and your staff have done to try to inform us on the new stockpile policy. However, there are a number of important questions remaining and we are going to need a lot of straight answers before the Congress is going to be comfortable with this new approach to stockpiling.

I prefer that we conduct today's hearing entirely in open session. If there is material that cannot be divulged in the open hearings, I would appreciate it if you would bring it to my attention and submit it to the committee separately in writing or perhaps in an executive session later on.

We will accept your written statement for the record and you may summarize your remarks.

Your written statement, as a matter of fact, is concise. Perhaps you can just go ahead with that and we will take up.

STATEMENT OF MAJ. GEN. LESLIE BRAY, JR., U.S. AIR FORCE, RETIRED, DIRECTOR, FEDERAL PREPAREDNESS AGENCY

General BRAY. Mr. Chairman, thank you very much.

First, before I read my short written statement, let me say that I appreciate very much the interest that this committee is showing in this particular area. I agree wholeheartedly with the issues as you have announced them. Those are exactly the issues that we have foremost in our minds. I believe we have reasonable answers to those sorts of questions, and I welcome the opportunity to discuss them with you in a forthright and open manner, and I hope I can be helpful in gaining a better understanding and appreciation of some of these issues as we see them.

Mr. Chairman, at your request, of course, I am here to discuss the national stockpiles of strategic and critical materials established pursuant to the Strategic and Critical Materials Stock Piling Act of 1946, as amended. I especially welcome this opportunity to discuss national stockpile planning in the context of your interest in industrial preparedness planning because these two areas are intimately related and they are both special responsibilities of the Federal Preparedness Agency.

As Director of FPA, I am responsible for policy guidance and coordination of the emergency plans and preparedness assignments of Federal departments and agencies relative to the mobilization of the human, natural and industrial resources of the Nation to meet the conditions of a national emergency, including attack upon the United States. These responsibilities flow primarily from the National Security Act of 1947, the Strategic and Critical Materials Stock Piling Act of 1946, the Defense Production Act of 1950, the Federal Civil Defense Act of 1950, all as amended, and related authorities vested in the President of the United States.

The spectrum of our activities covers the emergency planning of Federal, State, and local government agencies, national economic resources, the full range of possible national emergencies, and the economic and strategic implications of emergency preparedness plans. Therefore, I am especially aware of the numerous and complex interactions between the factors that must be considered in emergency preparedness planning. From this perspective, I will bring you up to date on the new stockpile policy guidance we have received, and I will try to discuss some of its implications, especially the near- and long-term economic and strategic implications.

Recently, a year-long interagency study of stockpile policy was completed under the chairmanship of the Federal Preparedness Agency. The study resulted in a Presidential decision and the issuance of new stockpile policy guidance by the National Security Council. The new policy calls for a strategic and critical materials stockpile capable of supporting U.S. defense requirements during a major war; over a 3-year period; assuming large-scale industrial mobilization and the associated increased materials demands; and providing at the same time for a broad range of basic civilian economic needs to insure the health, welfare, morale, and productivity of the civilian population needed to maintain the vitality of a wartime economy. This policy goes well beyond the stockpile guidance issued in 1973. The new guidance calls for a different configuration of the stockpile than we presently have and it will entail major programs of both acquisitions and disposals. Because the statute requires us to avoid, to the extent possible, any undue disruption of the market, the rate at which materials can be bought or sold will necessarily be constrained. Further, data on materials requirements and domestic and international situations constantly change. For both of these reasons, any achievement of the new stockpile goals, as we now call them, will probably be a long-term proposition stretching out over a number of years.

An important procedural change, known as the variable confidence level approach, was adopted during the stockpile policy study. In this approach, materials required during a period of national emergency are specifically identified as being required for either defense, essential civilian, or general civilian use. Planning factors used to estimate supply sources and availability can be varied for these three groups. More conservative factors can be used for the defense portion of the requirements, and more moderate factors for the other requirements. Separate estimates for each year of an assumed war and the relative priority based on the three groups can also be used.

The study also recommended a new stockpile planning process to permit updating of stockpile goals and to better coordinate disposal and acquisition decisions. The new planning process will involve maintaining current data and planning factors, developing an "Annual Materials Plan" and providing for recurrent review of stockpile policy guidance. The Annual Materials Plan, which will fully take into account the results of industry and market studies performed on a commodity-by-commodity basis, will allow for changes in national security planning, market and economic conditions, international events, and budgetary considerations. This plan will be integrated into the budget cycle.

I would also like to note that the study of stockpile planning factors was sensitive to congressional reluctance to authorize disposals of excess materials under the 1973 guidance.

The difference between the term objectives and our new term, goals, is more than a semantic one. When we talked about stockpile objectives in the past, there was an implication that we would move to acquire some fixed quantities as quickly as possible. Stockpile goals will be more dynamic, changing as there are new developments in data, technology, and other domestic and international events that tend to make the static objectives rapidly obsolete. The stockpile goal for a material is a long-term quantity, but we look at short-term steps toward it when we review priorities and make recommendations for the Annual Materials Plan.

We are continuing to study the Nation's industrial preparedness for emergencies. One of the most important tools that we have in strengthening it is title III of the Defense Production Act. The strategic stockpile authority is another important way in which we can help to make our industrial base strong. The new planning process is designed to make stockpiling more sensitive to technological changes and other developments important to our industrial base.

Mr. Chairman, this is the end of my prepared statement. However, I will be happy to answer any questions you may have.

[Prepared statement of General Bray follows:]

STATEMENT BY LESLIE W. BRAY, JR., DIRECTOR, FEDERAL PREPAREDNESS AGENCY, GENERAL SERVICES ADMINISTRATION

Madam Chairman and Members of the Committee: At the request of the Vice Chairman, Senator Proxmire, I am here to discuss the national stockpiles of strategic and critical materials, established pursuant to the Strategic and Critical Materials Stock Piling Act of 1946, as amended. I especially welcome this opportunity to discuss national stockpile planning in the context of your interest in industrial preparedness planning because these two areas are intimately related and they are both special responsibilities of the Federal Preparedness Agency (FPA).

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The difference between the term "objectives" and our new term "goals" is more than a semantic one. When we talked about stockpile "objectives" in the past, there was an implication that we would move to acquire some fixed quantities quickly as possible. Stockpile goals will be more dynamic, changing as there are new developments in data, technology, and other domestic and international events that tend to make the static "objectives" rapidly obsolete. The stockpile "goal" for a material is a long-term quantity, but we look at short-term steps toward it when we review priorities and make recommendations for the Annual Materials Plan.

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This is the end of my prepared statement. However, I will be happy to answer any questions you may have.

Senator PROXMIRE. Thank you very much, General Bray.

General Bray, I notice on the first page of your statement you point out that the stockpiling responsibilities all flow from legislation enacted right after World War II, and with the experience of World War II firmly in mind, and I notice on page 2 (see page 5) you refer to the fact that the assumption is a major war over a 3-year period, assuming large-scale industrial mobilization and providing for a broad range of basic civilian economic needs to ensure the health, welfare, morale, productivity, and so forth. A 3-year major war.

How do you envision that? Who would be our adversary in a 3-year major war? It seems to me this almost is like the cartoon I saw the other day of a general saying that he had seen the latest movie version

of King Kong and we had to be prepared for any kind of an emergency. We don't know, we might be confronted with King Kong on the Empire State Building, and therefore we have to be prepared for that kind of a threat, and prepared to confront it.

I wonder if a 3-year major war isn't almost in the same kind of a category.

General BRAY. Mr. Chairman, I think certainly the length of a war is a very important consideration in establishing any stockpile policy.

Let me try to respond directly to your question. I think the first point to make is that we don't necessarily assume in the study that any war will be 3 years. We think that our stockpile planning ought to be based on the 3-year period. Now, there is wide difference of opinion as to what the nature of a war with a potential adversary is, or the form it might take. Differences exist in the defense establishment, JCS and among other strategic and defense planners. There is a group of people who think that any continued, long term conventional war in the future would be totally out of the question, that any future war will simply be a short-term nuclear spasm exchange.

They may be right, and I certainly am not in any position to say that they are wrong.

There are other people, however, who think that as long as we have an adequate strategic nuclear deterrent force, and as long as we can maintain viable mutual assured destruction capabilities between ourselves and the Soviet Union, that the chances of an outbreak of strategic nuclear war on that scale would be extremely remote. It is in all of our interests to further policies and programs that will do that.

There is a group of people who feel that if a strategic nuclear war is unlikely, and if we can maintain a very viable deterrent stability between ourselves and the Soviet Union, the likelihood that future disputes will be resolved on a conventional basis increases.

Now, even within the conventional area, Mr. Chairman, there are differences of opinion.

Senator PROXMIRE. Well, let's stop there, though.

General BRAY. Yes, sir.

Senator PROXMIRE. You talk about a stalemate on a nuclear basis because this might be mutual suicide or might not. We have had testimony recently before this committee that there is some reason to expect the Soviet Union might engage in a pre-emptive nuclear strike. However, it is just hard for me to envision a major war which would be, after all, a war between this country and the Soviet Union, lasting for 3 years, conventional armaments, that wouldn't, one way or another, lead to a nuclear war.

Now, maybe that is possible, but I just can't imagine the scenario.

Now, we may have another Vietnam war—God help we don't—and there is every reason to expect that we have learned a big lesson from it, but that is a possibility. But that wouldn't be a major war, at least in the sense of needing this kind of strategic stockpile that we are talking about here.

General BRAY. Yes, sir, I agree, that is not the type of war we are talking about. I do think, as I said, that the type of conventional war that might break out in Europe, for example, is a type of war that is of vital concern to all of us.

Now, there are different views that say that if conventional war does break out, what are the likelihoods of it remaining conventional, or even if it does, won't you reach some decisive point within a reasonably early period of time?

Well, I don't know of anyone, Mr. Chairman, who can assure you or anybody, first, that the war will not remain conventional, and second, I would hope that we could reach early determinations in any outbreak of conventional war and bring about an early termination of it.

Senator PROXMIRE. It just seems absolutely insane that we would go on in a conventional war with the Soviet Union, killing as many Russians as possible, or they killing as many Americans as possible, both trying hard to win, and then somehow at the same time having the sanity and good sense not to engage in a nuclear war.

Now, anything is possible. As I say, we might have King Kong on top of the Empire State Building, too, but I think if we are going to spend billions of dollars, we ought to consider what the prospects are that make some sense.

General BRAY. I think that we ought to have the option. If a conventional war were to break out on a large scale between major adversaries, we in the United States need to have the option of continuing that war as opposed to suffering a negotiated defeat, or as opposed to forcing us to go to a strategic nuclear exchange.

Now, I am not ruling out the fact that, of course, you may be exactly right. It may be impossible to prevent going to a strategic nuclear exchange. I would hope that that is preventable, and in case that it is, our options ought to be such that we have a capability of continuing in that role if the Soviets have the capability and an option of continuing in that role. I see nothing to indicate, Mr. Chairman, that they, at least, have ruled out the likelihood or even the probability of an extended conventional conflict with the United States.

We are not suggesting that this is the most likely situation to occur. What we are suggesting is it would be extremely risky for us to go into a situation where we in the United States no longer have the option of continuing a largescale nonnuclear conflict, and have the only two remaining sort of extremes of the spectrum: escalating to strategic nuclear war, or suffering a negotiated defeat. We ought to have better options than that, and the strategic stockpile is an area, I think, that could be managed in a way that could permit us some options of continuing for a longer period of time.

Senator PROXMIRE. Then what we are buying with the stockpile is the additional options.

General BRAY. Yes, sir, we are buying additional options that do not force us into the two extremes.

Senator PROXMIRE. In the event that as some may think and I think is extraordinarily unlikely that we would get into a prolonged conventional war, a major war.

General BRAY. Yes, sir.

Senator PROXMIRE. Well, let me go on.

General Bray, there has been a lot of concern about the potential cost of this greatly enlarged stockpile. Of the 91 materials in the stockpile, as I said, the goals for 74 of them have been increased over

the 1973 objectives, and I understand the goals for 52 of them have been increased over the pre-1973 objectives.

Is there some way that you can give us a reasonable estimate of what all this material buying will cost us before we begin this ambitious acquisition program?

General BRAY. Mr. Chairman, I want to be just as responsive to that question as I can, and let me start by saying to you that I think I need to explain very clearly, if I can, how we look at the term "the new goals."

In doing our stockpile study, there was first one very broad conclusion that came out to all of us, and that was that the stockpile in its present form had some materials in it that we did not need under any conceivable situation. The stockpile in its present form is a conglomeration of material left over from World War II, and to some extent from the Korean war, and in fact, 95 percent of it was acquired prior to 1959. But that is not the most important part of the conclusion.

The second important part of that conclusion is that there are things we need in the stockpile that we do not now have.

Now, the magnitudes of things in it that we don't need, and the magnitudes of the things we do need are so great that we are particularly sensitive to the requirements of the statute that says that if we make any disposal of excess materials, we must do so in order to try to avoid disruption of the market, and to try to protect producers, processors and consumers. Similarly, in the acquisition of materials, the law tells us that when we have to acquire materials, to try to do so to the extent practicable from excess materials that are on the market.

So it is clearly the intent of Congress and of the law that undue disruption in either the acquisition or disposal process be avoided.

Now, when we look at the magnitude of materials that we think need to be gotten rid of, and the magnitude of materials that we think need to be acquired and those provisions of the law, it is clear to us we cannot do that in a short period of time, and it is going to stretch out over a good number of years.

The period of years was asked of me a couple of times. Is it 10 years? I think it will be more than that, frankly, before we can fully implement the direction in which this policy proceeds.

Now, if it is going to have that long a period of time, Mr. Chairman, there are two other factors I need to mention. One of the things that was wrong with our old——

Senator PROXMIRE. Well, let me just interrupt. If we go on indefinitely, you say it will be more than 10 years, we wonder what value this is. After all, you have some kind of a goal or some kind of objective, but if you are never going to achieve it, forget it.

General BRAY. I do think we will be moving toward fulfillment of the goal and certainly after 5 years we should be closer to the fulfillment than we are now, after 10, much closer, and so forth. So I think we will close in on that and reach the point where we can tell anybody precisely what is the remaining imbalance and how much it will then cost in the short term.

Senator PROXMIRE. Well, can you tell us what will be more or less the limits of the cost of it, say, for the first 3 years or the first 5 years?

General BRAY. Oh, the first 3 years or 5 years, Mr. Chairman, I would anticipate that our proposals to dispose of inventories would probably exceed——

Senator PROXMIRE. Dispose of stockpile.

General BRAY. That our proposals to dispose of materials in the next 5-year period should generally be in consonance with the acquisitions that we would want to make in the next 5-year period.

As a matter of fact, I would presume, and it would be my general view right now, that the disposal should even exceed slightly what our planned or possible acquisitions might be. So I would say for the next 5 years——

Senator PROXMIRE. Well, how can you be making progress, then, in view of the fact that this would seem, on the basis of the estimates I have seen, to involve several billion dollars of additional cost. Your theory sounds good, and it is attractive to all of us who want to hold down Government spending, but I wonder if it is going to advance us toward those goals in a sensible way.

General BRAY. Yes, sir, I think it will. At the end of the 5-year period, the materials we would then have in the stockpile would be related much more directly to our needs than is the current stockpile. We could proceed for the next 5 years without any significant capital investment, as long as we have authority from Congress to dispose of some materials as we go along. We would be achieving our goals. We would have a much better composition of the stockpile at the end of that period of time.

So I would say for the next 5 years I would not see any great cost to the taxpayers.

Now, also in the next 5 years, Mr. Chairman, another thing I meant to mention to you is that in our calculations, we tried to establish a procedure that takes into account changing data as it becomes available to us, and that was one thing wrong with our previous system. We had up until this summer, 1976, stockpile objectives that were established in 1973 based upon data they knew was obsolete and out of date, and we needed to have a system to keep it current. So I would hope as we go through each year, say, in the next 5-year period, we will be updating our goals with new data as it flows in through our normal collection of economic systems. And we would have, at the end of that period, a much more reliable and effective stockpile than we have right now.

Senator PROXMIRE. Let me give you a specific example.

General BRAY. Yes, sir.

Senator PROXMIRE. How can you be so sure we can sell what is in excess, for instance?

I understand there is a demand for tin and silver in excess, but how about some of these other things, almost everything else the demand is highly questionable.

General BRAY. There are three things, I think, to answer the question. First of all, of course, the law requires that we have specific congressional authority—and that is the first prerequisite—and it is up to us to come to Congress and present a case, clear, and open where we can get that judgment from Congress as to whether it does want us to dispose of those materials. Second, we will be devising our Annual Materials Plan exactly in view of the consideration you raised. We

will do commodity-by-commodity market analysis and determine whether or not in that year it is likely that there will be a demand for those particular materials.

Now, at this point it does look like for the next 5 years that we could and must stretch out our disposals if we don't want to unduly disrupt the market, and that there will be an adequate demand in that time period for the materials, provided Congress gives us the authority to provide the dollars that we will need to acquire materials during the same time.

Senator PROXMIRE. I don't see how you can tell what is going to happen in the next 3 to 5 years on commodity prices. We know how they fluctuate, and I think there would be a good prospect that what the Government is buying, and buying in large amounts might rise in price, and what the Government is selling, and selling in large amounts might not rise as rapidly, and when you are in that position, it would seem to me the cost on what we buy would be a lot more likely to increase rather than to even out or let us save money.

General BRAY. Well, it certainly could. I certainly agree with you, Mr. Chairman. We don't know what is going to happen to prices, and I would certainly want to make that statement very clear.

That is why in some past appearances that I have made before groups, I have been most hesitant to try to put a total price on what might occur in the next 15 years, because I have absolutely no knowledge as to what the price increases might be for materials.

With regard to your question, I would certainly agree with you that there is a likelihood that the prices of materials we need might well go up more than the prices of materials we want to dispose of. We will need to look at that on a yearly basis, and although I gave you a judgment that our revenues from disposals would probably exceed the costs of acquisitions very slightly in a 5-year period, I certainly have no basis for giving you a flat statement and guaranteeing that in no year in the next 5 years would our acquisitions not exceed disposals. I think that is a possibility, and I have no argument with that. Our objectives, generally though, will be to dispose of materials in consonance with our plan to acquire materials during the next, say, 5- or 10-year period.

Senator PROXMIRE. Now, the stockpile goals are changed frequently, and I understand they might be under this new formula.

Won't we end up with unsalable excesses in some materials and large shortfalls in others as requirements change?

General BRAY. Yes, sir. I think our experience has been over the years that certainly we do end up with materials in the stockpile that are not salable, that we do not have an immediate market for. When we have that, we will continue to stretch out disposals and feed very small amounts into the market to try to get rid of them over longer periods of time.

Senator PROXMIRE. Now, I raised the point in the course of my questioning that this could be used for budget balancing purposes. I have great respect for President Ford and President Carter and all our Presidents have been men who wouldn't engage in this thing, I am sure, under most circumstances, but there is a temptation to do it.

General BRAY. Yes, sir.

Senator PROXMIRE. And I think we ought to be alert to that.

Can you tell the committee how the stockpiles are safeguarded against their being used by the Office of Management and Budget or others in order to have a convenient transaction that would make the budget look better?

General BRAY. Yes, sir, I would like to very much.

In the first place, let me say I don't rule out and I fully accept the fact that budget considerations are a factor that ought to be considered in the development of any Annual Materials Plan. I think that is prudent planning. What I am concerned about, and I think the gist of your question is the overriding or total preoccupation with the budget impact at the expense of other factors that need to be considered. So I certainly want to establish that in development of our Annual Materials Plan every year——

Senator PROXMIRE. I am not so sure I even accept that assumption. I think with respect to defense, with respect to—now, this is an element of defense—we should buy everything we need to make us as secure as possible and not one penny more, regardless of the situation. There are many other ways, we can have countercyclical fiscal policy, including changes in taxes, job producing programs specifically for that purpose.

It seems to me here we ought to do what we have to do and no more rather than use it for a budget purpose.

General BRAY. I agree with that; we should not use it for budget purposes. With response to your question of what safeguards we have, the primary safeguard, I would think, that we have is in the new Annual Materials Plan that we intend to submit to Congress. In one document the appropriate committees of Congress who have to approve disposals can take a look at the disposals, and at the same time, the appropriate committees of Congress who have to appropriate moneys for acquisition can take a look at them in one document and see whether or not there have been any undue budget considerations. That is a primary purpose of the new Annual Materials Plan: to give that visibility and that opportunity to the appropriate Congressional committees to assist us in managing this program to prevent undue budget impact.

Senator PROXMIRE. Have you submitted your Annual Materials Plan for the new year?

General BRAY. Sir, the Annual Materials Plan of this year, because of the late time that we were able to end up our study, is still in its final stages of development. The plan is being developed on an interagency basis.

Now, we have firmed up the principal factors out of the plan, that is, the amount of disposals and the amount of acquisitions, at the staff planning level for the fiscal year 1978 budget.

Senator PROXMIRE. What is the effect in fiscal year 1978? Is it a net gain or a net loss?

General BRAY. Our proposed disposals will be in slight excess of our proposed acquisitions in fiscal year 1978.

Senator PROXMIRE. In dollar terms.

General BRAY. In dollar terms.

Senator PROXMIRE. So you will be bringing money in rather than requesting.

General BRAY. But not a major impact. They are essentially in balance.

Senator PROXMIRE. Can you give us roughly what that is? What is it, $100 million or less?

General BRAY. Both the disposal and the acquisition programs will exceed $100 million. There will not be significant differences between the two. Prior to the President making a decision in his budget process, which he is doing right now, Mr. Chairman, I think it would be premature for me to give you a figure. I will do so as soon as I can and it is included in the budget.

Senator PROXMIRE. But it will be a few-million-dollar gain.

General BRAY. Yes, sir, it would be a few-million-dollar gain rather than a few-million-dollar deficit.

Senator PROXMIRE. Now, how about that point I raised in my opening statement about industry coming on hands and knees, perhaps saying we need some help, we need to have you stabilize our prices or keep our price from falling, or maybe increase our price for various reasons.

What is there to prevent that kind of action which I think is subject to extremely dangerous corruption?

General BRAY. Yes, sir.

Mr. Chairman, I am very sensitive to that and I want to make a statement to it. I have no intention of trying or wanting to go back for the last 30 years and defend every release that every President has made out of the stockpile.

Incidentally, as you well know, I want to make a clear distinction between the release of materials out of the stockpile and the disposal of excesses. Disposal of excesses involves coming to Congress to ask for specific authority for a disposal. The use of materials out of the stockpile is covered by section 5 of the act, which is very narrow in my view.

Section 5 authorizes use of the stockpile in two circumstances. It says that the stockpile can be used at any time upon a determination by the President, and only by him, that the use of material in the stockpile is needed for the common defense. It is a defense measure. The second circumstance is a declared war or a declared national emergency when some agency designated by the President could authorize the use of material, again for the common defense.

I might say no President has ever delegated or designated an agency to do that, and as a matter of fact, since the first stockpiling law went into effect in 1939, there have been 27 instances when Presidents have authorized the use of materials out of the stockpile. Six of these occurred during World War II. I think 12 of them occurred during the Korean war, and the remaining seven or so, or nine, occurred in the Vietnam situation.

Now, it is not possible for me to go back and say whether or not there were economic uses at different times during this history. I can say to you in the 3 years I have been the Director of the Federal Preparedness Agency, we have not had any releases under section 5 from the stockpile.

Senator PROXMIRE. I'm not worried about releases as much, although that is a matter of concern, too, but how about acquisitions?

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Wouldn't there be at least some representation, if I were an industry that was responsible for an important commodity that was, of course, very important to us that we had our price sustained, I would want to know what government policy is to begin with. I would want to have good associations with the Government people who make these decisions, and I can see how some influence might be brought to bear there.

What insulation do you have there? What kind of protection does the public have that you are not going to use the public money and you have an enormous amount available here, really. How do we know that the public is being protected?

General BRAY. I think two ways, Mr. Chairman, really three ways. Let me finish the one on release and just take one sentence, and then I will go to the other two.

As I said, there has not been any authorized releases in the last 3 years. I as the manager of the stockpile feel very strongly that every release from the stockpile must be associated with the common defense.

Now, I want to make a distinction. There have been interpretations by Attorneys General that say——

Senator PROXMIRE. Well, of course, let me say right there that one of the problems would be that an industry might want to oppose a release.

General BRAY. Yes, sir.

Senator PROXMIRE. They want to oppose a release because they want to maintain their price. If you release a substantial amount, their price tends to drop.

General BRAY. I am sure in the past history there have always been those different views by different segments of industry, some opposed to releases, some advocating releases. My point is the decision should be made, though, on the necessity of the release for the common defense, for our national security interest, and only that.

Senator PROXMIRE. Exactly, and we want to know what the protections are built in so that it will only be made on that basis.

General BRAY. The only thing I can assure you is that the law says that, and as long as I am Director of the Federal Preparedness Agency, any recommendation I make to a President would strongly emphasize that particular point.

Senator PROXMIRE. Do you have a record, a public record of any kind of representations made to the Agency or made to you? Is this available to the press so that if, for example, there is any approach made, personal, telephone, letter, whatever, any influence brought to bear of any kind, that that would become public knowledge?

General BRAY. Yes, sir, I think that should be, and I would have no opposition and no problem with that. I think that is a useful thing.

Senator PROXMIRE. That isn't the case now, however, is that right?

General BRAY. Well, we do have records, obviously of letters received, telephone calls, and so on. At times, as I am sure you recognize, it is hard to clearly differentiate between someone as expressing undue pressure or undue influence, and someone simply being informative or making us aware of a particular situation existing. But that information is available, and I certainly have——

Senator PROXMIRE. Well, suppose we do this. Suppose you write me and indicate exactly what kind of provisions you have that will make open and available to the press and to the public any kind of approaches made, any kind of representations made from anyone, either from the administration or from the industry, one way or the other, either to hold up acquisitions, to increase acquisitions, to hold up disposals, or to increase disposals.

General BRAY. Very good. I will be glad to do that.

(Additional material submitted for the record follows:)

UNITED STATES OF AMERICA
GENERAL SERVICES ADMINISTRATION

Federal Preparedness Agency
Washington, D C 20405

DEC 10 1976

Honorable William Proxmire
Vice Chairman
Joint Committee on Defense Production
Washington, D. C. 20510

Dear Senator Proxmire:

This is in response to your letter of November 30, 1976, requesting details of the precautionary measures that will be taken by the Federal Preparedness Agency to ensure that the stockpile policy and goals will not be influenced or manipulated.

In accordance with your letter and my testimony before the Joint Committee on Defense Production on November 24, 1976, we have explored the feasibility of developing a reporting system to protect and insulate FPA officials from undue influence regarding stockpile policy and goal-setting.

A set of procedures to record contacts of the type you noted in your letter has been developed. The enclosed draft directive from me to the FPA professional staff shows how contacts could be funneled into one of the three organizations in FPA with stockpile policy or goal-setting functions: the Office of the Director, the Office of the Assistant Director for Civil Crisis Preparedness, and the Stockpile Policy and Objectives Division. The second enclosure is a reporting sheet that shows how the contacts could be recorded.

The development of these procedures and reporting sheets provided us with more opportunity to explore your request in greater depth and detail than was possible at the hearings. One factor became apparent--while we agree in general with the idea of insulating our officials from undue influence, it is very important that we guard against isolating ourselves from industry and other organizations because, first of all, the Strategic and Critical Materials Stock Piling Act mandates such interactions. Second, and probably just as important, contacts with industry, whether initiated by industry or by us, provide us with current information on markets, technology, and political and economic trends; and we also have found that questions and challenges of our results by these groups have served to improve our system and keep us "on our toes."
In view of the value of these contacts, we are hesitant to do anything that would convey to industry and other organizations the idea that we are reluctant to communicate with them.

While in theory it might appear that FPA officials could be subjected to requests to influence policy or goals, this has not been our experience in practice. In view of this, we should not be hasty in adopting a procedure that increases our workload if it does not appear to be cost effective. I have asked the other responsible FPA officials if they have experienced influence of the type we have been discussing, and all responded in the negative.

There are good and continuing reasons why this is the case:

- Stockpile policy is developed in an interdepartmental process, is not available for public or unofficial scrutiny because of its security classification, and passes through two higher review levels (the National Security Council and the President) before it is approved. Formal stockpile policy review is scheduled to occur at least every four years.

- Stockpile goals are developed in an interagency framework with numerous interagency subcommittees reporting to an interagency steering committee. Further review and approval of results is performed by the Director, FPA. The process itself is accomplished with a fixed methodology and is based mainly on data available to the public. (Exceptions are the political reliability ratings, defense expenditure patterns and zone of action). This process is relatively straightforward. There was no influence present in the activities that led to the current set of goals, and there is reason to believe that the structure and the nature of the mechanism, currently in use, will tend to discourage or prevent such influence in the future.

- The Annual Materials Plan is a management device to implement policy and goals within a defined framework of priorities. The Plan is developed through the interagency process and implementing actions in the Plan, both disposals and acquisitions, will require specific Congressional approval. This may create some pressure during the Congressional reviews but should serve to reduce efforts to influence FPA even at the final stages of the overall process.

I will be pleased to meet with you and your staff at your convenience to discuss this matter further.

Sincerely,

LESLIE W. BRAY, JR.
Director

Enclosures

UNITED STATES OF AMERICA
GENERAL SERVICES ADMINISTRATION
WASHINGTON, DC 20405

DATE.

REPLY TO ATTN OF: E

SUBJECT: Contacts with personnel seeking to influence stockpile policy or goals

TO: All FPA Professional Staff

I have received a letter from the Joint Committee on Defense Production requesting that FPA establish a system for recording all instances of communications (whatever the form) between FPA personnel and persons or organizations where the tone of the communication might be interpreted as a move to influence stockpile policy or goals.

The intent of this reporting system is not to eliminate contacts with other agencies of the Government, individuals or private organizations. In fact, our enabling statutes require that contacts with all these groups be maintained, and I endorse an extensive chain of liaison among these groups and FPA personnel.

What is sought for reporting purposes are those contacts of a non-official nature that might appear to be seeking changes in the established stockpile policy or stockpile goal estimates.

All such communications should be both referred and reported either to the Stockpile Policy and Objectives Division (EFS), the Assistant Director for Civil Crisis Preparedness (EF), or the Office of the Director (E). Employees of these three FPA units will maintain reporting sheets to be submitted monthly to E.

Please contact EFS if any clarification is required or if, in specific instances, there is any question regarding the need to report.

LESLIE W. BRAY, JR.
Director
Federal Preparedness Agency

General BRAY. Let me finish one thing, and I think it is a very good point. There are other safeguards. The other safeguard, so far as people coming around and wanting to create pressure for acquisition, generally is that the new Annual Materials Plan will be asking Congress for specific money for acquisitions for specific materials, and we will present that to the Congress at the time of the hearings. Therefore, unless Congress has appropriated that money for that purpose, I have no money and I cannot be subject to that sort of pressure. The same thing will hold true on disposals as well. We will get specific——

Senator PROXMIRE. Well, now, the funds that come in from disposals, they are not set aside so you can use them for aquisitions?

General BRAY. No, sir, they are not available to me. They go directly into the general receipts of the Treasury of the United States, and I have to come back to Congress for any specific acquisitions or any specific disposals. That is our safeguard: that I must come to you and say we need to have authority to dispose of this, authority to acquire this, and that really insulates you pretty well from industry.

Senator PROXMIRE. Well, how restrictive is that authority that is given to you?

General BRAY. Well, it is very restrictive with regard to disposals. The law specifically requires that I have an Act of Congress.

Senator PROXMIRE. How about acquisitions?

General BRAY. We have been in the disposal mode in the stockpile for the last 15 years, and there really haven't been any acquisitions to speak of. But the precedent on that has been that we would request appropriations for that particular purpose, and when the appropriation language came out, you are correct in questioning me, it has not been that rigid and would permit some flexibility in it.

Senator PROXMIRE. But the influence would enter the picture before your agency presented Annual Materials Plan for the coming year and could alter that plan.

General BRAY. Well, I certainly agree with that, all except the last phrase, that it would alter the plan.

Senator PROXMIRE. I didn't say "would," I said "could."

General BRAY. Oh, "could." No; I don't think it could. We certainly are interested and in fact part of our Annual Materials Plan is assuring everyone that we want to consult with industry. We want to know what the market considerations are to avoid market disruption and so on, and that is a very valid concern of ours in developing the Annual Materials Plan.

Senator PROXMIRE. Oh, yes, but again I think that consultations should be open, public——

General BRAY. Yes, sir.

Senator PROXMIRE. All of the discussions should be made available so we can judge it. I agree you have to discuss it with industry. You can't isolate yourself completely.

General BRAY. And I agree with that, sir.

Senator PROXMIRE. There is a possibility of undue and improper influence.

General BRAY. Yes, sir.

Senator PROXMIRE. General Bray, have there been any major stockpile acquisitions since 1959?

General BRAY. No, sir.

Senator PROXMIRE. Isn't your plan to suddenly enter the material marketplace again likely to distort an already troubled economy? Isn't that likely to be inflationary, at least in some areas?

General BRAY. I think the question of that is the degree to which we enter the market, over what period of time. That was why I made my other comments earlier, that if we went in to try to achieve the new stockpile goals which we have published in any short period of time, we would have a terrific impact upon the economy, we could cause exactly the sort of things that your question implies.

My statement earlier was that the law requires that we not unduly disrupt markets. That means that any acquisition program we have, as well as disposals, must be stretched out over an extended period of time.

And if we can't do it without disrupting the market, unless there really become serious, immediate overriding national security considerations, I would say that it would be our management policy. Not only that, but the law requires that we stretch this out so that we do attempt to avoid disruption.

Senator PROXMIRE. Well, you have a conflict here between, on the one hand, acquiring your strategic stockpile soon enough so it will be of some value.

General BRAY. Yes, sir.

Senator PROXMIRE. Obviously if you take 25 years, that is too long a period, much too long a period on the one hand, and then at the same time not disrupting the markets—very, very difficult to reconcile that in some areas, at least.

General BRAY. Yes, sir.

And I certainly agree. That is why in the development of our annual plan each year, which really shows the rate at which we are proceeding toward either acquisition or disposal, we need to come before the appropriate committees of Congress and have them question us on how can we be sure that we can consummate those particular proposals without harming our industry or our economy. That is a primary objective of doing it on an annual basis.

That is why we put into our process, this new system, to do exactly that.

Senator PROXMIRE. Now, in this new approach to stockpiling, you have this Annual Materials Plan that you will submit to the executive and legislative branch, but it is not really a comprehensive Government materials plan, is it, it is just a stockpile plan.

General BRAY. Yes, sir, it is only a materials plan pertaining to the strategic stockpile, you are right. It is not an overall national materials plan; it is not intended to be that.

Senator PROXMIRE. In fact, some of the most important materials won't be covered at all, petroleum, for instance.

General BRAY. Exactly; only those that pertain to the strategic and critical materials stockpiled under the existing legislation; yes, sir.

Senator PROXMIRE. Now, will this stockpile plan be integrated with any other broader materials planning so that it isn't developed in a vacuum?

General BRAY. Well, certainly, Mr. Chairman, we have been working very closely with the National Commission on Supplies and

Shortages, and we will be very interested in their report when it comes out, and we are certainly very interested in what action any executive branch or the legislative branch takes with regard to their recommendations.

Without trying to forecast what those might be, I certainly say 'yes', any Annual Materials Plan that we develop will be done in consonance with whatever falls out of that particular action. Further, we prepare our Annual Materials Plan, Mr. Chairman, on an interagency basis which is also a new change this year.

We will be working with other Federal departments and agencies, Commerce, Interior, State, Defense, and so on, to make sure that their overall materials views are known and can be included in the development of our Annual Materials Plan. So it does have the relationship, as your question implies, to some broader material policies, and we hope to be able to give due consideration to those.

Senator PROXMIRE. Now, when you present your Annual Materials Plan to the Congress each year, wouldn't it be a good idea to also include an estimate of its effect on jobs, on the Federal budget, on materials availability, on market prices and industrial requirements and consumers?

General BRAY. Yes, sir, those are exactly the sorts of things we plan to include.

Senator PROXMIRE. And you will include that.

General BRAY. Yes, sir.

Senator PROXMIRE. Would it be a kind of an economic impact statement?

General BRAY. Well, I think so in its broadest sense. Now, what we are certainly not going to attempt to do is to turn the strategic stockpile into an economic stockpile. As a matter of fact, one of your earlier questions——

Senator PROXMIRE. Right.

General BRAY. Talked about that, and I might say that our new stockpile goals that we have established, and the new stockpile procedures, and the Annual Materials Plan are all based on the clear presumption that the existing statutory authority to establish the stockpile for strategic and national and common defense purposes is still the only existing statute we have, and our stockpile management procedures are intended to stick clearly within those guidelines. So we have no intention of trying to give any more liberal interpretation to the use of materials in the stockpile over that which has been used in the past.

Senator PROXMIRE. Well, in that context, you foresee—do you foresee the stockpile being used in any emergency other than wars?

General BRAY. It could be in a national emergency, but always related to the common defense—only that—never related to purely an economic problem that this country may be having.

That is not the purpose of the strategic stockpile. In my view, it was never intended by Congress, and I have no intention of allowing it, as long as I am here, to be used for that purpose.

Senator PROXMIRE. Now, in view of the importance of petroleum and petrochemicals to national defense, do you feel that the naval petroleum reserves and the new strategic petroleum reserve are adequate protection?

General BRAY. Yes, sir, in general I do. I am very pleased to see the new statutes that were passed last December authorizing the strategic petroleum reserve and the actions that are being made to proceed toward that. I think our Nation needs to have a strategic petroleum reserve exactly as the law calls for. I think the size of it as depicted in the statute right now is a reasonable objective, and I am pleased that we are proceeding in that direction.

Senator PROXMIRE. Do you have any input on that? Are you consulted?

General BRAY. Only indirectly at the staff level with FEA, but we are not the major participant in that at all. We obviously are concerned because of our overall preparedness role and coordinative responsibility, but we are not the primary or lead agency with regard to the strategic petroleum reserve.

Senator PROXMIRE. Are you regularly, systematically consulted?

General BRAY. Yes, sir. We are and we belong through the Administrator of GSA, to the Energy Resources Council, where we can keep abreast of these matters.

Senator PROXMIRE. Now, we are trying to sort out what is new and what is old in the stockpile policy. Clearly one of the new parts is the assumptions which have changed radically since the last set of assumptions were set forth in 1973. If you reason backward from the new high goals to the assumptions that drive them, it is pretty clear that the underlying scenario is a lengthy and intense war, probably conventional. The assumptions include an emergency period of at least 3 years, a prewar mobilization period of 1 year, and a generous concern for nonessential civilian requirements. In other words, it is a guns and butter stockpile.

I am not saying that such a war will occur, because as I indicated before, I think it is an unlikely scenario. I wonder if the probability of such a war is sufficient to justify the costs of this huge new stockpile. Why do you think it is?

General BRAY. Mr. Chairman, let me say in your articulation of the assumptions, I think they were all very accurate except the last which I think I need to comment on very slightly: the reference to "a generous concern for the civilian population, a guns and butter economy."

It is true, we do consider civilian requirements in the establishment of the requirements for our stockpile. But all of our planning was predicated on quite a severe degree of civilian austerity, even more so than the one we experienced in World War II in reaching our requirements for that portion of the stockpile. So it is not what we would normally depict as a true guns and butter economy, but it is and does express concern that we can take care of our civilian needs at least to insure that we have a viable and healthy industrial base to continue on the military effort.

Now, to the broader aspect of your question, do I think it is wise that we should have planning for a major conventional war, 3 years duration, these types of things. Absolutely. I think it is essential that we are planning on that particular basis.

I do think I would make one other point in that regard.

Senator PROXMIRE It just seems to me with that basis, that may be the most congenial basis to plan on, that is the assumption we made for so long.

General BRAY. Yes, sir.

Senator PROXMIRE. It is like losing your wallet in the dark, and it is so dark you can't find it, so you go to someplace light to look for it.

General BRAY. Let me raise a couple of points, if I can, regarding the cost from my perspective. One issue that has been raised is why do we talk about a 3-year basis when other elements in defense planning are on a 1-year planning basis? What about this inconsistency? Why do we go to a costly stockpile for 3 years while other DOD programs might be predicated on a 1-year assumption?

Mr. Chairman, let me say on that, I think there is absolutely no inconsistency between this at all. To my knowledge, neither the Joint Chiefs of Staff nor the Secretary of Defense, nor any defense policy ever said we expect a war to be over within 1 year. What they have said is that we make certain planning assumptions, that we should stockpile our ammunition, or our spare parts on a 1-year basis, always on the presumption that if we make a judgment in that year that it is not likely to be over, we are going to have to crank up our industrial production in order to continue on.

Now, that is an option that always is available in our production base, provided we have the necessary raw materials in order to carry it out.

Now, we don't have the option of rebuilding strategic stockpiles after a war starts. If we don't have an adequate supply of our strategic materials before a war starts, we don't have the option of cranking up industrial production of weapons systems to stretch beyond a 1-year period if that becomes necessary.

Senator PROXMIRE. Well that depends, of course, entirely on the nature of the war, the availability of trade during the war, our control of the oceans, all kinds of things.

General BRAY. Yes, sir, but again, I think as we look at the world as a whole, there are some materials that clearly it would be risky planning to assume that we could continue our normal imports of them in a wartime situation, even with the least possible shipping losses and so on.

Mr. Chairman, one other point on the cost, because I think this is very important. People talked to me when I was here in Congress for the last few months trying to obtain approvals of some disposals, asking me why do I want to dispose of these materials, because as long as we hold them, they are increasing in price, and it really remains a national resource.

Now, while I don't agree wholly with that, and I think we ought to get rid of materials that we clearly don't need, there is a certain validity to that. It is not like buying weapons systems and it is not like paying some other costs that we do in overall security defense planning. When we have something in the stockpile, we haven't lost it, and if we don't need it, we always have that as a national resource to feed into our economy at a later time, or to sell off. Even the 27 instances I quoted to you where we have used materials from the stockpile in the previous years, were always done on a reimbursible basis. If we made it available to industry, it was paid for. So the cost is an investment cost, there is no question about it, and I am not implying that there is not some impact upon our citizens and upon our economy. But it is not

a cost like some of our other planning. It remains a national resource. It doesn't deteriorate. We hold it, and it generally increases in value.

Senator PROXMIRE. Well, we don't know, it may increase in value or it may deteriorate in value. You have indicated that many of the things we have are not as valuable as they used to be. Furthermore, as you know, any time you tie up funds these days with the interest rate what it is and with the uncertainty of what prices will be in the future, it is a considerable decision.

General BRAY. Well, there are certain examples in which value has gone down, but overall, the vast number of materials increase in value. For example, in 1973 the value of the stockpile was about $4.6 billion. It is now running about $7.4 billion, without any acquisitions.

[Additional material supplied for the record by General Bray follows.]

. . . and with $2.5 billion of disposals in the intervening years.

Senator PROXMIRE. In what period of time?

General BRAY. Since 1973 it has increased from about $4.6 billion to $7.4 billion right now in current prices.

Senator PROXMIRE. Well, you have also had inflation and storage costs.

General BRAY. Storage cost is very negligible, though, Mr. Chairman, compared to the increase in value that has been brought about by the inflation and other increases in prices. The point in costing I would make to you——

Senator PROXMIRE. Well, of course, that happy experience that you have there is that one, since 1973, we have had an increase in commodity prices generally throughout the world, and you may have a drop in commodity prices, too.

General BRAY. I agree.

Senator PROXMIRE. And the main thing is, you do tie up funds for a period of time, and any businessman can tell you, if he has to tie that up in inventory of any kind, this is an inventory of the Federal Government, it means a real cost to him, a very definite cost.

General BRAY. I agree with your point. Even if that didn't exist at all, I would still argue that the cost that we have paid for having this option in our stockpile is relatively small compared to our other national security planning requirements that we have, and in the absence of this, it can jeopardize the viability of other defense planning.

So my point is, even disregarding that inflation of cost argument—and I do agree with you, we are tying up capital costs—in my judgment, the value, the cost involved in the strategic stockpile, in view of the problems of not having materials on hand, is a reasonable and prudent expenditure of the taxpayers' money.

Senator PROXMIRE. Now, regarding a new formula for setting the stockpile goals, how did you reach the GNP projection? What was the basis of your estimates?

What deflators did you apply to this GNP projection? Could a high projected GNP be the cause of all these goals?

General BRAY. No, sir. Let me say this to you. I could dig through and get you the precise figure, but let me speak—let me give you general terms and provide a more detailed response for the record, if I might.

Senator PROXMIRE. Well, we want a specific response for the record. We want to know exactly what assumptions you made with reference to GNP.

General BRAY. I will be pleased to do that, but in general response to your question, the size of GNP that we have projected and the deflators that we used, in my judgment, are not a predominant driver in the size of the stockpile goals that we have under the new policy, and we will provide you the precise data of deflators and factors that we used in projecting the GNP.

[Additional material submitted for the record follows:]

The development of GNP projections in the recent stockpile policy study involved two sets of considerations: the development of inputs to the MCL–Thurow macroeconomic model, and the introduction of some planning factors as constraints on the model.

Stipulations regarding the values to be assigned to numerous economic variables first were developed by economists in FPA's Mathematics and Computation Laboratory (MCL). The more important of these were Capacity Utilization, Inflation Rates, Federal and Military Employment, Federal Purchase of Goods and Services, Housing Starts, the 3-Month Bill Rate, Motor Fuel Usage, U.S. population 16 years of age or over, Publicly Held Federal Debt, the Corporate Profits Tax Rate, and the Unemployment Rate. Values of these predetermined assumptions used in the study for both the baseline peacetime forecast and the wartime scenario are given in Tables I and II, respectively. There were many more variables, but those mentioned are a representative sample. Each variable was estimated under peacetime and wartime conditions, which included the mobilization period. These estimates were given to FPA's Stockpile Policy and Objectives Division, to be reviewed by a team of economists. Areas of question were resolved between the two groups and the stipulations were agreed on.

At the same time, the interagency DOD Expenditure Patterns Subcommittee developed estimates of the levels and composition of DOD wartime requirements. After approval by the Interagency Steering Committee, the wartime expenditure totals were provided to MCL for inclusion as one of the macroeconomic variables.

The final set of activities involved introducing the wartime economic constraints to the MCL–Thurow Model. These constraints applied to (a) austerity measures levied on the civilian population, (b) shifting part of the remaining consumer expenditure from durable goods to nondurables and services and (c) shifting investment expenditures away from residential structures into machinery and equipment investment. All three sets of constraints were developed by the interagency Planning Factors Review Group and approved by the Interagency Steering Committee.

Having integrated all these variables and constraints, the model was run. Three GNP estimates were derived using (a) the baseline peacetime economic assumptions, (b) the economic assumptions about wartime economic activity (without applying wartime economic constraints) and (c) the assumptions about wartime economic austerity including the wartime economic constraints. These projections for the three war years are given in Table III. The results were checked for consistency and reasonableness by economists both in MCL and the Stockpile Policy and Objectives Division. After the review, the results were available to the Interagency Steering Committee.

It can be added in passing that, at the time the projections were being prepared, the entire modeling system had just undergone an extensive and favorable review and examination by the Interagency Methodology and Data Review Group, which also included "outside" experts.

TABLE I.—PREDETERMINED INPUTS TO THE MCL-THUROW MODEL BASELINE PEACETIME SCENARIO

	1978	1979	1980
Capactiy utilization (percent)	74.00	76.00	78.00
Deflator for GNP (1958=1)	2.22	2.33	2.45
Federal employment (millions)	4.27	4.30	4.30
Military employment (millions)	2.18	2.18	2.18
Exports (billions of 1958 dollars)	80.60	83.00	82.90
Federal purchases of goods and services except employment (billions of 1958 dollars)	40.60	41.30	42.30
Federal gross Government product (billions of 1958 dollars)	58.99	61.65	64.42
Housing starts (thousands)	1,900.00	2,000.00	2,200.00
3-month bill rate (per unit)	.07	.06	.06
Motor fuel usage (billions of gallons)	106.70	108.50	110.00
U.S. population, 16 years and older (millions)	76.20	77.10	78.00
Publicly held Federal debt (billions of dollars)	450.00	460.00	480.00
Corporate profits tax rate (per unit)	.48	.48	.48
Tax rate for median family income (per unit)	.21	.21	.21
Unemployment rate (percent)	6.50	6.00	6.00

TABLE II.—PREDETERMINED INPUTS TO THE MCL-THUROW MODEL WARTIME SCENARIO

	1978	1979	1980
Capacity utilization (percent)	105.00	105.00	105.00
Deflator for GNP (1958=1)	2.22	2.33	2.45
Federal employment (millions)	9.50	11.50	13.00
Military employment (millions)	3.50	4.00	4.50
Exports (billions of 1958 dollars)	83.00	90.00	95.00
Federal purchases of goods and services except employment (billions of 1958 dollars)	110.00	145.00	155.00
Federal gross Government product (billions of 1958 dollars)	58.99	61.65	64.42
Housing starts (thousands)	1,900.00	2,000.00	2,200.00
3-month bill rate (per unit)	.07	.08	.08
Motor fuel usage (billions of gallons)	85.00	80.00	75.00
U.S. population, 16 years and older (millions)	76.05	76.75	77.50
Publicly held Federal debt (billions of dollars)	480.00	530.00	600.00
Corporate profits tax rate (per unit)	.40	.50	.50
Tax rate for median family income (per unit)	.24	.27	.30
Unemployment rate (percent)	4.00	3.00	2.00

TABLE III.—MCL-THUROW MODEL GNP FORECASTS

[In billions of 1958 dollars]

	1978	1979	1980
Peacetime scenario	923.03	942.11	979.284
Wartime scenario without adjustments [1]	1,076.48	1,152.16	1,205.9
Wartime scenario with adjustments [1]	1,044.27	1,083.00	1,080.19

[1] For civilian austerity, for shifting part of consumer expenditure from durables to nondurables and services, and for shifting part of investment from residential structures to machinery and equipment investment.

Senator PROXMIRE. Now, when you calculate available foreign supplies of materials, you use a numerical indicator of political reliability.

General BRAY. Yes, sir.

Senator PROXMIRE. Political reliability that is based on the judgment of the State Department.

What is to prevent a Secretary of State from establishing a very high or very low political reliability index to influence the goal for certain material? We know that the State Department has sometimes in the past been very interested in our acquisition policy. It does have a profound effect on the economies of various countries, especially developing countries. How would you tell the Secretary of State you don't believe his judgment on that?

General BRAY. Well, two things. First, I think certainly, as you well recognize, trying to judge the political reliability of any country certainly is an imprecise area to be working in in the first place, and yet it is a very vital area that we try to do the best possible analysis and the best possible work that we can.

One of the subcommittees that I had during this last year's effort was to try to examine that as a methodology and try to get a better handle on how we do it. We do have a procedure, as you said, that requires the State Department people to assist in developing these data. It is not done in isolation. The data then is fed back on an interagency basis to us, the Federal Preparedness Agency, and I assume, and I do state, it is my responsibility to make the judgment on what the planning factors ought to be and are with respect to developing and changing the stockpile goals.

So while we want to obtain the advice and the help and the assistance of the State Department people, and their help, I feel it is my basic responsibility to review those, as we will do, and make the determination.

Senator PROXMIRE. You make the determination.

General BRAY. Yes, sir.

Senator PROXMIRE. Now, the reason we are concerned about this new economic model is it has produced some results that go against the commonsense reasoning of material experts, for instance, so we wonder about its accuracy.

For example, you increased your requirements for obsolete materials, such as cordage fibers, talc, shellac, iodine, and the insecticide, pyrethrum.

What is the basis for that?

General BRAY. Well, first off, Mr. Chairman, let me say I certainly agree with you, that you could come up with the most complex and sophisticated methodology that our analysts come up with, and when you apply it across the board to 93 materials you can come up with some very odd and queer looking results in specific commodities. It was for that reason that after we did our methodology and after we did our computer runs, that I convened a group of interagency experts and sat them down for several days in a group and had them go over the data to try to find out where commonsense said that the methodology was misleading us. What we did in those cases, Mr. Chairman, was to go through and identify where the methodology might have misled us in exceptional cases.

Now, I don't want to mislead you. I think the methodology is generally very valid for the vast majority of materials, but in certain materials it can be misleading.

We went back in through and readjusted, for example, shellac. We went back in through and extensively reviewed cordage fiber but did not adjust it since no hard data existed. The Departments of Commerce and Defense were asked to review consumption and substitution possibilities and when the new data is available, cordage fiber goals will be recalculated.

Senator PROXMIRE. Well, do we really use cordage fibers anymore?

General BRAY. Yes, sir; we would use it, but we may not to the extent that the methodology, if we left it alone, would indicate.

Senator PROXMIRE. Yet we are increasing our requirements for them.

General BRAY. Yes, sir, but I think again, the increase that we have was not a blind reliance upon the methodology. It was a reliance on the methodology as corrected and modified by the best group of experts that we could get our hands on, and to say what are the common-sense approaches to this one, and when we do deviate from the model, let us provide an audit trail for it so that we can tell you or anyone else precisely and exactly what went into that new figure that we are listing for shellac.

Senator PROXMIRE. Now, there are increases for shellac and pyrethrum?

General BRAY. Yes, there are, and we increased the substitution factors very greatly on shellac after we went into it.

Senator PROXMIRE. And yet you are increasing your requirements.

General BRAY. Yes, sir, and I would be very pleased to give you a separate paper on shellac.

Senator PROXMIRE. Well, give us a justification for every item here for the record.

General BRAY. Yes, sir.

[Additional material submitted for the record follows:]

FPA has been requested to provide additional information on specific materials which were identified as falling into one of four categories: (1) materials which are becoming obsolete through technology, (2) materials for which there exist high levels of domestic production, (3) materials for which the U.S. is totally dependent on foreign sources, and (4) materials for which there are few military applications. The information is presented below for the twelve materials requested according to the categories suggested.

OBSOLETE MATERIALS

1. *Cordage fiber.*—The generic term cordage fiber refers to two natural fibers, abaca and sisal, which were formally used exclusively in making rope and twine. Today, most raw cordage fiber goes into speciality paper rather than cordage products, which now are either imported as manufactured rope or twine or manufactured from petrochemical derivatives. Cordage fiber imparts superior wet-strength properties to the products produced from it whether they be paper or cordage. Speciality papers made with fiber have critical applications in industry, principally as filters; while the U.S. Navy still has not found effective synthetic substitutes for natural cordage in some key areas even though they have conducted an extensive R&D effort. Another product still employing the natural fiber is agricultural twine. Here the natural product offers significant environmental advantages over synthetic substitutes, because the natural fibers are biodegradable.

There is no domestic production of cordage fiber—abaca comes principally from the Philippines while the major producers of sisal are located in Africa. The wartime requirements for cordage fiber are reduced significantly through planning factors for austerity and substitution. In the aggregate (all years and tiers), sisal requirements are reduced 65 percent by stockpile planning factors such as substitution to an annual average wartime consumption of 41 million pounds. This compares to 1975 U.S. consumption of 203 million pounds. The three-year goal for sisal is 114 million pounds.

For abaca, the requirements are reduced by planning factors by 45 percent to an annual average wartime consumption of 68 million pounds compared to 1975 U.S. consumption of 68 million pounds. The three-year goal for abaca is 24 million pounds.

2. *Talc.*—The talc in the stockpile is a special, high quality talc used in specific electronic applications, such as ultra-high-frequency applications. The applications require large pieces strong enough to be machined into special shapes to close tolerances.

The principal sources of supply for this special material are South Africa and the U.S., albeit each country has limited production capacity for this high quality talc.

The planning factors for austerity and substitution have little effect on the wartime requirement for stockpile type talc, reflecting the special purpose nature of the material. Wartime requirements are higher than normal peacetime requirements, when the need by the military for communications equipment and other sophisticated electronic gear rises rapidly. The average annual wartime consumption for stockpile talc is estimated to be 39 short tons, compared to 1975 consumption of 35 tons. The three-year goal for stockpile quality talc is 104 short tons.

3. *Shellac.*—Shellac is used in a wide variety of applications as a coating or sealant. Known substitutes exist for every application except one: shellac is the only effective material for binding glass to metal in electric light bulbs. Most substitute materials are not used in other applications because they are more costly. The only sources of shellac are India and Thailand.

Stockpile calculations assume a generous amount of substitution, more than for any other material. Substitution reduces wartime consumption for shellac by 84 percent to an annual average of 4.3 million pounds. By comparison 1975 consumption was 9.9 million pounds. The three-year stockpile goal is 8.5 million pounds.

4. *Iodine.*—The principal use of iodine is as an essential food additive for humans and animals in table salt and feed supplements. Other important wartime uses include photographic chemicals (silver iodine), special lubricants in metalworking applications such as machining turbine blades, and catalysts used in the manufacture of organic chemicals. The best known use of iodine, as an antiseptic, constitutes only a small portion of consumption.

Iodine is produced domestically at one location in Michigan, but most of the U.S. supply originates in Japan.

The annual average wartime consumption of iodine is 11.8 million pounds compared to 1974 consumption estimated to be 7.5 million pounds. There has been a long-term trend of increasing consumption of iodine—in 1960, for example, consumption was only 2.1 million pounds.

5. *Pyrethrum.*—Pyrethrum is the most desirable pesticide known today, since it is a contact pesticide with quick knock-down properties and unlike synthetic substitutes, such as DDT, can be used safely around animals and people. Furthermore, insects do not develop tolerances to pyrethrum as they do to synthetic pesticides. It is the preferred pesticide under current EPA and OSHA guidelines.

The principal sources of pyrethrum are Central Africa and South America. A synthetic pyrethrum is under development in the United Kingdom but the product has not yet been manufactured in commercial quantities.

The estimated wartime consumption of pyrethrum has been reduced 42 percent, mainly by substitution, to an annual average of 150,000 pounds as compared to 1974 U.S. consumption of 500,000 pounds. The three-year stockpile goal is 380,000 pounds.

HIGH DOMESTIC PRODUCTION

1. *Copper.*—Copper, because of its use in shell casings and communications networks, is a material particularly sensitive to wartime conditions. During World War II, there were severe copper shortages, which forced the War Production Board to close all gold and silver mines in order to shift workers and equipment to the copper mines. Mine worker requirements were further supplemented by military personnel. The WPB took additional measures in order to reduce copper consumption. In particular, the U.S. Government stopped using copper in coinage (pennies and nickels).

In light of the above, the first stockpile objective was established for copper at a level of 1.25 million tons. During both the Korean War and the Vietnam War, copper consumption was greater than the available supply, resulting in Presidential common defense releases from the stockpile of 77,000 tons and 550,000 tons, respectively.

The assumptions employed in arriving at stockpile goals indicate that 3.3 million tons of copper will be available, primarily from North American sources in the three-year period. This compares to the 1973 (peak year) supply of 2.9 million tons and 1975 supply of 2.2 million tons from both domestic and foreign sources. All of these estimates include secondary production from scrap.

The estimates of wartime consumption average 3.8 million tons per year. For comparative purposes, increases in copper consumption during wartime are displayed below.

	1st yr	2d yr	3d yr
World War II (1940=100)	150	156	157
Korean war (1949=100)	131	127	135
Vietnam war (1964=100)	110	125	105
Stockpile assumptions (1976=100)	130	137	139

Therefore, even though the stockpile calculations assume greater supply than normal, wartime requirements increase rapidly enough to require a three-year goal of 1.3 million tons.

2. *Lead.*—Lead, like copper, is a material whose requirements increase dramatically during wartime. The principal military application for lead are storage batteries and small arms ammunition. Current military technology anticipates very mobile land forces requiring large numbers of vehicles for moving and supporting personnel. This one single application accounts for about 70 percent of the increase in wartime requirements over normal peacetime consumption.

Primary domestic sources can satisfy about 55 percent of lead consumption; the rest of the U.S. consumption must be met from imports and recycling.

The three-year stockpile goal for lead is 875 thousand tons. This represents about 12 percent of the total three-year wartime requirements.

3. *Jewel Bearings.*—Jewel bearings and related materials are used in precision instruments and similar equipment. The U.S. uses about 75 million jewel bearings annually. Of this about 1.5 million come from a Government-owned plant (funded through the Defense Production Act), with the balance imported from European sources.

During an emergency, U.S. production could be expanded to 14 million units per year. Annual wartime consumption is estimated to average about 95 million pieces. The stockpile goal for the three-year period is 225 million pieces.

TOTALLY DEPENDENT UPON FOREIGN SOURCES

1. *Silver.*—In 1975, the U.S. consumed 156 million ounces of silver; 85 million ounces came from domestic primary and secondary production while the rest came from imports. Of these imports, 56 million ounces came from Canada and Mexico. Thus, over 90 percent of U.S. consumption came from North American sources.

Much of peacetime silver consumption is used in the manufacture of luxury items, such as jewelry, commemorative coins, and silverware. Approximately 60 million ounces were consumed in these applications in 1975. In the stockpile calculations, wartime consumption of silver is estimated to average 212 million ounces per year, and supplies from North American sources are expected to average 200 million ounces per year. Since the estimated wartime supplies exceed wartime requirements, the stockpile goal is zero.

2. *Tin.*—Although there is only a small amount of domestic production of tin in the United States, approximately 30 percent of U.S. consumption is met through recycling. The remaining tin requirements are satisfied by imports, mainly from Malaysia, Thailand and Bolivia.

During wartime, North America supply could expand through increased recycling activities and through increased production from marginal mines. These supplies could be supplemented by shipments from South America and the Southern Pacific. The average annual wartime supplies of tin are estimated to be 45,000 tons compared to estimated wartime requirements averaging 55,000 long tons.

The stockpile goal covering this supply requirements shortfall is about 32,500 long tons. The shortfall between total requirements and total tin supply is 10,000 long tons. The 22,500 long ton difference between the aggregate difference and the stockpile goal represents the hedge effects of dividing the economy into three tiers and in general assigning the surest supplies to the defense tier, the next surest supplies to the essential civilian tier, and the balance of accessible supplies to the general civilian tier.

FEW MILITARY APPLICATIONS

1. *Beryllium.*—For 15 years over 60 percent of beryllium consumption has resulted from Government purchases. The principal uses of beryllium include shield-

ing in nuclear reactors, aerospace applications, rudders and brakes in military aircraft, and as an alloy with copper for electrical uses. Beryllium is one of two stockpile materials for which a "special material" adjustment is made because of the intensity of wartime use in military applications.

The anticipated wartime requirements for beryllium average about 28,000 tons (ore equivalent) per year; the majority of these requirements occur in the defense tier. Wartime supplies will come principally from western hemisphere sources averaging 8,700 tons per year. The stockpile goal for three years consists of two parts: 16,710 tons of beryllium copper master alloy and 895 tons of beryllium metal.

2. *Cobalt.*—Cobalt is used as an alloying element in the production of high-strength, high-temperature steels. Other important uses include magnets, high-speed tool steels and cutting edges on drill bits. Superalloys containing up to 65 percent cobalt are mainly consumed in the production of jet aircraft engines; an end use which will experience a very large increase during wartime. In fact, 49 percent of the wartime requirements for cobalt occur in the defense tier.

Sources of supply of cobalt are limited. Approximately 80 percent of the current world production of cobalt is mined in the interior of Zaire. The ore must be transported through Angola or Southern Rhodesia and South Africa to reach suitable port facilities.

The assumed wartime supplies of cobalt average 2.5 million pounds per year compared to wartime requirements of 31 million pounds. The three year stockpile goal is about 85 million pounds.

3. *Platinum Group Metals.*—The stockpile contains three metals from the platinum group—platinum, palladium and iridium. Platinum and palladium are primarily used as chemical catalysts in the production of petroleum, nitric acid and sulfuric acid. Other important uses include electrodes, thermocouples, crucibles, spinnerettes, bushings and nozzles. These metals are only used where there is an exposure to elevated temperatures and corrosive materials. Iridium also serves as the material which encases plutonium power cells in special applications.

The U.S.S.R. and the Republic of South Africa are the two major sources of these three materials. Stockpile calculations assume the following average annual supplies and requirements:

[In troy ounces]

	Platinum	Palladium	Iridium
Supply	360,000	830,000	16,000
Requirements	770,000	1,640,000	50,000
3-yr goals	1,314,000	2,450,000	97,761

The requirements for these metals are concentrated in the Essential Civilian tier, since the metals do not show up in end products. Thus, none of the platinum used to make gasoline for the military is credited to the defense tier, instead it shows up in the Essential Civilian tier. It is important to note that the requirements figures cited above do not include platinum or palladium consumed in automotive exhaust systems. If this consumption were included the requirements would be raised about 30 percent.

4. *Rutile.*—Rutile is one of two titanium ores, the other is commercial ilmenite. During peacetime, 80 percent of rutile is consumed in the manufacture of paint and 20 percent is converted to metal. A minor amount is used in welding rod coatings. Most of the metal is used in the manufacture of military aircraft, some is used by the chemical processing industry, while the rest is consumed in miscellaneous applications. Ilmenite, which is available domestically, is not used to make metal but can be used when manufacturing paints.

The wartime supplies of rutile, and thus titanium metal, are estimated to average 375,000 short tons. The wartime requirements for rutile are estimated to average 460,000 short tons while the requirements for titanium metal average 70,000 short tons. The three year stockpile goals for rutile and titanium are 173,928 short tons and 131,503 short tons, respectively.

Senator PROXMIRE. You also increased stockpile increments on which domestic production is high. For example, copper, lead, and jewel bearings.

What justifies these expanded goals for materials in good supply?

General BRAY. Only this, Mr. Chairman, that when our estimates of what we are going to require in copper or any one of those exceeds what we think our supply sources are—and obviously our domestic supply source is by far the most sure and stable source that we have, but where there is an imbalance in our calculations, we will establish a stockpile goal. It really is not therefore directly driven by the percentage of the material that is either produced in the United States or not produced in the United States. I might say, Mr. Chairman——

Senator PROXMIRE. Well, of course, that makes a great difference in the strategic stockpile. If it is produced in the United States, we have less reason for having to increase our stockpile.

General BRAY. Absolutely, and if we had enough U.S. domestic production to meet our requirement, we would have no requirement to stockpile it.

Senator PROXMIRE. Well, take copper for instance.

General BRAY. Yes, sir.

Senator PROXMIRE. Is the influence of the State Department with respect to Chile of any significance?

General BRAY. No, sir.

Senator PROXMIRE. Then why did we increase copper?

General BRAY. Because our requirements exceed our production. It is just as simple as that.

Senator PROXMIRE. Well; if you can give us a detailed justification for the degree of increase there——

General BRAY. We would be glad to.

Senator PROXMIRE. Not only on copper, but on these other items that I have mentioned here.

At the same time, you have decreased the requirements or goals for materials where we are totally dependent on foreign supplies, such as tin, silver, both of which have many military applications.

Why have we decreased that?

General BRAY. Again, Mr. Chairman, it is a process of looking at what we expect our requirements of tin or silver to be, taking a look at what our total production availability would be, both domestic and foreign, and seeing whether or not we can meet our common defense requirements in a national emergency, in wartime, and when we can't, then—or when our balance is less than our current objective, then we will decrease the objective, and that is exactly what happened to silver. It is not saying we don't have any less degree of dependence.

I might say, Mr. Chairman, that when we went into the study, when I convened the first group, I said to them, we have used for the last number of years a methodology in which we try to compute requirements, try to compute available supply, and compute the imbalance as a basis for determining stockpile. And that may not be the best way of determining stockpile requirements. I said, let us look at some other alternatives as though that is not the right way. Let us look at simply the degree of dependence. Let us look upon the amount of imports.

We ended up, Mr. Chairman, looking at eight different methods, basic, fundamentally different methods by which we might compute our requirements. I called in, as far as I could gather, the best experts

we could find to either revalidate our methodology, our fundamental approach or not.

In our view, the basic methodology of trying to estimate our requirements and trying to estimate our supply has significant advantages over any other methodology involving simply looking at the number of imports or the degree of dependence.

Senator PROXMIRE. Were silver and tin goals decreased because you could sell them most easily?

General BRAY. No, sir.

Senator PROXMIRE. That would be a way of——

General BRAY. No, sir, that was not a factor in driving the size of the goal at all. Neither was any international political implication or foreign policy implication, regarding our relationships with either African countries or South American countries a predominant factor in establishing any of our goals.

Senator PROXMIRE. Where there are materials in which the military applications are few, such as rutile, beryllium, platinum, are these being stockpiled for military or civilian uses?

General BRAY. Sir, each of our materials is broken down into each of those three segments: Defense, essential civilian, and general civilian.

Senator PROXMIRE. I thought defense was your prime and single mission.

General BRAY. I would be glad to look at my tables on that. It is true that in some materials defense will be the predominant user. It is true that in some other materials, essential civilian will be the predominant user. It is true that in some other ones the general civilian may be the predominant user, but in no instance did we ignore any one of the three major segments of our requirements when we did our analysis in our study and if it is true, and it is, that we do have requirements in the stockpile for materials in which the DOD or the defense proportion might be relatively small, that does not invalidate the fact that in order to maintain our broad production base essential to keep our economy healthy in a wartime situation, than we can ignore or should ignore, say, those other requirements as well.

We do decrease them. We assume much more risky assumptions with regard to the general civilian than we did the defense portion, and therefore generally speaking, the defense requirements have a much higher degree of assurance on them than we have for the essential civilian and general.

Senator PROXMIRE. Then the materials on which the goals run to a 6-year supply based—on which industry expects consumption, copper and cobalt, for instance are among them.

What was the rationale behind that kind of——

General BRAY. Sir, the rationale was simply in your question. A 6-year supply under what conditions? If you are talking about a 6-year supply under normal peacetime conditions, that may well be true, but our strategic stockpile is not intended for a normal peacetime situation and people who want to advance that argument clearly feel that the stockpile can be used or would be used for economic purposes. That is not the purpose of the stockpile, and therefore our calculations, our requirements are not predicated on a peacetime economy.

So, in answer to that: the degree to which our stockpile could or could not meet a normal peacetime economy, while it is interesting, is somewhat irrelevant, and what we are most concerned with is how much of that material we need in a wartime economy.

Senator PROXMIRE. Would you submit for the record the names of the experts you consulted on the stockpile methodology?

General BRAY. Yes, sir.

Senator PROXMIRE. Including the area where you consulted with them.

General BRAY. Yes, sir.

[Additional material submitted for the record follows:]

The Federal Preparedness Agency (FPA) employs a Contingency Impact Analysis System (CIAS) which combines macroeconomic forecasting with input-output modelling to estimate the needs for strategic stockpiling. As part of an ongoing study to evaluate stockpile methodology, CIAS was evaluated by an interagency review group of experts which included representatives of the Departments of Defense, Commerce, and Interior, the Joint Chiefs of Staff, and the Institute for Defense Analysis. See attachment for names of experts, their organization affiliations, and areas of expertise.

The group mentioned above found the CIAS to be fundamentally sound, the models comprising the CIAS based on accepted techniques of economic analysis, and the linking of the models in the system logical. However, there are uncertanties in both the modelling process and the data employed which emphasize the need for sound professional judgment in the development of inputs to the system and the interpretation, evaluation, and utilization of the system outputs. In spite of these uncertainties, the group viewed the CIAS as the best available tool for the calculation of gross material supply/requirement imbalance estimates.

In another aspect of reviewing stockpile methodology, CIAS projections of material requirements were compared with forecasts made independently by the INFORUM Model developed at the University of Maryland. The two models produced results which were quite similar, and the CIAS-produced results were more accurate in comparison to published data for 12 to 14 materials.

In a third aspect of reviewing methodology, Cresap, McCormick and Paget, Inc. surveyed the reliability of the CIAS and its component models under contract when FPA first became part of the General Services Administration. Forecasts of the MCL-Thurow model were found to be reliable for two to three years when used in conjunction with a disturbance matrix. Since then the model has been revised and re-estimated to further increase its reliability. The methodology for distributing macroeconomic forecasts to input-output sectors was found to be reliable and desirable, although the data used at that time was not current. The most recent data published by the Department of Commerce have now been incorporated. The material requirements module was found to produce good estimates of materials requirements primarily due to the currency of the material consumption ratios used.

Finally, the review of stockpile methodology was approved by FPA's Program Advisory Committee, a group of senior economists from business and educational institutions who meet periodically with the Director of FPA.

Experts consulted on stockpile methodology

Name and organization affiliation	*Area of expertise*
John Flannagan, U.S. Department of Commerce.	Quantitative economics.
K. L. Wang, Bureau of Mines	Input-output economics.
Robert Johnson, Jr., Bureau of Mines	Mineral economics.
R. W. Gilmer, Institute for Defense Analysis	Quantitative economics.
Paul F. McCoy, Institute for Defense Analysis	Do.
Lt. Col. William D. Owens, Pentagon	Do.
Bruce A. Gulliver, Pentagon	Do.
Robert Hampton, Cresap, McCormick & Paget	Economic models and systems.
Allen Benn, Cresap, McCormick & Paget	Economic systems.
Drury Norris, Cresap, McCormick & Paget	Economic models and systems.
Gilmore Wheeler, Cresap, McCormick & Paget	Input-output models.
Dennis Yee, Cresap, McCormick & Paget	Economic models and systems.

Senator PROXMIRE. Have any of the sales or disposals of excess stockpiled materials been made to the Department of Defense or any branch of the armed services?

General BRAY. You say have they been made to them?

Senator PROXMIRE. Yes, or to any branch of the armed services—the Navy, the Army, the Air Force.

General BRAY. I want to be very precise in answering your question. We at times, Mr. Chairman, have loaned materials out of the strategic stockpile to the Army or the Air Force as a method of storing. In other words, rather than storing it in a warehouse somewhere, if they had a use of the material on a temporary basis, we have at times approved, myself, on a case-by-case basis.

Senator PROXMIRE. Well, let me just say what I am getting at. What I am getting at is whether or not there is a second stockpiling policy on the part of the Government.

General BRAY. No, sir.

Senator PROXMIRE. And the military.

General BRAY. No, sir.

Senator PROXMIRE. The Air Force doesn't do any stockpiling on their own, nor does the Army or the Navy?

General BRAY. Not of strategic materials, no, sir.

Senator PROXMIRE. Mr. Bray, if the stockpile is to be used for economic warfare or for other foreign policy purposes, as recent history suggests that it might, doesn't the President need new statutory authority to use the stockpile in that way?

General BRAY. Absolutely, Mr. Chairman. He would need new statutory authority.

Senator PROXMIRE. Is that authority expected to be requested?

General BRAY. I would like to quarrel, sir, with the thought that it really has been used for that purpose. My—I said earlier I didn't want to get into a detailed defense of each time it was used, but my general review over these 27 instances doesn't really bear out that conclusion. I won't agree, however——

Senator PROXMIRE. Wait a minute. It doesn't bear out what conclusion?

General BRAY. A conclusion that it has been used for economic warfare or economic stabilization purposes. In my judgment, the case was made each time on the basis of the needs of the common defense.

Now, I would agree with you that if the Congress—if somebody wants us to use these materials in the strategic stockpile for economic warfare or for price stabilization or for any of the other purposes that an economic stockpile is intended for, absolutely, yes, it should require new legislation. We should not bastardize the current Strategic and Critical Materials Stock Piling Act for a purpose for which in my judgment it is clearly not intended.

Senator PROXMIRE. Now, General Bray, given a very substantial increase in the stockpile goals, even over the pre-1973 levels, it is hard to avoid the conclusion that they serve some purpose other than the national defense, either that or the people formerly in charge of stockpiles were negligent or didn't understand stockpiles, for example.

It is well known that Secretary Kissinger favors a policy of stabilizing prices and markets to prevent cartels in producing nations.

What assurances do we have that the stockpile goals are not aimed at world price and market stabilization?

General BRAY. I do not agree that our new goals reflect any change in intent in the use of the stockpile beyond those very narrow purposes of the Strategic and Critical Materials Stock Piling Act.

Senator PROXMIRE. Well, then, how do you account for the increase in the goal for copper when domestic production is very large, and foreign sources benefit from increased goals are Chile and Zambia and Zaire.

General BRAY. I will show you very clearly that our projected requirements for copper in a wartime situation cannot be met by the assured sources of supply and therefore we need to stockpile copper. Only that, precisely that, and only that. No impact from the Zambian problem, no impact from world price stabilization at all.

Senator PROXMIRE. Well, I am not talking about the fact that we need to stockpile some copper. I am talking about the fact that the stockpile has been increased as much as it is, that it is on a 6-year basis, a 6-year production year.

General BRAY. No, sir, it has no impact at all.

I assure you that it is not a factor at all in the deliberations.

Senator PROXMIRE. Now, a number of policymakers and advisers here in Washington have advocated using materials stockpiles as a unilateral buffer stock to break up any incipient producer cartels.

Would that reasoning account for the high stockpile goals?

General BRAY. Absolutely not; no, sir.

Senator PROXMIRE. What about sales of stockpiled materials to other nations? I understand that we sold industrial diamonds to Israel in 1975 without permitting American dealers to bid on them.

General BRAY. We did, sir, and that was not a factor in establishment of the new stockpile goals. Not only that, but sales to any foreign country were not a factor in determining or establishing what our goals ought to be.

Senator PROXMIRE. Well, how is that kind of preferential treatment justified under the terms of the Stockpiling Act of 1946?

General BRAY. You mean the specific sale of industrial diamonds to the Government of Israel in the past?

Well, Mr. Chairman, in the first place, I don't think it is contrary to law at all. I do think it was a—there was a precedent, and if I look back on it, as I testified before a couple of committees a few months ago, if we had to do it over again, I would come up before the committee and advise them of what our intentions were, and read them on it beforehand.

I find nothing in the law, however—when we have authority from Congress to dispose—that precisely describes how we must dispose of a material, and we do have a long history. Our intentions are to protect the U.S. Government as best we can and get the best money for the material and so on. In this particular instance, there was the sale of industrial diamonds, part of an overall economic assistance package to the Government of Israel in which this was simply one of the factors that was used. We did get money for this. We did sell it under clear authority from Congress to dispose of the material. The law authorizing the disposal of diamonds—Public Law 92–108—specifically provided for the type of disposal used in this case.

As I say, as a precedent, and because it was the first time we had used that particular method of negotiated sale to a particular foreign country, I think we would have been prudent to come to the appropriate committees and advise them of it, but I do not think it was illegal, and certainly it had nothing to do with the establishment of our new stockpile goals at all.

Senator PROXMIRE. Well, will we sell stockpile materials that are not in excess to our allies or other friendly nations if they need them?

General BRAY. No, sir, that are not in excess? Only—in other words——

Senator PROXMIRE. We did in the case of diamonds.

General BRAY. No, sir, those were excess.

Senator PROXMIRE. Those were excess?

General BRAY. Those were excess, absolutely, and the Congress had authorized us to dispose of them.

Senator PROXMIRE. General Bray, I want to thank you very much. You are obviously an extremely well informed witness, and you are highly competent.

I am troubled by this new policy, as you might be able to see by my questions, and I am not at all satisfied that over the next 5 years that we are not going to have an increased cost because of this policy. I have never seen a defense policy of any size that didn't exceed its costs, and I doubt if this is an exception to that, and this has been the instance for almost 20 years.

At any rate, your testimony is most crucial to the record. I hope you will respond to questions we will submit to you for the record.

General BRAY. Yes, sir.

Senator PROXMIRE. We would appreciate it.

General BRAY. Thank you, Mr. Chairman.

Senator PROXMIRE. Our next witness is the Comptroller General, Mr. Elmer Staats.

We would like to have Mr. Staats here to testify.

Mr. Staats, we are delighted to have you this morning, and you have a substantial statement with a number of appendixes which we will have printed in full in the record.

And if you want to summarize your statement, we would be happy to have the entire statement printed in full in the record, and you might introduce your colleagues.

STATEMENT OF HON. ELMER B. STAATS, COMPTROLLER GENERAL OF THE UNITED STATES; ACCOMPANIED BY MONTE CANFIELD, DIRECTOR, ENERGY AND MINERALS DIVISION; JOSEPH FERRI, ASSISTANT DIRECTOR, ENERGY AND MINERALS DIVISION; AND WERNER GROSSHANS, ASSOCIATE DIRECTOR, LOGISTICS AND COMMUNICATION DIVISION

Mr. STAATS. Thank you, Mr. Chairman.

In the interest of saving time, if I may, I would like to have the entire statement submitted for the record, and then I will read only a relatively small part of it, and we will be hopefully responsive to your questions.

I have with me this morning Mr. Monte Canfield, the head of our Energy and Minerals Division, and Mr. Joe Ferri, to his right, Assist-

ant Director of that Division; and Werner Grosshans here who has been concerned with the stockpile problem for quite a long while, testified before Congress on it, and is Associate Director of our Logistics and Communications Division.

Mr. Chairman, we have made a number of studies involving materials and minerals over the past several years. We have included reference to those in the appendix to this report, but roughly, our most recent work dates back to 1974, growing out of the great concern developed in 1973, particularly in the field of energy, as to the availability of critical materials to the United States for all of its requirements.

If I may, I will start on page 6 (see p. 44) of our statement. It picks up the current work on the stockpile by the National Security Council. The NSC in 1973 provided certain changes in assumptions to the General Services Administration's Federal Preparedness Agency which is responsible among other things for the management of the national and strategic stockpile.

The changes in assumption in April 1973 reduced the objectives for the stockpile from $4.8 billion to $700 million.

The basic assumptions which were changed and which had the most profound effect on the national stockpile included, (1) reduced reliance on the national stockpile as a source of supply from 3 years to 1 year during an emergency; (2) revised import assumptions and rates; and (3) increased civilian austerity and greater use of substitutes.

We reviewed these changes and testified on two occasions before the Subcommittee No. 3 of the House Armed Services Committee. Our report entitled, "Stockpile Objectives of Strategic and Critical Materials Should Be Reconsidered Because of Shortages," was issued March 11, 1975.

Because the United States relies heavily on imports of some materials and because the possibility of producer boycotts exists for some of the resources, the United States may no longer be able to assure that we can always import quantities to satisfy our increasing demand of materials.

We concluded that long-range planning was needed particularly for materials which have no substitutes, are largely imported, are in strong demand, and are susceptible to producer boycotts.

We recommended that the Secretary of Defense and the National Security Council reevaluate the current stockpile and insure that the Nation's readiness need is met. We also recommended that the GSA Administrator use this data, as well as data from other studies that were in process, to arrive at new national stockpile objectives.

The House Armed Services Committee did not publish a report on their hearings involving authorizations of disposal of several materials. However, it became abundantly clear that the committee would not act favorably on the bills until a complete analysis had been performed. A National Security Council staff member confirmed this and also stated that President Ford was not necessarily convinced that the 1973 change was appropriate.

The NSC issued a study memorandum on August 14, 1975, tasking the various agencies to make a new analysis.

The first phase of the study, completed in November 1975, concluded that more work should be done. The second phase was completed in July 1976. Results of this phase, we are told, cited the pros and cons of the 1- to 3-year alternative assumptions, and the President chose the 3-year option. The President signed the NSC decision memorandum in August 1976.

We have requested these studies from the NSC, but we have not been furnished copies. We have been permitted to read portions of the study. However, until we are given the opportunity to review the studies in detail, it is difficult to evaluate the support to the proposed stockpile policy.

I might say when this reading took place, we were not allowed to take any notes or take any papers back with us.

Now, if I may, I would like to move over to page 11 (see p. 45) which comments on the materials plan. GSA contends that the Annual Materials Plan will give the Congress the desired visibility as to the stockpile needs. This plan will be submitted annually with the President's budget and will identify the dollars required to buy critically needed stockpile items. The specific minerals or metals will not be identified in the annual plan to insure that market prices will not rise rapidly once the Government's needs are known. We are told this information will be readily available in closed hearings. The plan will also identify items which represent excesses and the quantity of materials which can be disposed of during the year. The current procedure for requesting congressional approval for the disposal of strategic and critical materials will be followed.

While we agree the Annual Materials Plan will provide Congress with the opportunity to decide whether to fund any or all of the requested needs for the year, we believe that in order for the Annual Materials Plan to be of most use to the Congress. it should be supported or supplemented by the Federal Preparedness Agency's long-range plan for meeting the established goals extending beyond the budget year.

When considering budget requests for specific items to meet the general civilian goal which have less priority than defense goals, the Congress should consider the trade-off of investing funds for other long-term options such as increased materials research and development as a means of minimizing foreign dependency. According to the NSC staff member, trade-offs such as these were not specifically addressed in their study.

The recently announced policy change regarding the strategic and critical materials stockpile again raises the issues of whether (1) the stockpile will be used solely for military purposes or for economic purposes as well; (2) the strategic and critical materials stockpile represents the most desirable method of accomplishing the designated objectives; and (3) the appropriate items and quantities are being stockpiled. Also of concern is whether the stockpile fits appropriately into the Nation's evolving materials policy.

Let me comment on each of these three questions.

The purpose of the stockpile is to insure that we will have the necessary raw materials to support military requirements and the basic civilian economy during periods of extended conflict and when normal

foreign supplies of these materials are disrupted. By maintaining appropriate levels of these materials in the stockpile, U.S. dependence upon foreign nations in time of war can be prevented or reduced. The stockpile consists of 93 minerals, metals and other industrial materials stored at 122 locations in the United States. Most of the materials were acquired prior to 1959.

The language of the Strategic and Critical Materials Stock Piling Act of 1946 seems fairly clear regarding the use of the stockpile primarily for military purposes. However, past acquisition and disposal actions have caused many knowledgeable people to conclude that, for some time, the United States has operated a de facto economic stockpile, bowing to industry pressure in times of tight supply to release stocks and, at other times, threatening releases to bring down raw materials prices.

With respect to the recent policy change and the resultant increase in stockpile composition and size, some industry officials see the Government's intentions as creating an economic stockpile which could be released for other than military purposes. During public hearings on economic stockpiling held recently by the National Commission on Supplies and Shortages, a variety of witnesses expressed the belief that the Government was creating an economic stockpile.

Our discussions with the Federal Preparedness Agency and the National Security Council staff member indicated that the current goals fulfill most of the U.S. needs for the selected critical materials for a number of years. These needs were derived from a basis of war demands. It is quite apparent that most supply disruptions and price gouging in peacetime could be met if a stockpile based on wartime demands were used for a peacetime purpose.

We believe specific legislation should be introduced if the administration intends to use a more liberal interpretation for releases of materials. The new three-tier computation does permit better visibility and provides a basis for specific congressional guidance regarding releases to meet other than war emergencies. Such guidance should be made explicit in the statutes which govern use of the stockpile and the conditions under and purposes for which acquisitions and sales can be made.

Second, the stockpile involves consideration of both military and civilian uses. Rigidly applied, the stockpile would be used solely for military purposes. However, the uncertainty of foreign dependency, which gives rise to the need to stockpile for military purposes, is equally applicable to the civilian sector of the economy in nonwar situations. Although one stockpile could be used to meet both military and civilian economic needs, we believe the issue is more adequately addressed in the context of overall materials policy.

It is difficult to see how the policy change of increasing the stockpile fits into a national materials scheme. We know, for example, of no executive branch effort to seriously evaluate the options available to accomplish the stockpile goal of supporting requirements during periods of extended conflict. Institutionally, numerous options could be explored to alleviate unstable foreign dependency in whole or in part, including agreements on a commodity-by-commodity basis with producer and consumer countries, either bilateral or multilateral; a

Government corporation to hold military and economic stocks; a Government-owned, but privately managed, stockpile arrangement; an independent Government agency like the Federal Preparedness Agency holding military and economic stocks; membership in a commonly held stockpile of an international organization.

Over the longer term, given the high U.S. dependency on imports for stockpile items, other available options could be explored to reduce that dependency and minimize stockpile costs. These options, at least for some items being stockpiled, include: increasing the level of research and development of materials to make them last longer and perform better; creating appropriate incentives or requiring mandatory recycling and resource recovery practices; encouraging substitution, in the design stage, of relatively abundant materials for relatively scarce materials.

We have not examined the options mentioned above nor do we suggest they all are feasible. The point is that options do exist and these should be explored as possibly more viable ways of fulfilling our national needs.

In any case, it seems premature to implement a major stockpile policy change without the benefit of the report of the National Commission on Supplies and Shortages which is due to the Congress in December of this year. And I would say, Mr. Chairman, I am pleased to learn from my staff that you do plan to hold hearings on this subject again after that report if available, and we certainly hope that you will.

This Commission, by the way, came about in part because of a report we submitted to the Congress pointing up in great detail some of the concerns I just expressed here in summary form. Hearings were held, joint hearings between the Senate Government Operations Committee and the Senate Commerce Committee in which we recommended strongly that we needed a central focal point in the Government to pull together the various estimates of supplies and shortages and provide tradeoff options over a long period of time. This Commission was then set up to make a study and make recommendations.

One of the specific parts of the charter of this Commission was directed at stockpile policy in relationship to overall national materials policy, so I think it will be very relevant to the subject of your hearings today.

Now, third, items and quantities to be stockpiled.

As we said earlier we have not been able to examine the underlying data supporting the National Security Council judgments on what should be stockpiled. We know something about the method used. It seems sound. But, that is about as far as we can go.

Extensive attention has been given to the potential problem of supply shortages of critical materials, as evidenced by the existence of a National Commission on Materials Policy, a National Commission on Supplies and Shortages, and recent reports by the National Academy of Science, the Council on International Economic Policy, and the Interior and Commerce Departments. There is, as yet, no apparent consensus concerning the definition of critical materials. Also, there is, as yet, no well-developed method for ascertaining which materials are truly most critical to the functioning of the U.S. industrial economy and maintenance of socioeconomic stability.

The shift in metal and mineral processing industries, such as in zinc and chromium, from the United States to other countries creates further ambiguity in terms of whether raw or processed materials should be stockpiled. In this regard, the future makeup of these industries has real importance. Some very important tradeoffs are involved here. On the one hand, it might be well that high energy using industries leave the United States, thereby lessening our energy demands and reducing our pollution problems. On the other hand, there is a loss of employment, our import bill increases greatly, we could be accused of exporting our pollution problems, and there would be reduced U.S. industry capacity to process the materials being stockpiled.

To summarize, we think the policy change on the stockpile ought to be considered in the context of overall U.S. materials policy. Many improvements bearing on the Government's ability to deal intelligently with materials problems still need to be made. We talked a little bit about improved impact analysis, information requirements, and consideration of alternative devices for meeting stockpile objectives.

We would like to know more, and we think the Congress and the public would, too, about the rationale supporting the change from a 1-year to a 3-year emergency period for all demands and the circumstances and conditions under which purchases or releases will be made. And, of course, more knowledge is needed about the judgments concerning the items and quantities being stockpiled. GAO has a continuing interest in this policy and, as a next step, we will look at the stockpile recommendations made by the National Commission on Supplies and Shortages.

Now, we would be happy, Mr. Chairman, to respond to any questions that you have.

[Prepared statement of Mr. Elmer B. Staats follows:]

PREPARED STATEMENT OF ELMER B. STAATS, COMPTROLLER GENERAL OF THE UNITED STATES

Mr. Chairman and Members of the Committee: You asked for our views on the recently announced policy changes for the Strategic and Critical Materials Stockpile. My comments deal with the stockpile policy change in the context of overall U.S. materials policy questions. I will convey our general observations on materials problems; briefly discuss the current and previous changes in stockpile assumptions and—present our observations on the new policy change.

In 1973–74, the United States was beset with increased energy costs, materials shortages, rising inflation, and increasing dependency on foreign sources for materials needs. The Government resorted to imposing export controls to protect the domestic economy against shortages of some goods. Most concerns focused on energy but serious purchasing problems existed with over 100 industrial products. Our report to the Congress in April 1974, "U.S. Actions Needed to Cope with Commodity Shortages," stated that the United States did not have an effective planning, policy analysis, and policy formulation system for basic commodities. We made a series of recommendations directed at improving executive branch performance on these matters. I testified before a joint hearing of the Senate Commerce and Government Operations Committees in April 1974 and suggested the Congress consider the need for legislation to establish a centralized mechanism for developing and coordinating long-term materials policy planning.

The best defined materials policy will languish unless the institutional arrangements are appropriate for carrying it out. U.S. materials responsibilities are generally considered to be centered in the Department of the Interior.

But, there are at least 23 Federal agencies, with some 90 different subdivisions engaged in funding materials research and development alone. Further, some 15 departments and 30 agencies conduct programs which, in efforts to achieve other social goals, may inhibit or hinder mineral production.

To bring some order to this situation, we have supported establishing a Department of Energy and Natural Resources, coupled with a Cabinet-level Council of Materials established to fill a responsible leadership role on materials matters.

Since April 1974, we have issued a series of reports on materials matters.[1] We have continued to report on the need for developing a more coherent Federal materials policy improved Government information systems, a clearer focus of materials research and development on priority national problems, improved dialogue between the Government and industry on materials problems, and consideration of materials policy on a broad domestic-international basis.

Because of the lack of an adequate policy-making organization and continuing concern with materials problems in general, as reported by GAO and others, the Congress in 1974 authorized creation of the National Commission on Supplies and Shortages. The Commission was asked to recommend, by December 1976, the institutional arrangements appropriate to handling materials problems, including approaches for improving information flows. It also was asked to report on . . . "necessary legislative and administrative actions to develop a comprehensive strategic and economic stockpiling and inventories policies which facilitates the availability of essential resources . . ."

Hopefully, the results of this effort will provide better guidance for future materials directions. While we do not know what the Commission might ultimately report, we believe that the efforts of the Commission should help us understand more fully the nature of the materials issue and potential ways of dealing with it.

AUTHORITY TO USE STRATEGIC AND CRITICAL MATERIAL STOCKPILE

Let me turn now to the strategic and critical materials stockpile. The basic authority for establishing and using a strategic materials stockpile is the Stockpiling Act of 1946. Over the years the stockpile has been used in selected cases for what appears to be other than "common defense" or "national emergency." Some authorities have argued that the stockpile has been used as a de facto economic stockpile.

It might be helpful at this point to look at the language of the Act and cite an example of how the material in the stockpile has been used to help the economy.

Section 5(a) provides that a release of material from such a stockpile may be made by a Presidential order at any time when, in his judgment, such release is "required for purposes of common defense."

Section 5(b) permits such release on order of the President in time of war or during a national emergency with respect to common defense proclaimed by the President.

In 1965, the Attorney General was requested to rule on the release of copper from the stockpile at a time when the copper industry was threatened by both disruption of supply and price escalation.

Attorney General Nicholas Katzenbach interpreted section 5(a) and (b) as follows:

"The language of Section 5, taken together with its legislative history, indicates that materials from the strategic stockpile should be released only when there exists a clear relationship between their release and the common defense purposes for which they are acquired."

The Attorney General also indicated that although the President's authority was broad, legislative history suggests that the President must relate the materials disposal to common defense.

The Attorney General ruled that the release of copper was appropriate, since the domestic industry was disrupted by greatly increased defense efforts in Vietnam and by international political disturbances.

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[1] A listing of materials-related reports is included as Appendix A.

However, in a prior case dating back to 1954, then Attorney General Herbert Brownell ruled against the release of some diamonds from the stockpile, since, in that instance, no relationship to common defense existed.

It must be recognized that the stockpile has been used over the years to assist specific industries. This can be done by Presidential authority as was the case with the copper industry, or through the sale of excesses. Under existing legislation, specific disposal authorization is required from Congress for each commodity except for materials acquired under the Defense Production Act.

STRATEGIC AND CRITICAL MATERIALS STOCKPILE

The National Security Council in 1973 provided certain changes in assumptions to the General Services Administration's Federal Preparedness Agency which is responsible among other things for the management of the national and strategic stockpile.

The changes in assumptions in April 1973 reduced the objectives for the stockpile from $4.8 billion to $700 million.

The basic assumptions which were changed and which had the most profound effect on the national stockpile included (1) reduced reliance on the national stockpile as a source of supply from 3 years to 1 year during an emergeny, (2) revised import assumptions and rates, and (3) increased civilian austerity and greater use of substitutes.

We reviewed these changes and testified on two occasions before the Subcommittee Number 3 of the House Armed Services Committee. Our report entitled, "Stockpile Objectives of Strategic and Critical Materials Should be Reconsidered Because of Shortages," was issued March 11, 1975.

Because the U.S. relies heavily on imports of some materials and because the possibility of producer boycotts exists for some of the resources, the United States may no longer be able to assume that we can always import quantities to satisfy our increasing demand of materials.

We concluded that long-range planning was needed particularly for materials which: have no substitutes, are largely imported, are in strong demand, and are susceptible to producer boycotts.

We recommended that the Secretary of Defense and the National Security Council reevaluate the current stockpile and insure that the nation's readiness need is met. We also recommended that the GSA Administrator use this data, as well as data from other studies that were in process, to arrive at new national stockpile objectives.

The House Armed Services Committee did not publish a report on their hearings involving authorizations of disposal of several materials. However, it became abundantly clear that the Committee would not act favorably on the bills until a complete analysis had been performed. A National Security Council staff member confirmed this and also stated that President Ford was not necessarily convinced that the 1973 change was appropriate.

The NSC issued a Study Memorandum on August 14, 1975, tasking the various agencies to make a new analysis.

The first phase of the study, completed in November 1975, concluded that more work should be done. The second phase was completed in July 1976. Results of this phase, we are told, cited the pros and cons of the 1- to 3-year alternative assumptions, and the President chose the 3-year option. The President signed the NSC Decision Memorandum in August 1976.

We have requested these studies from the NSC, but we have not been furnished copies. We have been permitted to read portions of the study. However, until we are given the opportunity to review the studies in detail, it is difficult to evaluate the support to the proposed stockpile policy.

IMPACT ON STOCKPILE

The President's new stockpile policy has been implemented by the Federal Preparedness Agency. New stockpile goals were determined as of October 1, 1976. The new stockpile goals were arrived at by determining requirements and availability of supplies for three categories, or tiers, according to the tier's relationship to the war effort. The three categories are:

(1) Defense—direct and indirect expenditures by the defense sector, computed separately for each material for each of the 3 years.

(2) Essential civilian—includes civilian expenditures directly related to the war effort (for each of the 3 years).

(3) General civilian—includes expenditures which are most supportive of a *broad* industrial base (for each of the 3 years).

GSA officials told us that they believe three factors probably had the largest influence in increasing the stockpile goals:

Expanding the support from 1 to 3 years.

The use of the political reliability factor, which was not used in the 1973 calculations.

Increase in shipping losses in arriving at the supplies available for defense needs.

The specific factors included in the Federal Preparedness Agency's model for arriving at the new goals, are listed in Appendix B and the various agencies that provided pertinent input are listed in Appendix C.

We have attempted to quantify the current goals to give the Committee a better perspective of how much money is potentially involved in the three broad categories. The table in Appendix D summarizes the results of our efforts. We hasten to add that we are not suggesting that the full amount of this would ever be requested by the President, nor that Congress would, or should, fund this.

In brief, the table shows:

Total stockpile goals to be about $10.3 billion of which $3.5 billion can be met by materials on hand.

A goal for defense needs of $2.3 billion of which $1.4 billion can be met from materials on hand.

Of the total $7.4 billion of materials currently on hand, approximately $3.9 billion is in excess of the new goals.

GSA officials have been reluctant to quantify the new goals because the goals do not represent quantities that must be acquired within 1 year but rather they represent a long-term proposition. Market considerations of availability and price will have a major bearing on whether the shortfalls are acquired. Thus, they believe quantifying the goals beyond the contemplated Annual Materials Plan will have no value.

GSA contends that the Annual Materials Plan will give the Congress the desired visibility as to the stockpile needs. This plan will be submitted annually with the President's budget and will identify the dollars required to buy critically needed stockpile items. The specific minerals or metals will not be identified in the annual plan to insure that market prices will not rise rapidy once the Government's needs are known. We are told this information will be readily available in closed hearings. The plan will also identify items which represent excesses and the quantity of materials which can be disposed of during the year. The current procedure for requesting Congressional approval for the disposal of strategic and critical materials will be followed.

While we agree the annual inventory plan will provide Congress with the opportunity to decide whether to fund any or all of the requested needs for the year, we believe that in order for the Annual Materials Plan to be of most use to the Congress, it should be supported or supplemented by the Federal Preparedness Agency's long-range plan for meeting the established goals extending beyond the budget year.

When considering budget requests for specific items to meet the general civilian goal which have less priority than defense goals, the Congress should consider the trade-off of investing funds for other long-term options such as increased materials research and development as a means of minimizing foreign dependency. According to the NSC staff member, tradeoffs such as these were not specifically addressed in their study.

The recently announced policy change regarding the strategic and critical materials stockpile again raises the issues of whether the stockpile will be used solely for military purposes or for economic purposes as well, the strategic and critical materials stockpile represents the most desirable method of accomplishing the designated objectives, and the appropriate items and quantities are being stockpiled. Also of concern is whether the stockpile fits appropriately into the Nation's evolving materials policy.

The purpose of the stockpile is to insure that we will have the necessary raw materials to support military requirements and the basic civilian economy during periods of extended conflict and when normal foreign supplies of these materials are disrupted. By maintaining appropriate levels of these materials in the stockpile, U.S. dependence upon foreign nations in time of war can be prevented or reduced. The stockpile consists of 93 minerals, metals, and other industrial materials stored at 122 locations in the United States. Most of the materials were acquired prior to 1959.

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With respect to the recent policy change and the resultant increase in stockpile composition and size, some industry officials see the Government's intentions as creating an economic stockpile which could be released for other than military purposes. During public hearings on economic stockpiling held recently by the National Commission on Supplies and Shortages, a variety of witnesses expressed the belief that the Government was creating an economic stockpile.

Our discussions with the Federal Preparedness Agency and the National Security Council staff member indicated that the current goals fulfill most of the U.S. needs for the selected critical materials for a number of years. These needs were derived from a basis of war demands. It is quite apparent that most supply disruptions and price gouging in peacetime could be met if a stockpile based on wartime demands were used for a peacetime purpose.

We believe specific legislation should be introduced if the administration intends to use a more liberal interpretation for releases of materials. The new three-tier computation does permit better visibility and provides a basis for specific congressional guidance regarding releases to meet other than war emergencies. Such guidance should be made explicit in the statutes which govern use of the stockpile and the conditions under and purposes for which acquisitions and sales can be made.

Second, the stockpile involves consideration of both military and civilian uses. Rigidly applied, the stockpile would be used solely for military purposes. However, the uncertainty of foreign dependency, which gives rise to the need to stockpile for military purposes, is equally applicable to the civilian sector of the economy in non-war situations. Although one stockpile could be used to meet both military and civilian economic needs, we believe the issue is more adequately addressed in the context of overall materials policy.

It is difficult to see how the policy change of increasing the stockpile fits into a national materials scheme. We know, for example, of no executive branch effort to seriously evaluate the options available to accomplish the stockpile goal of supporting requirements during periods of extended conflict. Institutionally, numerous options could be explored to alleviate unstable foreign dependency in whole or in part, including:

Agreements on a commodity-by-commodity basis with producer and consumer countries, either bi-lateral or multi-lateral.

A government corporation to hold military and economic stocks.

A government-owned, but privately managed, stockpile arrangement.

An independent government agency like the Federal Preparedness Agency holding military and economic stocks.

Membership in a commonly held stockpile of an international organization.

Over the longer term, given the high U.S. dependency on imports for stockpile items, other available options could be explored to reduce that dependency and minimize stockpile costs. These options, at least for some items being stockpiled, include:

Increasing the level of research and development of materials to make them last longer and perform better.

Creating appropriate incentives or requiring mandatory recycling and resource recovery practices.

Encouraging substitution, in the design stage, of relatively abundant materials for relatively scarce materials.

We have not examined the options mentioned above nor do we suggest they all are feasible. The point is that options do exist and these should be explored as possibly more viable ways of fulfilling our national needs.

In any case, it seems premature to implement a major stockpile policy change without the benefit of the report of the National Commission on Supplies and Shortages which is due to the Congress in December of this year.

As we said earlier we have not been able to examine the underlying data supporting the National Security Council judgments on what should be stockpiled. We know something about the method used. It seems sound. But, that is about as far as we can go.

Extensive attention has been given to the potential problem of supply shortages of "critical" materials, as evidenced by the existence of a National Commission on Materials Policy, a National Commission on Supplies and Shortages, and recent reports by the National Academy of Science, the Council on International Economic Policy, and the Interior and Commerce Departments. There is, as yet, no apparent consensus concerning the definition of "critical" materials. Also, there is, as yet, no well-developed method for ascertaining which materials are truly most critical to the functioning of the U.S. industrial economy and maintenance of socio-economic stability.

The shift in metal and mineral processing industries, such as in zinc and chromium, from the United States to other countries creates further ambiguity in terms of whether raw or processed materials should be stockpiled. In this regard, the future makeup of these industries has real importance. Some very important tradeoffs are involved here. On the one hand, it might be well that high energy using industries should leave the United States thereby lessening our energy demands and reducing our pollution problems. On the other hand, there is a loss of employment, our import bill increases greatly, we could be accused of "exporting" our pollution problems, and there would be reduced U.S. industry capacity to process the materials being stockpiled.

To summarize, we think the policy change on the stockpile ought to be considered in the context of overall U.S. materials policy. Many improvements bearing on the Government's ability to deal intelligently with materials problems still need to be made. We talked a little bit about improved impact analysis, information requirements, and consideration of alternative devices for meeting stockpile objectives.

We would like to know more, and we think the Congress and the public would too, about the rationale supporting the change from a 1-year to a 3-year emergency period for all demands and the circumstances and conditions under which purchases or releases will be made. And, of course, more knowledge is needed about the judgments concerning the items and quantities being stockpiled. GAO has a continuing interest in this policy and, as a next step, we will look at the stockpile recommendations made by the National Commission on Supplies and Shortages.

Appendix A

Synopsis of Previous Reports

U.S. ACTIONS NEEDED TO COPE WITH COMMODITY SHORTAGES, B–114824, APRIL 29, 1974

The events of 1973 and 1974 highlighted the serious problems that the United States and other countries could face due to the growing spot shortages of basic resources. Our previous report entitled "U.S. Actions Needed to Cope With Commodity Shortages" stated that long-range planning was needed. There needs to be better and more effective coordination of supply and requirements estimates and better management of programs already authorized. Presently, the data bases—material resources and reserves, private research and development activities, and technological capabilities—have many gaps. And because the responsible agencies had not adequately developed their analytic resources, their ability was limited to discern broad trends, to integrate data from various sources, and to project future developments.

The executive branch system did not provide or coordinate the information needed for broad policymaking on future resource supply and demand situations. We therefore recommended in our report that one organization, designated by the Council on Economic Policy, coordinate agency analysis of long-range economic planning.

THE FIFTH INTERNATIONAL TIN AGREEMENT—ISSUES AND POSSIBLE IMPLICATIONS—B–125067, AUG. 30, 1976

This report issued August 30, 1976, presents the possible favorable and unfavorable consequences of the United States joining the Fifth International Tin Agreement subject to congressional consultations and ratification. The report presents the background on previous Tin Agreements and the relation between the U.S. tin stockpile and the Tin Agreement. On September 15, 1976, the Senate gave advice and consent on this treaty. In November, the United States formally became a member of this Agreement.

U.S. DEPENDENCE ON IMPORTS OF FIVE CRITICAL MATERIALS: IMPLICATIONS AND POLICY ALTERNATIVES—B–125067

Our report dated January 29, 1976, on U.S. dependence on imports for five critical minerals showed that major foreign suppliers of five imported minerals—bauxite, chromium, manganese, nickel, and tin—were (1) not politically motivated to withhold supplies from the United States and (2) interested in obtaining as much revenue as possible from mineral exports but were limited, primarily by economic forces, as to the amount they could increase prices.

We also concluded that economic stockpiles, as protection for political supply disruptions, are not needed except in the case of chromium where (1) the relationships between the U.S. and two large producers have been strained, (2) chromium sources are limited and reserves and resources are concentrated in only a few countries, and (3) a supply cutoff would seriously affect a sector of U.S. industry since chromium is essential to the manufacture of stainless steel.

On the other hand, economic stockpiles to protect against price gouging and shortages would cause certain problems which need full examination. The cost of stockpiles is a major disadvantage which should be scrutinized. Also, the impact of stockpiles on international relations should be considered.

STOCKPILE OBJECTIVES OF STRATEGIC AND CRITICAL MATERIALS SHOULD BE RECONSIDERED BECAUSE OF SHORTAGES B–125067, MARCH 11, 1975

In the March 11, 1975, report, we focused on the changes in various assumptions, authorized by the National Security Council, which affect the national stockpile. These changed assumptions in April 1973 reduced the objectives for the stockpile from $4.8 billion to $700 million.

The basic assumptions which were changed and which had the most profound effect on the national stockpile included (1) reduced reliance on the national stockpile as a source of supply from 3 years to 1 year of an emergency, (2) revised import assumptions and rates, and (3) increased civilian austerity and greater use of substitutes.

We concluded that long-range planning was needed, particularly for materials which: have no substitutes, are largely imported, are in strong demand, and are susceptible to producer boycotts.

We recommended that the Secretary of Defense and the National Security Council reevaluate the current stockpile to meet the nation's readiness needs. We also recommended that the GSA Administrator use this data, as well as data from other studies that were in process, to establish new national stockpile objectives.

PRESENT WORK

We are presently surveying the implications of repealing the Byrd Amendment, enacted in 1971, which permits the United States to import strategic materials from Southern Rhodesia in contravention of the United Nations sanctions program established in 1966. The basic commodity of importance in this survey is chromium. Issues covered will be national security including the strategic stockpile of chromium, capability of the domestic ferrochrome industry, and impact of a self-imposed disruption in supply of a strategic material.

REVIEW OF COMMODITY INFORMATION AND ANALYSIS SYSTEMS—(WORK UNDER WAY)

After the report on commodity shortages was issued, the Chairman of the Senate Committee on Commerce, in a letter to the Comptroller General, stated that it would be helpful to receive an assessment of the program and efforts of the executive agencies in the materials area since the issuance of our April 1974 report. We have, therefore, been in the process of reviewing the structure, functions, data handling procedures, and analysis capabilities of units within the Departments of Agriculture, Commerce, Interior, and State dealing with commodity information and analysis. To date, we believe that the Executive departments have increased their information and analysis capabilities, but our preliminary observations show that additional actions are needed to further strengthen these programs.

Appendix B

Factors Considered in Arriving at New Stockpile Goals

Some of the specific factors considered by the FPA when determining material requirements are: (1) Size and status of the U.S. Armed Forces, (2) substitution of other material, (3) austerity, (4) shift in personal consumption expenditures, (5) shift in investment demand, (6) imports, and (7) exports.

Factors considered when determining total supplies available to meet requirements are: (1) Shipping losses, (2) political reliability, (3) domestic production (normal production vs. full capacity production), and (4) foreign production.

Appendix C

Agencies Comprising the Interagency Committee that Performed Phase I and Phase II of the Stockpile Study and Subcommittees Chaired by the Departments

General Services Administration—Market and budget analysis, special material, upgraded forms, substitution, consumption ratio, methodology and data, and policy variable.

Department of Commerce.

Department of Treausry.

Department of Interior.

Office Management and Budget.

Department of Defense—Shipping losses, and expenditure patterns.

Department of State—Political reliability.

Council on International Economic Policy.

Central Intelligence Agency—Not a permanent member of the committee but submitted input on various subjects.

Energy Research and Development Administration—Not a permanent member of the committee but submitted input on various subjects.

APPENDIX D

QUANTIFICATION OF STOCKPILE GOALS

[In billions of dollars]

	Goal	Inventory on hand
Defense needs only:		
1 yr	$0.4	$0.4
2d and 3d yr	1.9	1.0
Total	2.3	1.4
Essential civilian:		
1 yr	.8	
2d and 3d yr	1.7	
General civilian	5.5	2.1
Total	10.3	3.5

Senator PROXMIRE. Thank you very much, Mr. Staats.

You heard the testimony by General Bray.

Does it seem logical to you that we could follow the recommendations in the new policy and increase the strategic stockpile on the basis of a 3-year assumption rather than a 1-year assumption, and increase 73 of the 91 commodities over 1973, increase—actually increase the amounts of materials now in stockpile and not have an increased cost, increased expenditure?

Is that likely?

Mr. STAATS. Mr. Chairman, in response to one of your questions to General Bray as to whether or not this policy had taken into account an overall national materials policy, I believe his reply was in the negative. One of the principal points we would make is that we believe that it was unwise to come to a 3-year program and a 3-year policy without the benefit of the report of the Commission on Supplies and Shortages and certainly out of context with the total materials situation.

As I have indicated, we do think that a great deal needs to be done in this whole area. It is a terribly important problem, as it has been since the Paley Commission in the early 1950's. The Federal Government has really not been organized to address itself to overall national materials policy.

So I would answer your question by saying that it would seem to me to be much better to have waited until this Commission had reported. Four members of that Commission are members of the executive branch, five members are appointees of the President from outside. It would just seem to me to have been much better to have waited. It creates another uncertainty in the picture, in my opinion.

Senator PROXMIRE. My question is whether or not it seems likely to you with your great experience and good judgment on cost of Government programs, if it seems likely that we could adopt this policy, follow this policy and not have a substantial increase in cost, and I notice on page 10 (see p. 45) of your statement—you omitted that in your oral testimony—you say the table shows total stockpile goals to be about $10.3 billion, of which $3.5 billion can be met by materials on hand. Our goal for defense needs of $2.3 billion, of which $1.4 billion can be met from materials on hand.

Now, General Bray indicated they would meet these objectives over a period of time, that he wouldn't expect to do this, not necessarily in 3 or 5 years, or even 10 years. Nevertheless, it seems to me if the objectives mean anything and we are going to move to these goals, there is going to be some cost. There is no gain without paying. We are going to have to expect to pay something for this.

Mr. STAATS. All of those, of course, are elements in the picture, but there is another factor here that if industrial users of materials and other countries who consume these materials that we are talking about, realize that we have this program in the offing, they are going to be uncertain as to how fast the U.S. Government is going to implement that policy, and it is inevitably going to bring more pressure on the prices of those materials.

Now, the point that we are going to be reducing over the next 3 years or 5 years, amounts from the stockpile, which will be roughly equivalent, approximately, to materials acquired, really does not impress me very much because you are talking about different materials. So you can't just lump all materials together.

I think it is inevitable that you are going to have some additional price, not only from the acquisition, but from the uncertainty of the market by other consumers of the same critical material.

Senator PROXMIRE. Does this suggest that the price of materials that are going to be required, that are likely to be required, would be likely to rise more rapidly than the price of what we are selling or disposing, that this might be an element in the additional raw costs.

Mr. STAATS. I think so.

Do you want to respond to this?

Mr. GROSSHANS. I think it is pretty hard to estimate, just like General Bray indicated, as to just what might happen. The plan that we have seen does indicate that there will be a period of time over which we will both acquire and dispose. The national security study's executive summary did indicate some figures in there, but this is classified. It did give us the impression that overall the impact over the next 5 years is not on the order of magnitude of the shortages that we are indicating here in Table D of the prepared statement. There will be acquisitions, there will be disposals, and based on that plan, disposals will be slightly more than the acquisitions.

But like Mr. Staats indicated, obviously they are in different materials, and what impact this will have on the marketplace is hard to predict.

Senator PROXMIRE. Well, have you had an opportunity to determine whether or not it is likely that they will have an effect on the marketplace. It may be that after all, if the world supply is a certain amount, world production is a certain amount, then an increase of 1 percent or less in acquisition over a period of time obviously wouldn't have much effect, or probably in most cases wouldn't have much effect.

On the other hand, if our acquisitions would be a bigger proportion than that, a 5- or 10-percent increase, it would have a considerable effect.

Have you had a chance to look at that in those terms, quantify the likely effect?

Mr. STAATS. Well, I suppose you would really have to do this in the context of some kind of an economic model projection, but if the

economy improves and grows as we hope and expect it to, and if the economy of western Europe recovers, there is going to be quite a pressure on these materials anyway, Mr. Chairman, and the addition of any new buying on the market is obviously going to have some upward pressure effect.

Senator PROXMIRE. Well, if you are reducing 18 and increasing 73, you would think that the effect overall would be necessarily an increase in price over time.

Let me ask you this, Mr. Staats. You say in your testimony on page 4 (see page 43) that there are major defects and gaps in the Government's materials information systems, especially gaps in the data on resources and reserves.

Do you think that these kinds of defects could mean that our stockpile goals suffer from large errors in terms of supply or demand estimates on which they are based?

Mr. STAATS. These estimates have to be very arbitrary, and lacking the information that we have in many of these areas, our report that we made in 1974 documented this in great detail. We found, I think, 40-some agencies in the Federal Government that were collecting data on materials, supplies or requirements not being pulled together anywhere centrally, and there was no staff to analyze this sort of an outlook picture.

We were accused in some quarters of advocating economic planning as a result of simply suggesting that we have some point in the Government that pulls together all the data on supplies requirements and provides some analysis as to what the options——

Senator PROXMIRE. Well, I think you made another of your many great contributions there. What I am getting at is, would these errors be grave enough to alter our stockpile policy?

Mr. STAATS. They could be, they could be.

Senator PROXMIRE. Now, this year marks the 30th anniversary of the Strategic and Critical Materials Stock Piling Act, and yet you say on page 6 (see p. 44) that there is no consensus in the Government on the definition of critical materials.

Why isn't there a definition for critical materials, and does the lack of one mean that we are—we may be stockpiling the wrong items?

Mr. STAATS. Mr. Canfield will respond to the question.

Senator PROXMIRE. Mr. Canfield?

Mr. CANFIELD. Mr. Chairman, we have under way an attempt to begin to analyze what would constitute criticality. As we did our initial survey on it, it was very obvious to us that the only particular criterion that we could discover where people would ring the buzzer and say yes, that is critical, is the amount of import dependence. But it is very difficult to use gross amounts of import dependence to get any feeling whatsoever—except a clue that you are importing—as to whether that material is truly critical to the U.S. economy.

Senator PROXMIRE. Well, that pertains to the economy, and of course, what we are concerned about here is the defense, where it would be even less useful it would seem to me. You have to make an entirely different analysis to determine whether the material was critical to defense, would you not?

Mr. CANFIELD. That's right, and Mr. Grosshans can answer questions about defense criticality.

Mr. GROSSHANS. Mr. Chairman, I think the question you raised before with respect to copper kind of gets at this particular point.

How you define what is critical in the defense connotation, strictly defense connotation, I think that determination can be made, but how far you are willing to go with respect to essential civilian and general civilian—most of your copper needs you were talking about are all in the third area, namely, general civilian, and in that particular case, that is driving the quantity.

Now, whether you would define that as being a critical material from a defense standpoint or not, I think you could argue that point. I think this is the basic message we have to address. How you define criticality might differ depending on whether you view it strictly from a defense standpoint, as contrasted to the whole economy.

Senator PROXMIRE. Well, you bring up copper. With respect to copper, here you have, as I pointed out, a substantial domestic production. The goal now is for a 6-year supply based on peacetime needs. The countries that would be favorably affected by an increase in goals are Chile and Zambia and Zaire.

Does this seem to be logical strictly in terms of our defense needs in your view?

Mr. GROSSHANS. Again you could argue, I think, quite effectively, that the whole third tier, general civilian, might not or should not be included from a stockpiling standpoint for strictly military needs. In fact——

Senator PROXMIRE. And if you leave that out, then the case for that kind of stockpiling of copper is not strong.

Mr. STAATS. No.

Mr. CANFIELD. No, it disappears entirely. There is no requirement that we have seen for defense needs because our industry is adequate and does meet those needs, nor is there a need for essential civilian, which is the second tier.

So on copper you are strictly in the general civilian category and may I make another point on this?

Senator PROXMIRE. Well, before you do that, then, it would seem to me that what you are saying with respect to copper is that it is a matter of economic, not military, stockpiling.

Mr. GROSSHANS. No. I wouldn't want to say that, Mr. Chairman.

Senator PROXMIRE. Well, you say the only justification is your third category, general civilian use.

Mr. GROSSHANS. Correct, but the National Security Council and the study group made the determination, and, as we are told, the President selected the option of saying he wants to cover all of those eventualities. In other words, he wants the economy sound in a case of wartime mobilization buildup, and therefore once you have defined it from that standpoint, then you have to say, OK, now, I have to consider all of my needs for copper, and they include general civilian needs.

The one point I did want to mention——

Senator PROXMIRE. I'm sorry. I beg your pardon.

Mr. GROSSHANS. If you did take a look at the total figures—we were talking in the statement about $10.3 billion—the best we can figure based on current market prices, over half of that is in the third category, about $5.5 billion is in that general civilian category. So that does become quite important, and copper is one of the big, driving

forces. That is about $1.6 billion, as I recall, out of about $5.5 billion.

Mr. STAATS. This is one of the reasons, Mr. Chairman, we emphasized so strongly the need to look at this in the context of overall materials policy, and particularly when you get into areas like research and development, substitutions, recycling, and things of this type. Most of it would have its impact on the general civilian economy, and now is the time to begin to look at those options as trade offs against buying the stuff from the stockpile.

Maybe you don't need it in the stockpile.

Senator PROXMIRE. Well, now, I am a little bit unsure now. I got the impression from General Bray that this was a military stockpile for defense purposes, strictly.

Now I am getting an impression from you that is quite different.

Mr. GROSSHANS. Mr. Chairman, the justification for the stockpile is strictly for mobilization purposes, wartime needs.

Senator PROXMIRE. Right.

Mr. GROSSHANS. But many needs during that period arise. Strictly defense needs—in other words, those needs that the defense industry will be tasked for—that portion under the new methodology can be specifically defined based on a 1-year, 2-year, or 3-year need.

Senator PROXMIRE. All right.

Then what you are saying is the assumption we are making is that we have a 3-year guns-and-butter approach with no significant disruption of our civilian economy, as well as providing for——

Mr. STAATS. Well, it is in this third category, Mr. Chairman, we have our strongest doubts. A great deal there will depend on how strict you want to be with the civilian economy. Are we going to have an automobile industry, are we going to have rationing, or what will be the conditions under which the civilian economy will operate under a period of mobilization. And unless you have that kind of information, I don't think you can make a judgment on what the general civilian needs might be.

Senator PROXMIRE. Well, the experience we had in World War II is we didn't have an automobile industry. We didn't produce automobiles for 3 or 4 years.

Mr. STAATS. Well, we don't know what assumptions were made with respect to how stringent the Government would be on the civilian economy.

Senator PROXMIRE. Now, you suggest in your testimony that ambiguity in stockpile policy and management led to various abuses or misuses.

Has the General Accounting Office ever investigated any of these problems, the kinds of problems I brought up where special interests would be interested in a change in acquisition or disposal policy because they would benefit from a price change.

Mr. GROSSHANS. I can respond to that. Over the years we have been requested to review a number of disposal actions from various Congressmen. They included aluminum, tin—we are currently looking into chromium, diamonds, and over the years we have not found a case where there was illegality or misuse under the statutes.

Copper was another one we looked at a couple of years ago.

Senator PROXMIRE. Now we are adopting a new policy, of course, a different policy and a more flexible policy, a policy that may be somewhat more amenable to manipulation or to misuse or to abuse. I think General Bray properly indicated he was sensitive to that and concerned about it.

Mr. STAATS. If you go back over the years, though, Mr. Chairman, you made reference earlier to the possibility of disposal being used to help out on the budget situation. There is no doubt in my mind that that has played a part over many years. You get to budgetmaking time, and you are looking for any new revenues and receipts that you can get.

Senator PROXMIRE. So what you are saying, that even though there hasn't been an illegality associated with it, or a corruption element in the usual sense, that it has been used for budget purposes in the past.

Mr. STAATS. Given the loose test, you might say, of what is critical, or what period of time you are going to assume requirements to take place, it affords a great deal of flexibility, shall we say, as to both the acquisitions and disposal side of the stockpile.

Now, if you want to take another case on the other side, in the case of mercury, when the price of mercury went up, there were disposals of mercury from the stockpile and a finding was made that that mercury was not needed. Now, the question would be whether that similar finding would be made if mercury prices hadn't gone up.

Senator PROXMIRE. Do you have any specific recommendations of how we might tighten up stockpile policy and management to minimize and prevent abuses?

Mr. STAATS. Well, in general we believe——

Senator PROXMIRE. One of the proposals I made this morning—and we are going to follow it up with a letter to General Bray, and he indicated he would respond—is that all approaches of any kind be made a matter of public record, that is, any kind of phone call, any kind of letter, any kind of approach of any sort, in which any representation was made, either by the executive branch or by industry.

Mr. STAATS. I have no problem with that suggestion, Mr. Chairman. I think it could be useful. I am not sure that is necessarily——

Senator PROXMIRE. Well, that is why I am asking you for additional suggestions.

Mr. STAATS. Well, I would be glad to give some further thoughts to it, and if my colleagues here have any suggestions, I am sure they will let you know.

Senator PROXMIRE. Mr. Canfield.

Mr. CANFIELD. We explicitly intend to look at the recommendations of the National Commission on Supplies and Shortages in terms of stockpiling. But coming back to the study I mentioned earlier, as we talked further, you saw that it was a very grey area, particularly in this third category as to the question of criticality and where defense and civilian overlap.

We think that additional analysis in this area over the next several months, coupled with explicit legislation which we recommended on page 14 (see p. 46) of Mr. Staats' testimony is the direction to go. Guidance would seem appropriate both in terms of what constitutes criticality and in terms of when a release could be made from the stockpile. It seems to me that kind of legislative guidance would move

from the vagueness that we have had in the past of what constitutes a defense purpose. It is in that direction that we hope to assist the Congress over the next several months, by looking at the National Commission on Supplies and Shortages study, evaluating those options and making proposals to you regarding ways of providing specific guidance to the executive as to what constitutes critical material, and as to what constitutes an appropriate time to release material.

So that is the direction in which we are going at the present time.

Mr. STAATS. I do have one specific suggestion, Mr. Chairman, and that is that the base in the Congress which reviews both acquisitions and disposals might well be broadened beyond the traditional base of the Armed Services Committee, which I think very properly looks at it strictly from a military standpoint. It seems to me there are economic implications here as well which might——

Senator PROXMIRE. Well, of course, that is one of the reasons why this is in this committee. The committee itself is an adjunct of the two banking committees. We have economic responsibilities primarily. The Armed Services Committee, of course, has primarily military responsibility. That is why I think the Congress has chosen to put this under our jurisdiction, and the new Stevenson recommendation would simply make it a subcommittee of the banking committee.

Mr. STAATS. Well, I am speaking of specific congressional review on acquisitions and disposals, case by case.

Senator PROXMIRE. Well, then, I take it you—I don't want to assume this if it is not true—if you assume this is more necessary now than before, inasmuch as the new stockpiling proposal, its flexibility and so forth may lend itself to greater abuses unless we are alert and careful about it and have procedures that would prevent it.

Mr. STAATS. Yes; and I would hope again that Congress would review carefully what comes out of the National Commission on Supplies and Shortages, and that would provide perhaps a good starting point for a review of the entire legislation.

Senator PROXMIRE. To go back just briefly to a point that was made before, do you think the President-elect should reexamine the inclusion of general civilian needs in the general stockpile goals?

Mr. STAATS. Yes; and I think the question that is receiving a great deal of debate in the press and elsewhere with respect to how you deal with the commodity agreements between consumer and producer countries has to be looked at in relationship to our stockpile requirements. If our policy is to push hard in the direction of agreements of that type, it could very well, and I think inevitably would, impact on the requirements for the stockpile.

Senator PROXMIRE. Now, you have stressed very impressively the general disorganization of materials policymaking in the executive branch.

Do you have any thoughts about how this could be remedied? Do you think this should be a central source for materials policy, including stockpile policy, for instance?

Mr. STAATS. Yes, indeed, and we have not recommended a specific organization or location for this in part because we have been urging strongly for some time for a Department of Energy and Natural Resources, and if that could be brought about, then we think that would

be the proper place for it. But absent that, it is very difficult to locate it organizationally except possibly in the Commerce Department.

Senator PROXMIRE. Now, you mentioned the legal conditions for releases from the stockpile. What is your interpretation of the range of purposes for which the strategic stockpile can be used?

Mr. STAATS. Legally—and this has been supported, of course, by rulings of the Department of Justice—it cannot be used except for common defense, but when you get beyond the words "common defense" it is very difficult to make those judgments.

Now, it depends on what the world situation is, and I suppose that this could be, again, something which needs a tighter definition in the statute.

Senator PROXMIRE. You were very critical of the 1973 stockpile policy decisions and objectives in the report that you released in 1975. Would you say that the new policy is an effective response to the criticisms you made of the 1973 policy?

Mr. STAATS. No, no; we do not think so because what we were saying then and what we are saying today is that we do not believe that you can derive an adequate stockpile policy without looking at the overall material situation.

Senator PROXMIRE. Let me be specific in terms of commodities. One of your criticisms of the 1973 policy was that the objectives seemed unrealistically low, but aren't these new goals unrealistically high in many cases, such as copper or lead or iodine, castor oil?

Mr. STAATS. No; I guess we would honestly say that absent the backup material which we have not been able to obtain, it is very difficult to answer that question. But it does look like they have gone quite a long way. perhaps overreacted.

Senator PROXMIRE. Well, then, would you say that kind of yo-yo effect results from the deficiencies in our materials information that you spoke of earlier?

Mr. STAATS. I don't see how, absent that kind of information, anyone can make a rational decision.

Senator PROXMIRE. Now, you indicated that the use of political reliability factors, political reliability in the 1976 stockpile calculations, accounted for much of the increase in the stockpile goals.

Are you and your staff satisfied that these political reliability indicators have the same kind of statistical validity as consumption ratios or other numbers used in the new formula?

Mr. GROSSHANS. We have taken a quick look at the methodology on this. We know how they have been derived. We have seen the questionnaire that was used. There were basically four subfactors that were considered. One of the subfactors concerned itself with the political orientation of the Government toward the United States and on a scale of 0 to 5, points were to be awarded to a series of questions in this subfactor.

Another subfactor included the economic sustainability in times of war for those particular countries, and again, there were 4 subfactors weighted with the same type of 0 to 5 scale.

The third subfactor included the dependability of the labor force, in other words, how stable were they, how disciplined were they and so on.

And the fourth factor included the potential for sabotage in case of a wartime situation.

Based on those ratings and weightings for those four factors, they arrived, then, at a total factor that was applied to the imports for those specific countries. Now, the methodology seems pretty sound from what we have seen.

Senator PROXMIRE. But how in the world can you provide a weight to something like that? It seems to me if they are very subject to sabotage, for instance, that might overwhelm everything else.

Mr. STAATS. These are criteria and tests that were made by the task group, but again, the question would be what information did they have available to them on which to make those judgments. Those are judgmental.

Senator PROXMIRE. Right, and then how long are the conditions likely to maintain after they have a finding, and how frequently are they revised?

Mr. STAATS. Well, I suppose in defense of what the administration has proposed, they would say they might do this every year when they come up with the materials program. If that were done, it would obviously have more value, because this is fairly perishable type of judgment. It depends on who happens to be sitting in that chair.

Senator PROXMIRE. It is a little hard to see the relation between the stockpile goal and the Annual Materials Plan, which can be subject to a lot of political or industry pressures.

Is there any way of knowing whether a particular acquisition and disposal plan represents anything more than experience?

Mr. CANFIELD. At this point in time, and maybe Mr. Grosshans would like to augment on this, but as far as we know, it is impossible for us to tell because we don't have access to the assumptions on which the material was based, and until we gain access to the material, we wouldn't be able to answer your question. All we were able to say in the testimony was that the relationship between them, particularly between the annual plan and the long term goals, is crucial, but we don't have access to data.

Senator PROXMIRE. Now, you spoke about access. Do you think that is justified in concealing that from the General Accounting Office? Were you satisfied that there was a reason for this kind of restraint in making it available?

Mr. STAATS. Well, as you know, Mr. Grosshans here was in the conversation. We wrote them two different letters.

Senator PROXMIRE. I am always appalled when the General Accounting Office is prevented from getting information, primarily because you have an absolutely perfect record as far as I know, and I challenge anybody to show any leaks that came out of your office. I never heard of any. Furthermore, you are the arm of the Congress. The Congress has a right to know this information, so I don't understand why you are not provided with all of the information that you have to have. No leaks on the one hand and a need to know on the other.

Mr. STAATS. We certainly have all the adequate security clearances, Mr. Chairman, to have access to this kind of information. We know of no good reason. We don't even know if the President is aware of the fact that we have been denied the information. We assume he is not, but we have written two letters, and there have been follow-ups

with oral conversations, as we have indicated. Mr. Grosshans here had an opportunity to look at some of the materials yesterday, but was not allowed to take any notes.

Senator PROXMIRE. Are you satisfied that if you could take a look at the material, that you would be in a position to give us a recommendation on whether the stockpile goals are justified or not, or would you need other criteria?

Mr. STAATS. I think we could give you a much better judgment than we can here today, Mr. Chairman, but the thing that you emphasize, and which I would emphasize even more is that any judgment is as good as the assumptions that you make with respect to the kind of war, how long the war is going to be, and a lot of things which cannot be determined, obviously, by anybody. I do not know whether the Joint Chiefs, who have this responsibility for advising the Congress and the President, made that recommendation or not. That statement has not been made.

But I don't think you can answer the question of whether the amount should be X or Y except in the context of whatever assumptions you make.

Mr. GROSSHANS. Mr. Chairman, could I follow up on a question earlier because you raised a question on the acquisition and so on. We would assume—and this is what we have been told—that priority would be given in the acquisition phase to those materials that are on the first tier, namely, the defense needs, strict defense needs. First, second, or third year, there is a shortage even in that category currently of about $900 million, so we would expect the first number of years' request in the plan that you are talking about would be in that category. So I would think the Congress would weigh that more heavily than it would materials in the second or third tier. But that is about all we know at this point.

Senator PROXMIRE. Now, some of the explanation of the Annual Materials Plan can only be obtained by the Congress in closed executive sessions. This is aside from the fact of whether you should have access to it or not on a classified basis.

That closed executive session sounds like a return to the 1950's when all the stockpile information was classified. I think there are two reasons why that seems to be an unsound policy. One, it will permit the public to think that there are shenanigans in the stockpiles again, and maybe people with inside information would have an economic value or benefit speculators.

Do you think this is likely, predictable, and pernicious, whether there is a basis for it or not, and of course, it is even more pernicious. Do you think that the need for a return to this kind of security is real and justified? Is it unavoidable, or are there ways of avoiding it?

Mr. STAATS. I frankly don't know, Mr. Chairman, to be quite honest about it. I think if we are talking about possible military actions which would deny shipping to the United States, for example, there might well be information here which very probably should be classified. We are talking about disposals from the stockpile. I have my doubts whether that needs to be classified in any shape or form.

The specific timing of the releases might be a matter that could impact on the market, but on the disposal side, it seems to me the policy would be quite different.

Senator PROXMIRE. Now, you mentioned several policy alternatives for dealing with import dependencies during the period of national emergency other than stockpiles, but you note that none of these were considered in developing the new stockpile policy.

How do you account for that failure to review all of the options? Institutional bias would you say?

Mr. CANFIELD. Well, I think you come back, and we talked about it before, to the administration's perspective on strategic stockpiles. Mr. Grosshans can fill in as to what the reasons were, and what we think of them, based upon what they told us the reasons were. Again however, you come down to the question of whether looking at the new plan, the third policy tier, is something that has to do with the national security and criticality. Now, to the extent that you argue that the only thing you are focusing on is the analysis of what is necessary in times of a war, and you have a particular definition of the kind of war and duration of war in your mind, then you could probably argue that regardless of what goes on elsewhere, under those situations of duress, you would have to have this amount of stockpile material, material by material. It is when you move over into the second and the third columns, into the question of the economic implications of the strategic stockpiles, that the issue comes up of how you fit that into an overall strategy, and I think that is the rationale for not including it.

I find that rationale holds no water because you go back to the old saw, you never can do only one thing, and in this case, when you never do only one thing, you are talking about massive economic implications. And then you can talk about trade offs between and among stockpiles; domestic, multilateral, and bilateral agreements; international stockpiles and private stockpiles by the private industry, et cetera. If those things are not considered, I don't see how you can make any rational judgments about the second and the third column, but you might make a case on a very narrow basis on the first column in terms of the definition of the war and the type of war. That is a different argument.

Mr. GROSSHANS. I think one other factor might be added to that even for the defense tier alone. The first, second, and third year, an option possibly that should be considered—since the basic scenario goes along the lines that the impact will be in Europe, and we are committed to NATO—is to what extent did we consider our allies on this; are we going to provide materials strictly for our own needs; and, are we going to go it alone, or are we going to have them as an ally in this. They should be concerned with this.

This is another option that we felt needed to be considered. We are told it was not specifically addressed. It would have a major impact on these computed goals.

Senator PROXMIRE. Mr. Staats, you have been very helpful.

Do you have anything that we haven't covered that you think we ought to be aware of?

Mr. STAATS. I don't think so, Mr. Chairman. We would hope that the question of the organization of the executive branch as it relates to this problem and the energy problem—as we see it, the two are very closely associated, and we don't think you can deal with one without having a major impact on the other—should receive very high priority attention in Congress as well as the new administration.

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I think a very serious part of our problem here is the fact that the function is so highly fragmentized in the executive branch that we do not have a clear focus as to where these kinds of trade offs that Mr. Canfield was talking about can be made.

Senator PROXMIRE. That is very helpful, and also, we want to do all we can to be sure that you have full and complete and absolute access to all of the information that is necessary, and as you indicated, we will certainly have hearings in the future on this, and in the fairly near future when such hearings are timely and appropriate.

Thank you very much.

Our final witness this morning is Mr. Simon Strauss, executive vice president of the ASARCO, Inc., on behalf of the American Mining Congress.

Mr. Strauss, we are happy to have you, sir.

Mr. STRAUSS. Thank you, Mr. Chairman.

Senator PROXMIRE. You are a very patient man, and I apologize for the lateness of the hour. If you want to summarize your statement, we will have it printed in full in the record.

Mr. STRAUSS. Thank you, Mr. Chairman. I will omit some sections of the statement, but since much of my statement deals with some of the questions that you have addressed to the previous witnesses and since I am expressing an industry point of view, I would like to read the greater part of it.

Senator PROXMIRE. Very good.

STATEMENT OF SIMON D. STRAUSS, EXECUTIVE VICE PRESIDENT, ASARCO, INC., AND CHAIRMAN, COMMITTEE ON MINERALS AVAILABILITY, AMERICAN MINING CONGRESS

Mr. STRAUSS. When World War II ended, the U.S. Administration, the Congress, and the public at large all felt that the country's security had been imperiled during the war by prospective shortages of critical and strategic materials.

Incidentally, I would like to deal with the question right at this point that you addressed to Mr. Staats as to how critical and strategic materials were defined. I worked for the Government during World War II, and I played a role in the defining of what was critical and strategic. The War Production Board was the Agency that determined what was critical and strategic. It was based on advice that they obtained from the Defense Department and their own judgments as to the industrial structure of the Nation, and to the best of my recollection, the 93 materials that are now classified as critical and strategic were all classified as critical and strategic during World War II. I don't know that there has been a reexamination of whether they remain critical and strategic, but I think that is the origin of the definition, a determination by the War Production Board.

I will go on. To avoid similar jeopardy in future military emergencies, the Stock Piling Act of 1946 was enacted without serious dissent.

This act created the ground rules for acquiring reserves of all materials deemed essential to the country's security. They were to be accumulated with public funds and to be used only to meet a serious national emergency. The executive departments of the Government

were to designate the materials and determine the quantities to be acquired. Congress appeared ready and willing to appropriate necessary funds.

Now, this is a point I would like to emphasize—the United States mining industry did not actively promote stockpiles. The records of congressional hearings and other governmental proceedings in the late 1940's and early 1950's showed no evidence of a concerted mining lobby to create strategic stockpiles. The strongest public support for the stockpile concept came from the President's Material Policy Commission headed by William S. Paley of the Columbia Broadcasting System. Of his four associates on the Commission, only one was a mining man. The Commission studied materials problems in 1950 and 1951. Its voluminous report strongly endorsed stockpiles for security purposes as being in the best interests of the Nation.

It should be emphasized that industry has never and I repeat, never been consulted in the establishment of stockpile goals for individual commodities. Until 1962 stockpile goals were treated as confidential information. Industry had no way of ascertaining either the goals or the quantities actually held by the Government. We knew only that the goals were arrived at on the basis of elaborate calculations by representatives of a number of Government departments, including Defense, Interior, State, Treasury, and Commerce. Assumptions were made as to the prospective duration of a military conflict, the degree of security of certain sources of imported supplies, the likely nature of the conflict itself, the extent of essential civilian needs as well as military needs, and similar matters.

In the early 1960's, President Kennedy concluded that the stockpile objectives had been set at too high a level. Many objectives were sharply reduced in 1963, and some were completely eliminated. Extensive hearings were held under the chairmanship of Senator Symington as to the operations by which the stockpiles had been accumulated. Legislative proposals were put forward for disposal of stockpile materials surplus to the new goals and a process of liquidating the stockpiles began.

Skipping now to page 4 (see page 64) of my statement, in early 1973 President Nixon announced another new approach to stockpile objectives.

He stated that a 1-year target would be adequate for stockpile goals because a military conflict was unlikely to last longer than 1 year. In the unlikely event of a longer interruption, he declared that the country's security could be protected adequately either by substitution of other materials or increase in production. Under these new definitions the stockpile target for many commodities was reduced to zero.

President Nixon clearly indicated that he hoped to use stockpile sales as a means of keeping prices down in a period of rampant inflation. It seemed probable then that another, although unstated, reason was the desire to raise revenue to help balance the budget.

The new Nixon policy disregarded past experience with respect to substitution of one material for another under emergency circumstances. In a complex technological society substitutions can and have occurred but long lead times are required to permit retooling by industry. As for expansion of mineral production, this can rarely be accomplished in less than 2 years and a normal project is likely to require at least 3 to 5 years for completion.

Congress apparently shared industry's misgivings with respect to the adequacy of the Nixon program and the new stockpile surpluses it created. Efforts by the administration to obtain congressional approval for disposal of materials from the stockpile were blocked on a number of occasions by requests from the legislature for additional information as to the adequacy of new stockpile goals.

The new goals on which you are holding hearings are, in effect, the outgrowth of these misgivings. The official statement made in October by the Federal Preparedness Agency declares that the materials stockpile should be capable of supporting U.S. defense requirements during a major war, over a 3-year period, assuming large-scale industry mobilization, and providing for a broad range of basic civilian economic needs.

The mining industry strongly supports the concept of a strategic stockpile. However, the constant shift in stockpile goals, which you very accurately described earlier as yo-yo, has caused the stockpile to be an extremely disruptive influence in the markets for metals and minerals, and also it has been expensive to the taxpayer.

To cite an example, during the 1950's the stockpile acquired 1,900,000 tons of aluminum. This large purchase program caused expansion in the capacity of the aluminum industry over and above what was necessary to meet normal market requirements.

In 1963 the aluminum stockpile goal was sharply reduced, and in 1972, it was completely eliminated. All the aluminum in the stockpile has been resold, principally through the companies that had originally supplied metal to the Government. This obligation to buy back metal tended to inhibit normal expansion of aluminum capacity during the sixties and early seventies just as expansion in the fifties had been overstimulated. Thus the Government's complete about-face in regard to stockpile requirements for aluminum played a significant role in the unsatisfactory price/cost relationships that have prevented the aluminum industry from earning a fair return on invested capital during much of the last 25 years.

In the light of this past experience with shifting targets, the mining industry approached the new goals therefore with considerable skepticism. When the new figures are examined, some of them seem illogical.

The mining industry does not pretend to forecast or make assumptions about duration of military conflicts. We only know that the three most recent major military operations in which this country has been involved have all been longer than 3 years: that is to say, the Second World War, the Korean war, and the Vietnam war. Various assumptions have been made as to direct military requirements, indirect military requirements, and essential civilian needs. In our judgment, these are simply assumptions. The complex interrelationships that exist in an industrialized economy such as that of the United States do not readily fall into such distinct watertight compartments. A material which is not used in munitions or armaments may, nevertheless, be absolutely essential to the prosecution of a military effort.

I have said that the new stockpile goals appear to be illogical. Let me illustrate this rather strong statement by examining the new goals for two major metals, copper and tin.

The previous stockpile goal for copper under the Nixon directive of 1973 was set at zero. The new objective is 1,299,000 tons. Maybe under the new math, zero times three equals 1,299,000.

Of all major metals, the United States is most nearly self-sufficient with respect to domestic supplies of copper. This is in contrast with the position of steel, aluminum, lead, zinc, nickel, and tin. In the 5 years, 1971 to 1975 inclusive, net imports of copper—imports, not total supply—averaged 209,000 short tons a year. This represents about 10 percent of the annual consumption of primary refined copper in this country. The new stockpile objective is, therefore, equivalent to average net imports in 1971 through 1975 of primary copper for 6½ years. It is true, there has been a sharp increase in imports in 1976, largely the result of heavy shipments from Zambia, a country that has not previously been a significant supplier to this market. The increase this year, however, should not be regarded as representing greater United States dependence on imports but rather as a consequence of Zambian desire for funds at a time when its normal European outlets are depressed.

In the case of tin, the United States has virtually no domestic sources of supply. It must import all of its needs for primary tin and these imports come largely from overseas developing nations. Under the previous 1-year program, the stockpile objective for tin had been set at 40,500 tons. Under the new program, and presumably the new math, for a 3-year period the stockpile objective is reduced to 32,499 tons. During the 5 years 1971 through 1975, net imports of primary tin averaged 46,700 tons a year. Imports would have been even greater than this had there not been heavy stockpile sales during this period. Therefore, the new objective is equivalent to about an 8-month coverage of U.S. import requirements for a metal which this country does not itself produce.

Now, it may seem strange for me to be arguing against a copper stockpile of the magnitude suggested because the copper industry is currently experiencing depressed prices. We have accumulated very large stocks of unsold copper, including that in the warehouses of the London Metal Exchange and the New York Commodity Exchange. A Government purchasing program which would absorb these stocks would be extremely helpful to the copper industry at this time.

Still, one must wonder how the national interest can be served by accumulating a reserve equivalent to 6½ years of imports of a metal in which this country is 90 percent self-sufficient while holding a reserve equivalent to only 8 months' supply of a metal for which this country is totally dependent on imports from overseas sources.

The argument might be made that tin is not an important factor in the military effort. The largest single use of tin is in the production of tinplate, and the largest use of tinplate is for the packaging of food. Substitute materials, such as aluminum, glass and plastics, can be used as food containers under certain circumstances, but neither the container nor the food processing industry could accomplish such substitution in a short period of time.

There is a serious risk that a shortage of tinplate could cause enormous dislocations in the distribution of food supplies during a military conflict. One must assume that feeding not only the military

forces but the general population is an essential part of any war effort. The new goal for tin seems clearly inadequate.

I have discussed copper and tin in some detail. One could raise similar questions with regard to the new objectives for other materials, for example, the complete elimination of a stockpile objective for silver, a metal which has high technology applications in the photographic and electrical industries and which during World War II was used in enormous quantities. Nine hundred million ounces were taken out of the U.S. Treasury in World War II. The U.S. imports well over half of its silver requirements currently. It is true that there are large stocks of silver in this country but these stocks are privately held. Under wartime conditions, unless the Government is prepared to expropriate private holdings of silver at predetermined prices, a procedure which would hardly be compatible with democratic principles, the likelihood is that prices for silver would rise very sharply.

This brings up one of the most troublesome aspects of the constant shifting in stockpile objectives, namely, that by liquidating holdings in the past at low prices, the Government is now faced under the new program with the cost of replacing metal at far higher prices.

Submitted with this statement is a tabulation of the changes made in the objectives for many of the important metals and minerals over the life of the stockpiling program. It is not complete, but it does represent the metals and minerals that are by far the greatest part of the stockpile.

I hope that this tabulation, which is attached, can be made a part of the record.

For example, in the case of copper, the original objective of 1,250,000 tons set on November 20, 1944 has been changed no less than 11 times. Now the goal is back to 1,299,000 tons. Very little net change, but in the interim, the level has been as low as zero and as high as 3½ million tons. At one time, the stockpile held something in excess of 1,100,000 tons, all of which was sold during the 1960's and early 1970's.

In the case of tin, the original objective was 210,000 tons, and it has been changed 13 times and is now 32,499 tons.

Comparable fluctuations have occurred with respect to the other major metals and minerals. In the interest of time, I will not recount them now, but I would particularly suggest that the committee direct its attention to the changes in objectives for metallurgical chrome, platinum and palladium. The major sources of these three highly important industrial materials are in Southern Africa and the Union of Soviet Socialist Republics. It seems almost redundant to point out the possibility of large-scale civil war in southern Africa which would cut off access to supplies of these three elements from that continent, leaving the United States largely dependent on the Soviet Union for its feed stocks of these essential raw materials.

The mining industry would like to submit a suggestion to the Congress for its consideration with respect to stockpile objectives. The experience of the last 30 years indicates that placing this responsibility within the executive department has resulted in frequent shifts of objectives based on considerations other than the country's security.

If the Congress believes that there is value in having a reserve of materials to insure the Nation's continued defense capability in times of emergency, perhaps it should consider a formula that would not be based on assumptions but rather on actual experience. The figures on foreign trade compiled by the Bureau of the Census clearly show the extent of U.S. dependence on imports of strategic materials. Although some parts of the public may believe that certain minerals and metals are primarily used for military purposes and others are primarily used for peacetime purposes, actual experience shows that the major materials are equally vital to the Nation whether in war or in peace.

Why not then set the targets based on the actual record of imports of these materials? If the objective is protection against a 3-year emergency, a stockpile equivalent to 3 years' imports would not be unreasonable.

As time goes on conditions do change. Domestic sources of supply may be developed in which case U.S. imports will diminish. If domestic sources become depleted or marginal, U.S. imports will expand. By a periodic review of the import record, stockpile objectives would gradually be altered but they would not change from a minimum of zero to a maximum of 3,500,000 tons as has been the case with the copper stockpile goals.

Reasonable stability in stockpile objectives will mean a lower cost to the U.S. taxpayer than has been the case with the frenetic activity in buying and selling materials which has been observed in the last 30 years. It will also mean that the stockpile will not interfere with the normal operations of the market in the unfortunate way that has been the case in recent years.

The present stockpile law instructs the administration to minimize market disruption in its programs of purchasing and selling strategic materials. The General Services Administration has certainly made every effort to minimize such disruptions. Nevertheless, the fact remains that every transaction affects the market; every purchase adds to the demand; every sale adds to the supply. Of course, there have been also cases where the stockpile has been deliberately used to affect markets, as in the cases of aluminum and copper.

When the stockpile program was initiated, the mining industry expressed concern that the stockpiles might prove to be a Sword of Damocles hanging over its head. Unfortunately, events have proved these fears were justified.

We ask you now in considering the new stockpile objectives submitted to you by the administration to give serious study to a drastic change in the method of establishing stockpile goals. We urge the Congress to give thought to enacting legislation directing the administration to a stockpile program in which the goals will be directly related to the degree of U.S. import dependence as shown by facts, not by assumptions. And perhaps if Congress itself is unwilling to assume the direct responsibility for enunciating the principles on which stockpile targets will be set, consideration should be given to a quasi-governmental agency similar to the Federal Reserve Board or COMSAT to take over the policy functions. The mining industry feels strongly that 30 years of constant shifting of stockpile goals indicates the time has come for a new approach. divorced as far as possible from short-term political or financial considerations.

Thank you.

Senator PROXMIRE. Thank you, Mr. Strauss, for your fine statement. And your suggestion that we put in the record the list that the GAO compiled of the——

Mr. STRAUSS. No, sir, that was compiled by the American Mining Congress.

Senator PROXMIRE. I was misinformed, by the American Mining Congress of the data objectives for various commodities, and the amount will be printed in the record in full. I have the table right here. Thank you.

[The information referred to and the prepared statement of Mr. Strauss follow:]

STATEMENT OF SIMON D. STRAUSS, EXECUTIVE VICE PRESIDENT, ASARCO INC., ON BEHALF OF THE AMERICAN MINING CONGRESS

Mr. Chairman and Members of the Committee: My name is Simon D. Strauss. I appear on behalf of the American Mining Congress, an organization representing the mining industry of the United States. I serve as chairman of the Committee on Minerals Availability of the American Mining Congress. In addition I am Executive Vice President of Asarco Incorporated, a large producer of metals and minerals.

I welcome the opportunity to discuss the new goals for strategic materials recently announced by the Federal Preparedness Agency. During the years 1941 through 1945 I served as an officer of the Metals Reserve Company, a subsidiary of the Reconstruction Finance Corporation, which handled procurement of metals and minerals for the U.S. government throughout those difficult years. Following the end of the Second World War substantial quantities of materials were transferred to the strategic stockpiles by the Metals Reserve Company.

Since leaving government service I have been continuously employed by Asarco. Because my responsibilities are concerned with the company's commercial activities, I have closely followed development of the stockpile program.

When World War II ended, the U.S. Administration, the Congress and the public at large all felt that the country's security had been imperiled during the war by prospective shortages of critical and strategic materials. To avoid similar jeopardy in future military emergencies, the Stockpile Act of 1946 was enacted without serious dissent.

This Act created the ground rules for acquiring reserves of all materials deemed essential to the country's security. They were to be accumulated with public funds and to be used only to meet a serious national emergency. The Executive Departments of the government were to designate the materials and determine the quantities to be acquired. Congress appeared ready and willing to appropriate necessary funds.

Four years later the Korean War broke out, just as the economies of the industrialized countries of Western Europe and Japan were being reestablished. A new materials crunch developed, further strengthening U.S. belief in the need for strategic stockpiles of critical materials.

The U.S. nonferrous mining industry did not actively promote stockpiles. The records of Congressional hearings and other governmental proceedings in the late '40s and early '50s show no evidence of a concerted mining lobby to create strategic stockpiles. The strongest public support for the stockpile concept came from the President's Material Policy Commission headed by William S. Paley of the Columbia Broadcasting System. Of his four associates on the Commission, only one was a mining man. The Commission studied materials problems in 1950 and 1951. Its voluminous report strongly endorsed stockpiles for security purposes as in the best interests of the nation.

It should be emphasized that industry has never been consulted in the establishment of stockpile goals for individual commodities. Until 1962 stockpile goals were treated as confidential information. Industry had no way of ascertaining either the goals or the quantities actually held by the government. We knew only that the goals were arrived at on the basis of elaborate calculations by representatives of a number of government departments—including Defense, Interior, State, Treasury and Commerce. Assumptions were made as to

the prospective duration of a military conflict, the degree of security of certain sources of imported supplies, the likely nature of the conflict itself, the extent of essential civilian needs as well as military needs, and similar matters.

In the early '60s, President Kennedy concluded that the stockpile objectives had been set at too high a level. Many objectives were sharply reduced in 1963 and some completely eliminated. Extensive hearings were held under the chairmanship of Senator Symington as to the operations by which the stockpiles had been accumulated. Legislative proposals were put forward for disposal of stockpile materials surplus to the new goals and a process of liquidating the stockpiles began.

During the Viet Nam War, with demand soaring, substantial amounts of metals were sold by the stockpile authorities. Arrangements were made to liquidate most of the aluminum stockpile. Sales of copper were made at the direction of President Johnson at a time when he felt the copper producers had unjustifiably increased the domestic price from 36¢ to 38¢ a pound. At that time, although the market price outside the United States was in excess of 50¢ a pound, domestic producers did roll their prices back to the 36¢ level in response to the President's action.

This particular occurrence confirmed an impression held in the mining industry that stockpiles might be used for purposes other than strictly military reasons—i.e. to influence prices.

Ironically, some years later a government investigation of the copper industry's pricing practices castigated the copper producers for selling at alleged administered prices and suggested instead that copper should be sold on the basis of prices prevailing on commodity exchanges.

Had this practice been in effect in 1965, when President Johnson was exercised about the two-cent increase in the domestic price, consumers would have in fact paid much higher prices.

In early 1973 President Nixon announced another new approach to stockpile objectives.

He stated that a one-year target would be adequate for stockpile goals because a military conflict was unlikely to last longer than one year. In the unlikely event of a longer interruption, he declared that the country's security could be protected adequately either by substitution of other materials or increases in production. Under these new definitions the stockpile target for many commodities was reduced to zero.

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Congress apparently shared industry's misgivings with respect to the adequacy of the Nixon program and the new stockpile surpluses it created. Efforts by the Administration to obtain Congressional approval for disposal of materials from the stockpile were blocked on a number of occasions by requests from the legislature for additional information as to the adequacy of the new stockpile goals.

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The mining industry strongly supports the concept of a strategic stockpile. However, the constant shift in stockpile goals has caused the stockpile to be an extremely disruptive influence in the markets for metals and minerals. To cite an example, during the 1950's the stockpile acquired 1,900,000 tons of aluminum. This large purchase program caused expansion in the capacity of the aluminum industry over and above what was necessary to meet normal market requirements.

In 1963 the aluminum stockpile goal was sharply reduced and in 1972 it was completely eliminated. All the aluminum in the stockpile has been resold—prin-

cipally through the companies that had originally supplied metal to the government. This obligation to buy back metal tended to inhibit normal expansion of aluminum capacity during the '60s and early '70s just as expansion in the '50s had been overstimulating. Thus the government's complete about-face in regard to stockpile requirements for aluminum played a significant role in the unsatisfactory price/cost relationships that have prevented the aluminum industry from earning a fair return on invested capital during much of the last 25 years.

In the light of this past experience with shifting targets, the mining industry approached the new goals therefore with considerable skepticism. When the new figures are examined, some of them seem illogical.

The mining industry does not pretend to forecast or make assumptions about duration of military conflicts. We only know that the three most recent major military operations in which this country has been involved have all been longer than three years—that is to say, the Second World War, the Korean War and the Viet Nam War. Various assumptions have been made as to direct military requirements, indirect military requirements and essential civilian needs. In our judgment, these are simply assumptions. The complex interrelationships that exist in an industrialized economy such as that of the United States do not readily fall into such distinct watertight compartments. A material which is not used in munitions or armaments may, nevertheless, be absolutely essential to the prosecution of a military effort.

I have said that the new stockpile goals appear to be illogical. Let me illustrate this rather strong statement by examining the new goals for two major metals—copper and tin.

The previous stockpile goal for copper under the Nixon directive of 1973 was set at zero. The new objective is 1,299,000 tons.

Of all major metals, the United States is most nearly self-sufficient with respect to domestic supplies of copper. This is in contrast with the position in steel, aluminum, lead, zinc, nickel and tin. In the five years, 1971 to 1975 inclusive, net imports of copper averaged 209,000 short tons a year—this represents about 10% of the annual consumption of primary refined copper in this country. The new stockpile objective is, therefore, equivalent to average net imports in 1971–1975 of primary copper for 6½ years. There has been a sharp increase in imports in 1976, largely the result of heavy shipments from Zambia—a country that has not previously been a significant supplier to this market. The increase this year, however, should not be regarded as representing greater U.S. dependence on imports but rather as a consequence of Zambian desire for funds at a time when its normal European outlets are depressed.

In the case of tin, the United States has virtually no domestic sources of supply. It must import all of its needs for primary tin and these imports come largely from overseas developing nations. Under the previous one-year program, the stockpile objective for tin had been set at 40,500 long tons. Under the new program for a three-year period the stockpile objective is reduced to 32,499 tons. During the five years 1971–75, net imports of primary tin averaged 46,700 tons per year. Imports would have been even greater had not there been heavy stockpile sales during this period. Therefore the new objective is equivalent to about an eight-month coverage of U.S. import requirements for a metal which this country does not itself produce.

The copper industry is currently experiencing depressed prices. Large stocks of copper have been accumulated in the warehouses of the London Metal Exchange and the New York Commodity Exchange. A government purchasing program which would absorb these stocks would be extremely helpful to copper producers at this time.

Still, one must wonder how the national interest can be served by accumulating a reserve equivalent to 6½ years of imports of a metal in which this country is 90% self-sufficient while holding a reserve equivalent to only eight month's supply of a metal for which this country is totally dependent on imports from overseas sources.

The argument might be made that tin is not an important factor in the military effort. The largest single use of tin is in the production of tinplate and the largest use of tinplate is for the packaging of food. Substitute materials, such as aluminum, glass and plastics, can be used as food containers under certain circumstances but neither the container nor the food processing industry could accomplish such substitution in a short period of time.

There is a serious risk that a shortage of tinplate could cause enormous dislocations in the distribution of food supplies during a military conflict. One must assume that feeding not only the military forces but the general population is an essential part of any war effort. The new goal for tin seems clearly inadequate.

I have discussed copper and tin in some detail. One could raise similar questions with regard to the new objectives for other materials—for example, the complete elimination of a stockpile objective for silver, a metal which has high technology applications in the photographic and electrical industries and which during World War II was used in enormous quantities. The U.S. imports well over half of its silver requirements currently. It is true that there are large stocks of silver in this country but these stocks are privately held. Under wartime conditions, if the government is prepared to expropriate private holdings of silver at predetermined prices, a procedure which would hardly be compatible with democratic principles, the likelihood is that prices for silver would rise very sharply.

This brings up one of the most troublesome aspects of the constant shifting in stockpile objectives—namely, that by liquidating holdings in the past at low prices, the government is now faced under the new program with the cost of replacing metal at far higher prices.

Submitted with this statement is a tabulation of changes in the objectives for many of the important metals and minerals over the life of the stockpiling program. I hope that this tabulation can be made part of the record.

For example, in the case of copper, the original objective of 1,250,000 tons set on November 20, 1944 has been changed no less than 11 times. Now the goal is back to 1,299,000 tons. At one time the stockpile held something in excess of 1,100,000 tons—all of which has been sold during the '60's and early '70's.

In the case of tin, the original objective was 210,000 tons and it has been changed 13 times and is now 32,499 tons.

Comparable fluctuations have occurred with respect to the other major metals and minerals. In the interest of time I will not recount them now but I would particularly suggest that the Committee direct its attention to the changes in objectives for metallurgical chrome, platinum and palladium. The major sources of these three highly important industrial materials are in Southern Africa and the Union of Soviet Socialist Republics. It seems almost redundant to point out the possibility of large-scale civil war in Southern Africa which would cut off access to supplies of these three elements from that continent, leaving the United States largely dependent on the Soviet Union for its feed stocks of these essential raw materials.

The mining industry would like to submit a suggestion to the Congress for its consideration with respect to stockpile objectives. The experience of the last 30 years indicates that placing this responsibility within the Executive Department has resulted in frequent shifts of objectives based on considerations other than the country's security. If the Congress believes that there is value in having a reserve of materials to insure the nation's continued defense capability in times of emergency, perhaps it should consider a formula that would not be based on assumptions but rather on actual experience. The figures on foreign trade compiled by the Bureau of the Census clearly show the extent of U.S. dependence on imports of strategic materials. Although some parts of the public may believe that certain minerals and metals are primarily used for military purposes and others are primarily used for peacetime purposes, actual experience shows that the major materials are equally vital to the nation whether in war or in peace.

Why not then set the targets based on the actual record of imports of these materials? If the objective is protection against a three-year emergency, a stockpile objective equivalent to three years' imports would not be unreasonable.

As time goes on conditions do change. Domestic sources of supply may be developed in which case U.S. imports will diminish. If domestic sources become depleted or marginal, U.S. imports will expand. By a periodic review of the import record, stockpile objectives would gradually be altered but they would not change from a minimum of zero to a maximum of 3,500,000 tons as has been the case with the copper stockpile goals.

Reasonable stability in stockpile objectives will mean a lower cost to the U.S. taxpayer than has been the case with the frenetic activity in buying and selling materials which has been observed in the last 30 years. It will also mean that the stockpile will not interfere with the normal operations of the market in the unfortunate way that has been the case in recent years.

The present stockpile law instructs the Administration to minimize market disruption in its programs of purchasing and selling strategic materials. The General Services Administration has certainly made every effort to minimize such disruptions. Nevertheless, the fact remains that every transaction affects the market—every purchase adds to the demand; every sale adds to the supply. Of course, there have been some cases where the stockpile has been deliberately used to affect markets—as in the cases of aluminum and copper already cited.

When the stockpile program was initiated, the mining industry expressed concern that the stockpiles might prove to be a "Sword of Damocles" hanging over its head. Unfortunately events have proved these fears were justified.

We ask you now in considering the new stockpile objectives submitted to you by the Administration to give serious study to a drastic change in the method of establishing stockpile goals. We urge the Congress to give thought to enacting legislation directing the Administration to a stockpile program in which the goals will be directly related to the degree of U.S. import dependence as shown by facts—not assumptions. And perhaps if Congress itself is unwilling to assume the direct responsibility for enunciating the principles on which stockpile targets will be set, consideration should be given to a quasi-governmental agency similar to the Federal Reserve Board or Comsat to take over the policy functions. The mining industry feels strongly that 30 years of constant shifting of stockpile goals indicates the need for a new approach, divorced as far as possible from short-term political or financial considerations.

Thank you for your consideration.

Stockpile objectives for selected minerals over the entire life of the national and supplemental strategic stockpiles

Commodity and date of objective	*Amount*
Alumina (short tons): Oct. 1, 1976	$11, 532, 000
Aluminum (short tons):	
Nov. 17, 1949	250, 000
Nov. 2, 1950	700, 000
July 17, 1952	2, 000, 000
Aug. 3, 1954	2, 500, 000
Nov. 1, 1955	2, 000, 000
Nov. 8, 1956	2, 000, 000
June 30, 1958	290, 000
Nov. 4, 1959	1, 200, 000
June 17, 1963	450, 000
Dec. 20, 1972	0
Apr. 12, 1973	0
Oct. 1, 1976	0
Buaxite:	
Metal Grade, Jamaica type (long dry tons):	
Aug. 3, 1954	2, 800, 000
Sept. 29, 1954	2, 900, 000
June 30, 1958	2, 300, 000
Nov. 4, 1959	2, 600, 000
Apr. 10, 1964	5, 000, 000
Apr. 12, 1973	4, 638, 000
Oct. 1, 1976	523, 000
Metal grade, Surinam type (long dry tons):	
Nov. 20, 1944	4, 400, 000
Apr. 6, 1950	3, 250, 000
Oct. 2¢, 1950	3, 900, 000
July 26, 1951	5, 000, 000
Aug. 3, 1954	5, 000, 000
Sept. 29, 1954	12, 500, 000
June 30, 1958	7, 300, 000
Nov. 4, 1959	6, 400, 000
Apr. 10, 1964	5, 300, 000
Apr. 12, 1973	0
Oct. 1, 1976	0

Stockpile objectives for selected minerals over the entire life of the national and supplemental strategic stockpiles

Bauxite—Continued	
Refractory grade (long dry tons):	
Oct. 26, 1950	$378, 000
Dec. 28, 1950	306, 000
July 26, 1951	300, 000
Sept. 28, 1954	300, 000
June 30, 1958	85, 000
Nov. 4, 1959	137, 000
Apr. 10, 1964	173, 000
Apr. 12, 1973	0
Oct. 1, 1976	2, 083, 000
Chromite:	
Chemical (short tons): Oct. 1, 1976	734, 000
Metallurgical, ore (short dry tons):	
Nov. 20, 1944	2, 352, 000
Dec. 2, 1949	3, 584, 000
Dec. 18, 1952	3, 360, 000
Sept. 29, 1954	6, 160, 000
June 30, 1958	3, 416, 000
Dec. 11, 1959	2, 700, 000
July 18, 1963	2, 970, 000
Mar. 27, 1964	[1] 2, 970, 000
May 13, 1969	3, 650, 000
Mar. 4, 1970	3, 100, 000
June 9, 1971	3, 086, 800
Jan. 16, 1973	2, 910, 550
Apr. 12, 1973	444, 710
Oct. 1, 1976	2, 550, 000
Refractory (short tons gross weight): Oct. 1, 1976	642, 000
Chromium:	
Ferro high carbon [2] (short tons):	
Jan. 16, 1973	70, 506
Apr. 12, 1973	11, 400
Oct. 1, 1976	236, 070
Ferro low carbon [2] (short tons):	
Jan. 16, 1973	70, 500
Apr. 12, 1973	11, 476
Oct. 1, 1976	124, 000
Ferro, silicon (short tons): Oct. 1, 1976	69, 000
Metal (short tons): Oct. 1, 1976	10, 000
Copper (short tons):	
Nov. 20, 1944	1, 250, 000
June 22, 1950	1, 250, 000
Oct. 26, 1950	2, 100, 000
Sept. 5, 1952	1, 100, 000
Aug. 31, 1954	1, 600, 000
Sept. 28, 1954	3, 500, 000
June 30, 1958	1, 900, 000
Mar. 18, 1959	1, 000, 000
June 17, 1963	775, 000
Mar. 13, 1964	775, 000
Apr. 12, 1973	0
Oct. 1, 1976	1, 299, 000
Lead (short tons):	
Nov. 20, 1944	1, 100, 000
June 1, 1950	515, 000
Nov. 9, 1950	700, 000
Feb. 24, 1953	700, 000
Sept. 28, 1954	1, 130, 000
Oct. 26, 1954	1, 130, 000
Nov. 8, 1956	1, 154, 000
May 3, 1957	1, 154, 000
June 30, 1958	286, 000
June 17, 1963	0
Dec. 3, 1969	530, 000
Apr. 12, 1973	65, 100
Oct. 1, 1976	865, 000

See footnotes at end of table.

Stockpile objectives for selected minerals over the entire life of the national and supplemental strategic stockpiles

Manganese:	
Battery grade, natural ore (short dry tons):	
Nov. 20, 1944	$168, 000
Feb. 1, 1951	257, 600
July 12, 1951	203, 840
Nov. 8, 1951	190, 400
Sept. 28, 1954	375, 917
Oct. 26, 1954	144, 480
June 30, 1958	82, 320
July 1, 1959	50, 000
Feb. 3, 1964	60, 000
Mar. 13, 1964	80, 000
May 13, 1969	135, 000
Apr. 12, 1973	10, 700
Oct. 1, 1976	12, 736
Battery grade, synthetic dioxide (short dry tons):	
Oct. 26, 1954	29, 120
June 30, 1958	12, 768
July 1, 1959	20, 000
Mar. 13, 1964	6, 700
Mar. 27, 1969	1, 900
Apr. 12, 1973	0
Oct. 1, 1976	19, 105
Chemical grade, type A (short dry tons):	
Jan. 26, 1950	17, 248
Oct. 26, 1950	57, 120
July 12, 1951	30, 240
June 19, 1952	25, 760
Sept. 28, 1954	63, 314
Jan. 18, 1955	47, 040
June 30, 1958	28, 000
July 1, 1959	30, 000
Apr. 2, 1964	68, 500
May 13, 1969	35, 000
Apr. 12, 1976	12, 800
Oct. 1, 1976 (combined total, type A and B)	247, 136
Chemical grade, type B (short dry tons):	
June 19, 1952	15, 680
Jan. 18, 1955	40, 320
June 30, 1958	24, 640
July 1, 1959	53, 000
Apr. 2, 1964	64, 000
May 13, 1969	35, 000
Apr. 12, 1973	12, 800
Oct. 1, 1976 (combined total, type A and B)	247, 136
Electrolytic metal (short tons):	
Jan. 16, 1973	9, 000
Apr. 12, 1973	4, 750
Oct. 1, 1976	15, 000
Ferro high carbon (short tons):	
Jan. 16, 1973	600, 000
Apr. 12, 1973	200, 000
Oct. 1, 1976	439, 000
Ferro low carbon: Oct. 1, 1976	0
Ferro medium carbon (short tons):	
Jan. 16, 1973	36, 000
Apr. 12, 1973	10, 500
Oct. 1, 1976	99, 000
Metallurgical (short dry tons):	
Nov. 20, 1944	5, 264, 000
Dec. 2, 1949	5, 600, 000
July 12, 1951	5, 600, 000
Oct. 11, 1951	5, 600, 000
July 17, 1952	5, 600, 000
Aug. 31, 1954	8, 848, 000

Stockpile objectives for selected minerals over the entire life of the national and supplemental strategic stockpiles

Manganese—Continued	
Metallurgical (short dry tons)—Continued	
June 30, 1958	$5, 376, 000
Oct. 16, 1959	6, 800, 000
Feb. 13, 1964	7, 900, 000
Mar. 13, 1964	7, 900, 000
May 1, 1964	[1] 7, 900, 000
May 13, 1969	4, 000, 000
Apr. 12, 1973	750, 500
Oct. 1, 1976	[3] 2, 052, 000
Ferro silicon (short tons):	
Jan. 16, 1973	45, 500
Apr. 12, 1973	15, 900
Oct. 1, 1976	81, 000
Nickel (short tons):	
Nov. 20, 1944	118, 000
July 27, 1950	274, 000
Nov. 9, 1950	290, 000
Oct. 9, 1952	450, 000
Sept. 28, 1954	450, 000
Feb. 8, 1955	337, 500
June 30, 1958	161, 500
July 18, 1963	50, 000
Jan. 13, 1967	20, 000
Mar. 13, 1969	55, 000
Feb. 9, 1971	0
Apr. 12, 1973	0
Oct. 1, 1976	204, 335
Platinum group:	
Iridium (troy ounces):	
Nov. 20, 1944	5, 000
July 20, 1951	13, 000
Sept. 28, 1954	13, 000
May 16, 1956	4, 500
Nov. 8, 1956	4, 500
June 30, 1958	1, 500
Feb. 16, 1960	4, 000
Apr. 2, 1964	17, 000
Apr. 12, 1973	1, 800
Oct. 1, 1976	97, 761
Palladium (troy ounces):	
May 16, 1956	475, 000
June 30, 1958	330, 000
Feb. 16, 1960	340, 000
Apr. 2, 1964	1, 300, 000
Jan. 9, 1973	510, 000
Apr. 12, 1973	328, 500
Oct. 1, 1976	2, 450, 000
Platinum (troy ounces):	
Nov. 20, 1944	275, 000
Nov. 2, 1950	590, 000
Aug. 2, 1951	790, 000
Sept. 28, 1954	879, 750
May 16, 1956	235, 000
Nov. 8, 1956	235, 000
June 30, 1958	154, 000
Feb. 16, 1960	165, 000
Apr. 2, 1964	450, 000
Jan. 5, 1967	335, 000
May 13, 1969	555, 000
Apr. 12, 1973	187, 500
Oct. 1, 1976	1, 314, 000

See footnotes at end of table.

Stockpile objectives for selected minerals over the entire life of the national and supplemental strategic stockpiles

Silver (troy ounces):	
June 3, 1965	$165, 000, 000
Mar. 4, 1970	139, 500, 000
Apr. 12, 1973	21, 663, 000
Oct. 1, 1976	0
Tin (long tons):	
Nov. 20, 1944	210, 000
Dec. 2, 1949	260, 000
Jan. 26, 1950	285, 000
Nov. 30, 1950	350, 000
June 28, 1951	245, 000
Sept. 28, 1954	308, 000
Mar. 22, 1955	341, 000
June 30, 1958	198, 000
July 7, 1960	185, 000
May 20, 1963	200, 000
July 26, 1963	200, 000
Mar. 27, 1969	232, 000
Apr. 12, 1973	40, 500
Oct. 1, 1976	32, 499
Tungsten:	
Ores and concentrates (pounds):	
Nov. 20, 1944	36, 000, 000
Feb. 18, 1949	85, 000, 000
July 20, 1950	114, 000, 000
Nov. 30, 1950	146, 000, 000
Jan. 7, 1953	140, 000, 000
Sept. 29, 1954	94, 000, 000
June 30, 1958	49, 200, 000
Nov. 4, 1959	50, 000, 000
Apr. 2, 1964	44, 000, 000
Mar. 4, 1970	60, 000, 000
Apr. 12, 1973	4, 234, 000
Oct. 1, 1976	8, 823, 000
Carbide powder (pounds): Oct. 1, 1976	12, 845, 000
Ferro (pounds): Oct. 1, 1976	17, 769, 900
Metal powder (pounds): Oct. 1, 1976	3, 290, 000
Zinc (short tons):	
Nov. 20, 1944	1, 500, 000
July 6, 1950	1, 500, 000
Dec. 7, 1950	1, 500, 000
Jan. 4, 1951	780, 000
July 12, 1951	740, 000
Oct. 16, 1952	740, 000
Apr. 30, 1953	740, 000
Aug. 3, 1954	1, 100, 000
Nov. 8, 1956	1, 250, 000
May 3, 1957	1, 250, 000
Mar. 20, 1958	1, 256, 000
June 30, 1958	178, 000
June 17, 1963	0
Dec. 3, 1969	560, 000
Apr. 12, 1973	202, 700
June 15, 1976	374, 830
Oct. 1, 1976	1, 313, 000

[1] Amended.
[2] Prior to 1973, the objective was part of the objective for metallurgical chromite.
[3] Short tons.

Senator PROXMIRE. Now, one of your complaints is the industry has never been consulted in the establishment of stockpile goals.

Mr. STRAUSS. I am not sure it was a complaint. It was a statement of fact.

Senator PROXMIRE. Well, maybe it is a little bit of both. It is certainly a statement of fact, at least. And yet I am concerned, and I am sure you recognize the problems involved here. You want a way to do it that would prevent either the appearance or the reality of industry manipulation of stockpile policy.

Would you agree to similar representation from other groups such as consumers and labor and so forth?

Mr. STRAUSS. Certainly, and in fact, if this semipublic or quasipublic organization that I referred to at the end were to be established, I think you will find on the record that the American Mining Congress has said specifically that it should have representatives of consumers, labor, industry and the general public if there is something that falls in that——

Senator PROXMIRE. Well, I am very much concerned about that. I think there is some merit to it, but at the same time, there are also really serious problems. As I said, it seems to me this shouldn't be a matter of managing the economy in any way, managing prices in any way, shape or form. I think you are getting into that if you ask industry to give their opinion, you ask labor to give their opinion, they are good people. They will tell you what their own interests are. And I think the agency listens to that; they listen to consumer interests. This ought to be strictly a policy providing what is necessary to defend this country in emergency.

Mr. STRAUSS. But don't you think, sir, the industry point of view should at least be heard? You see, what I am trying to say is that in establishing the stockpile goals, we were never heard. I will give you a simple illustration, if I may. Item 1——

Senator PROXMIRE. I don't think you should be heard in making recommendations as to what the goal ought to be. I think you ought to be consulted as experts as to what is wrong with the techniques they use, that kind of thing.

Mr. STRAUSS. All right, sir.

May I give you a specific example? The very first item in our tabulation is the proposed new alumina stockpile of 11½ million tons.

Now, alumina is the intermediate step between bauxite and aluminum. This is equivalent to roughly 6 million tons of aluminum. The maximum goal for aluminum was 2½ million tons, so the new alumina stockpile is more than twice the previous aluminum peak.

Alumina is a commodity that cannot be stored outdoors. It is hydroscopic. It absorbs the moisture. The 11½ million tons of alumina would have to be stored, at enormous expense, in concrete silos which would have to be built; the capacity does not exist. Whether this point was ever considered in arriving at this goal I have no way of knowing.

Senator PROXMIRE. I think that is an excellent distinction. There is no objection at all. That is sensible and reasonable to get that kind of expert opinion. We find here in the Banking Committee that we cannot pass legislation that makes any sense unless we consult with the bankers, unless they testify, unless they tell us what their view is. They have a vested interest, they have a special interest that we should be aware of, but I think it is desirable to consult with you in that sense.

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At the same time, I would hope that we can devise a system of consultation that won't result in any greater influence or any determination of any kind by the industry.

What about the substance of the new policy? How are the new amounts of materials proposed for stockpiling likely to affect the mining industry?

Mr. STRAUSS. Well, I would comment in general that I associated myself with Mr. Staats' comment to the effect that since you are buying 76 materials and disposing of only 17, the acquisition of this additional stockpile is going to be costly. It will put pressure on price. If I may refer again to the alumina stockpile, the present value of alumina is roughly $150 a ton, so we are talking about $1.7 billion for that one stockpile alone. There is no excess alumina capacity in the world today to amount to anything. New plants would have to be built to enable you to create this stockpile, and it would take many years to build it up.

Senator PROXMIRE. And even if you do it over a period of time the effect is bound to be one of increasing the price.

Mr. STRAUSS. It will increase the price because you will need new facilities which cost money at the present time. In my judgment, we do need protection for our aluminum requirements, and the simplest protection would be to have bauxite. We have alumina capacity in this war. If we are in a war and we are cut off from overseas sources——

Senator PROXMIRE. Well, without getting into that technical problem, your conclusion is, on the basis of your experience, that if you are going to buy additional materials to the extent indicated, that you are going to have an increase in price, and the cost is going to be something to the taxpayer that we have to face and recognize. It may not be justified, but it is going to be a cost, an additional cost.

Mr. STRAUSS. I would agree with that, sir.

Senator PROXMIRE. Now, what do you feel about the notion that this can be put off, that it won't have an effect in the next 3 or 5 years?

Mr. STRAUSS. I have worked for more than 40 years in an industry which is highly speculative to begin with because we don't know where the ore resources are until we put drills into the ground. Our entire structure is based on uncertainty. Whenever there is a certainty, such as the announcement of the new stockpile goal, it is going to affect the market.

I don't believe that if the administration says these are our new goals, sure we are going to take our time about getting it, that it will not have some influence on the markets. It is bound to affect them right from the word go, and as a matter of fact, when the word first leaked out that there was going to be a copper stockpile objective, the price on the London Metal Exchange rose rather sharply for 2 or 3 days until somebody pointed out that Congress had to vote the money, and whether that would be available was uncertain, and the price came down again.

Senator PROXMIRE. Now, you argue that stockpile goals should be based on simple, straightforward data, primarily U.S. import dependencies.

Mr. STRAUSS. Yes, sir.

Senator PROXMIRE. But you also argue that the U.S. economy is too complicated to be dealt with in easy terms. It seems to me that there is a contradiction in your position here; even if somewhat inadequate, isn't the methodology of the Federal Preparedness Agency more suited to analysis of a complex economy than your proposal based just on one factor?

Mr. STRAUSS. No, sir, I must respectfully disagree with that. I think, you see, that the import figure is really the sum total of all elements that go into this methodology except that it has been distorted by such questions as, you know, how reliable one source is or——

Senator PROXMIRE. Well, that is only one part of it. It is also distorted by the fact that some materials, coffee, tea, cocoa—we import practically all of them. They are desirable but hardly critical for national security. We might even have a healthier country if we didn't consume coffee or tea.

Mr. STRAUSS. Right.

Senator PROXMIRE. Especially since we produce milk in Wisconsin.

[General laughter.]

Mr. STRAUSS. I would limit it to the materials that have been defined as strategic and critical. Coffee, tea, and sugar are not.

Senator PROXMIRE. But how is your proposal to base stockpile goals on import indices to define critical materials? It is a matter of more or less. It is true that this is a simple question. You could rule out those commodities that obviously don't have anything to do with national security, but most of these have some relationship and are necessary or at least desirable in the nonmilitary sector.

Mr. STRAUSS. Well, you pointed out quite properly that during World War II, automobile production ceased, and I would assume that in a future emergency that would happen. Copper requirements for the automobile industry would therefore be cut back very sharply. However, in a war period the production of trucks is increased, and we would use more copper in trucks. More directly, we would use copper in ammunition.

My experience during World War II was that while the uses to which these materials were being put by and large changed, the volume of the use did not increase or change perceptibly, sir, and I spent 4½ years here in Washington dealing with these problems. As a matter of fact, where there was a change; it was an increase.

President Roosevelt decided we should build 25,000 airplanes a year, which was a wise decision, and that required a very big increase in our requirements for aluminum.

Senator PROXMIRE. Now, you talked about the yo-yo effect, which I referred to also, and you said that the mining industry suffered because of frequent shifts in stockpile objectives, and you did a fine job of documenting that in the material that you have available here. It has been shifted highly.

But isn't it true that the mining industry has also received many benefits from the stockpile program? Haven't the objectives been helpful sometimes in holding up the market price of metal and other materials?

Mr. STRAUSS. The only time in which I could say that was definitely the case was during the middle 1950's when there was a program for purchase of lead and zinc for the stockpile which helped the domestic mining industry. With that one exception, I would say no, sir, that has not been the case. The Korean War was a period in which there was a big increase in the demand for copper, stimulated by the Government because of military requirements, but we were under price controls.

The biggest effect on the mining industry was not on the acquisition of the materials but in their disposal during the 1960's and 1970's, when there was an adverse effect. Of course, consumers will tell you that there was a beneficial effect because they got materials at lower prices, and I think that is just the way the ball bounces, as between two segments of industry.

What I am trying to say, sir, is we don't want the "benefits" of stockpile buying if those stockpiles are later, as a result of a new set of definitions, going to be again declared surplus and put on the market at times when it may be difficult for the market to absorb them. The lead and zinc industry which did benefit in the 1950's from the stockpile purchases, had its arm twisted very sharply by the Johnson and Nixon administrations to agree to long-term contracts to buy that lead and zinc back from the stockpile.

So on balance, if looked at from a strictly selfish point of view, I think if you would ask the chief executive officer of almost every major domestic mining company, he would say that from the standpoint of the industry, they would just as soon have no stockpiles at all.

Senator PROXMIRE. Now, you talk about the arm twisting that forced buy-back arrangements.

Why are buy-back arrangements for industry so disruptive or so difficult?

Mr. STRAUSS. Well, they are difficult because at the same time you are required to buy a certain percentage of material from the stockpile, you have got people working for you producing the stuff, and to the extent that you are buying it back from the stockpile and taking care of your customers with the material out of the stockpile, you are going to have to produce less from your mines, mills and smelters.

Senator PROXMIRE. Well, that wouldn't necessarily be bad for the stockholders of your company. It might be, I can see why your unions wouldn't like it and why the employees might not like it.

Mr. STRAUSS. It is not good for the stockholders, because we make no money out of the buy-back. In fact, the definite understanding with GSA—a proper one, and I am not objecting to it—was we should pay the GSA exactly what we received. We really acted as sort of a distributing arm for the GSA in order to make sure that the material reached the customer, but there was no money made out of that.

If we had not been buying that material back from the stockpile, we would have been producing the lead and zinc from our mines, and we would have been earning profits, hopefully.

Senator PROXMIRE. Well, I want to thank you very, very much, Mr. Strauss. Your testimony has been most useful. It is good to have a man who is so well informed testify before us.

Let me just conclude by saying that I think there is a lot of reason for concern over this new policy. I have faith in General Bray. He is a fine man and very intelligent and able man, but I think that, no matter how able the person administering that program is, we have reason for concern.

The stockpiling programs in the past—I know General Bray hasn't been responsible for this—but the programs in the past have certainly had their horror stories. Take the helium stockpile. We have, as I understand it, 42 billion cubic feet of helium stored in Texas gas wells. That is seven times the amount needed to cover U.S. consumption for 25 years, and yet the Government is still buying it and reselling it to Federal agencies at twice the commercial price, and paying $21 million a year on interest on debts for loans from the Treasury. So that is a double whammy for the taxpayer. Or the three Naval Coal Reserves. That is something completely aside from General Bray's responsibility. They are in Wyoming and Montana. Those coalfields were withdrawn for Navy use in 1927, but now the Navy has forgotten them. They have never requested the necessary legislation to use these reserve resources.

I am concerned also about the proposed massive increases in materials stockpiles. I agree with you and I agree with what I understood the GAO to indicate, that this would probably result in increased expenditures for the Federal Government. I am concerned with the flexibility of the new objectives, because that raises the possibility of budgetary manipulation. We have had it in the past with less flexible stockpile goals. We can expect it in the future with these more flexible goals or objectives or whatever you want to call them. And there is the possibility of corruption, because of the benefits that might result in manipulating prices.

I am concerned with the lack of access to information on stockpiles for the GAO. I think that is something that has to be corrected, and promptly. I am concerned about the lack of challenge that we have had on the expertise of those who determine the criticality of the commodities, whether or not they are critical and what amount we need for how long. We need to know much more than we do know about how expert these people are who make that determination. I think altogether we have a lot of work to do before we decide this policy is clearly in the national interest.

But I want to thank you very much. We have had very helpful hearings this morning. The committee will stand in recess.

[Whereupon, at 12:51 p.m., the committee recessed subject to the call of the Chair.]

APPENDIX I

ADDITIONAL QUESTIONS AND RESPONSES FOR THE RECORD

UNITED STATES OF AMERICA
GENERAL SERVICES ADMINISTRATION

Federal Preparedness Agency
Washington, D C 20405

DEC 14 1976

Honorable William Proxmire
Vice Chairman
Joint Committee on Defense Production
Washington, D. C. 20510

Dear Senator Proxmire:

Enclosed are answers to two sets of questions posed to us by you in your letter of November 30, 1976.

The first set of answers responds to the list entitled "Items for the Record." Since these questions were raised in open hearings, we have responded to them in a manner that does not require national security classification. More detailed supportive data can be found in the classified data tables supplied recently by us to Mr. William Kincade. A deviation from the usual format was used to respond to Items 2 and 3 to cover the materials requested in the testimony and in your letter. We have established groupings of similar items that correspond mainly to the questions raised in the testimony.

The second set of answers are in response to the seven additional questions enclosed in your letter. In addition to the material provided in response to Question 1 regarding GNP assumptions, we are prepared to supply you with the detailed projections, should you desire them.

We wish to thank you for the opportunity to provide further clarification of the new stockpiling policy and methodologies currently being used to safeguard the Nation's defense.

Please let us know if we can be of further assistance.

Sincerely,

LESLIE W. BRAY, JR.
Director

Enclosures

1. QUESTION: Do you think the proceeds from stockpile disposals should go into a fund for financing new acquisitions?

ANSWER: As you know a bill (H.R. 10526) to establish a special stockpile fund was introduced in the last session of Congress by Representative Charles E. Bennett, Chairman of the Subcommittee on Seapower and Strategic and Critical Materials of the House Armed Services Committee. The bill provided that monies realized from the disposal of excess stockpile materials would be placed in a special fund to finance acquisitions, instead of flowing to the Treasury's miscellaneous receipts account. The bill also contained provisions requiring that monies in the fund would still have to be appropriated by Congress before acquisitions could be made.

That bill was opposed by the Administration because, through its potential for tying up funds, it would reduce the budgetary flexibility of the President and thereby hinder his ability to develop sound budget and fiscal policies.

Although the Administration has opposed such a fund based on its broader perspective, my views are presented relative to my responsibility as manager of the stockpile. These views are not consistent with the Administration's position. The following paragraphs summarize my views on a special stockpile fund:

There do appear to be some realizable benefits from the establishment of such a fund, provided that Congressional concerns about back-door financing and Executive Branch concerns about tying up funds for long periods could be accommodated. For example, both disposal legislation and appropriation legislation for acquisitions would be facilitated by some explicit linkage between acquisitions and disposals. In addition, a fund could provide the stockpile manager with useful flexibility by providing opportunities to adjust the purchase and sales mix to better accommodate unanticipated developments in the commodities markets.

It is possible that legislation could be drafted in a way that could take care of both Congressional and Executive Branch concerns and still retain the advantages of such a fund. It would be necessary, however, to avoid encumbering the budgetary flexibility of the Administration in the course of the fund's establishment. A workable solution might include specific provisions for a return of funds to the miscellaneous receipts account of the Treasury if monies realized from disposals were not applied to the acquisition of stockpile materials within a specific period of time; for example, one year.

2. QUESTION: It appears to us that this new formula, although very elaborate, is very vulnerable to manipulation--manipulation that would be hard to detect. For example, at the end of the calculation process you apply some "special materials planning factors." Wouldn't different judgments on these special factors produce very different goals?

ANSWER: Special materials planning factors are not arbitrary adjustments to stockpile goals. Six specific criteria were identified, before any goals were calculated, which would qualify a material as a "special material." In each case a pre-specified adjustment would be made if a material qualified under the established criteria. The criteria are:

1. Intensive use by the military. If sixty percent of wartime consumption of a material occurred in the Defense tier, the material consumption ratios used to calculate wartime material requirement of the Defense tier were adjusted upwards by one standard error of the forecast. The standard error of the forecast is a statistical measure of the reliability of a given projection. Two materials, titanium and beryllium met this criterion.

2. Nuclear attack requirements. If a material's requirements is related to per capita consumption rather than industrial output, the requirements under a nuclear scenario may be greater than during a conventional war. If this is the case, the stockpile goal should be based on the nuclear scenario. One material, opium, meets this criterion. The requirements for a three-year conventional war are about 70,000 pounds while the nuclear requirement are 75,000 pounds.

3. Selective interdiction. If a material comes from one or two sources, the enemy could concentrate its efforts to disrupt normal wartime supplies, as occurred in World War II. If a material meets this criterion, and is characterized by a lack of substitutes and absence of feasible air transportation, the transportation losses were doubled for the General Civilian tier and tripled for the Essential Civilian tier. The one material which met all of these criteria was metallurgaicl grade chromite.

4. Foreign Trade Dependency. Some of the sources that supply the U.S. with strategic and critical materials, in turn depend on the U.S. for imports of strategic material. If U.S. exports constitute 25% or more of the U.S. requirements, U.S. wartime requirements should include exports; otherwise, exports will be ignored. Two materials meet this criterion, Industrial Diamonds and Molybdenum. As the U. S. is the world's major producer of molybdenum, the stockpile goal is zero even with this adjustment for exports. Exports to Canada of industrial diamonds for use in mining equipment raised the stockpile goal for that material.

5. Inventory Consideration. If U.S. producers held inventories twice the normal levels, the increase in inventories would be considered in the supply calculations if this was determined to be a long-term phenomena. No materials met this criterion.

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6. Computational Procedures and Data. Some materials are included for which the existing data or modeling procedures are inadequate. This adjustment is short term in nature, for the data and/or model should be upgraded so that adjustments are not necessary. Two families of materials fall in this category, Bauxite-Alumina-Aluminum, and Rutile-Titanium.

Bauxite is the raw material which is processed into alumina which is then converted to aluminum. The existing model calculates the supplies and requirements for Bauxite and Aluminum separately and does not consider Alumina. This resulted in some double counting. To correct this situation, goals were calculated based on the supplies of Bauxite and Alumina and the requirements for Aluminum. The model and the underlying data are being updated to reflect the proper calculational procedure. The calculations done by hand at FPA were checked and verified by the Aluminum specialists of the Departments of Commerce and the Interior.

Rutile is the raw material which is converted into titanium metal. During peacetime, 80% of the rutile consumption occurs in non-metallic uses while during wartime, the demand for titanium metal for use in military aircraft increases dramatically. Because of the large shift in end-use applications from peace to war, rutile and titanium requirements must be calculated separately, even though this results initially in some double counting of stockpile goals in the system. To correct this, the Defense and Essential Civilian portion of the goal for titanium is retained while corresponding portions of the rutile goal are eliminated. At the same time, the General Civilian portion of the titanium goal is eliminated and the corresponding portion of the rutile goal is retained. Thus, the titanium goal falls only in the Defense and Essential Civilian tiers and the rutile goal falls only in the General Civilian tier.

3. QUESTION: Isn't it possible that this highly theoretical economic model of yours will produce stockpile goals that do not really reflect the actual use of materials in our economy? After all, the best economic models now in use for other purposes do not exactly have a distinguished record in terms of forecasting the future.

ANSWER: The system of models used by FPA to estimate stockpile goals is not, in fact, highly theoretical. The MCL-Thurow macro-economic model, used to estimate the level and composition of GNP, has been in use for approximately 7 years, and evidence indicates it tracks the trends of the economy well. (GSA/OP/MCL TR-93, The MCL Thurow Model, and GSA/OP/MCL TR-96 The MCL-Thurow Model Supplement). In its applications as a planning model, it is not necessary to anticipate all economic events such as recessions and devaluations. In spite of this, the model does respond to economic variations. It is reasonably short-term in that projections are utilized only for 3 years in the future, and are updated quarterly. Further, a preponderance of the variables used in the model are pre-determined, and most of these are relatively easy to estimate (for example, structure of the labor force by age). The model is in a state of continuous review and update to ensure the highest possible degree of accuracy for its predictions.

The Demand Impact Transformation Table (DITT) transforms the GNP entimates developed in the macro-model into approximately 280 categories, and then converts each of these categories into demands on each of 109 industries. For example, footwear purchases are converted to demands on the rubber, plastics, footwear transportation, warehousing and wholesale and retail trade industries. The DITT table is developed by experts within FPA, using published sources almost entirely (DOD wartime expenditure patterns are an obvious exception). Alter all 280 demand categories have been allocated to specific industries, each industry's total final demand is cycled through the input-output table.

The input-output (I-O) table is a compilation of data provided approximately every 5 years by the Bureau of Economic Analysis, Department of Commerce. The I-O table is derived from data collected from several Federal sources, such as the Census of Manufactures and other activities of the Bureau of the Census, the Bureau of Labor Statistics, and so on. The present 109-industry I-O table used by FPA is basically the 86-sector I-O table developed by BEA, with the construction industry expanded by FPA into more sectors. FPA also has converted the table to reflect domestic output requirements by placing transferred (competitive) imports into the final demand portion of the table.

As applied to the ultimate objective, i.e., the estimation of stockpile material requirements, shifts in technology are detected in the trends of the material consumption ratios. Data records have been established for each material for a period ranging between 12 and 20 years. The record of each material's total consumption is further broken down into its consumption by each of the 109 I-O industries. (This is done by experts at the Department of Commerce.) Trends in the consumption of materials by specific industries thus can be identified and projected ahead. The material consumption patterns take into account shifting technology, since the

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consumption trends are stated in terms of physical quantities of materials per constant dollar of total gross output. In addition, to the extent that there are errors in the GNP projections, in DITT, or in the projections of output, the impacts of these errors are reduced by relating the actual trends in physical materials consumption to industrial output--so long as the pattern of the errors remains unchanged, the estimates of materials consumption can be made within reasonable limits of accuracy--in fact, in large measure this robustness embodied in the material consumption ratios is what makes the overall system as good as it is.

4. QUESTION: The new stockpile goal for copper, in which the U.S. is nearly self-sufficient, is for a 6-1/2 year supply of imports at current demand; but the new goal for tin, for which there is no primary domestic production is for only a 7 month supply at current demand.

How do you explain the apparent contradiction between these two goals?

ANSWER: The question compares the peacetime supply and requirements for tin and copper and when this is done an apparent contradiction arises. Stockpile goals are based on wartime, not peacetime, requirements and supply. These conditions affect each material differently.

Requirements - Peacetime requirements for copper are projected to grow 20% between now and 1980; tin requirements are expected to decline, perhaps 20%, during the same time span. Thus, we have two materials moving in opposite directions under normal conditions. The situation is magnified during wartime. Military requirements for copper for use in shell casings and communications equipment increase significantly over peacetime levels. The increase in the military consumption of tin is not nearly as large as that for copper.

Supplies. Almost half of the wartime requirements for tin can be met through recycling and secondary production. Only 30 percent of copper requirement can be met in a similar fashion. Supplies of both copper and tin from outside North America that can be disrupted during wartime are appropriately discounted.

The net result of these supply and requirements considerations result in a stockpile goal for copper of 1,299,000 short tons which represents 11% of the wartime copper requirement. The stockpile goal for tin of 32,499 long tons represents 20% of the wartime requirements.

5. QUESTION: Your stockpile goals show a need for 75,000 pounds of opium salts, though the 1973 objective was zero. Now, there was no opium in the stockpile before 1959, when the Gaither Committee recommended stockpiling this material as a base for morphine in the event of nuclear attack.

Does the government consider a nuclear attack more likely than it did three years ago? What is the reason for this new and much higher opium goal?

And why, among all the pharmaceuticals necessary for medical use, was opium alone selected for stockpiling?

ANSWER: A nuclear war is not considered more likely now than three years ago. As has been mentioned, after initial imbalances are estimated, all stockpile materials are reviewed in the light of "special materials" criteria, one of which has to do with nuclear attack requirements: if the goal for a material is higher under a nuclear scenario than under the conventional war scenario, the nuclear-based goal is used. The "special materials" distinction was not used in calculating 1973 objectives. Since the 1973 objectives were established, there has been extensive testimony in Congress by the Surgeons General of the various armed services as to the inadequacy of the 1973 opium objective. In 1973, the appropriate experts in the various departments and agencies did not have the opportunity to review the 1973 objectives before they were established. As part of the new stockpile planning process, a cycle of expert review has been included to avoid the 1973 problems.

Opium alone was not selected for stockpiling. There are two other medicinals in the stockpile (quinine and quinidine), each with stockpile goals, but only in the case of opium did the nuclear war goal (75,000 pounds) exceed the conventional war goal (70,000 pounds). The goal is determined by the per capita dose rate required after a surprise nuclear attack. The dose rate is derived from data prepared by the Public Health Service.

6. QUESTION: You have told this committee and others that you can provide a complete "audit trail" or documentation of every stockpile goal through the new economic model. But what about the assumptions, the Gross National Product projections, the special planning factors, and the political reliability judgments - how can you justify them? What if there are flaws in all these judgments about the next war, about future Gross National Product, about the political future - won't that make this model fairly sterile and meaningless?

ANSWER: Gross National Product projections were not developed in a sequestered atmosphere. Economists in the Mathematics and Computation Laboratory (MCL) of FPA first prepared a list of proposed values to be assigned to the pre-determined variables of the macro-economic model. These proposed values were submitted to the Stockpile Policy and Objectives Division (EFS) of FPA where a group of economic experts reviewed them. After agreement between the two groups of economists was reached, the model was run. At that point, the results were available to interested members of the Interagency Steering Committee for review. In future activities, the same types of procedures will be followed.

Supplementing this review and oversight process was an additional safeguard embodied in the procedures: DOD expenditures, which ultimately were of significant influence on the stockpile, were developed outside the modeling framework by a separate interagency subcommittee, and reviewed by the Interagency Steering Committee. It was the approved totals that were placed in the list of input variables to the model. These types of procedures also will be followed in future activities.

The special planning factors applied after the goals were calculated were evaluated once again by a group, not by individuals. In turn, any changes emanating from this review were recorded and submitted to the Interagency Steering Committee for its approval. Thus far, special planning factors have not accounted for major changes over the range of the total stockpile. A complete list of the materials specially adjusted and the amounts and rationale for the adjustments were provided in the report of Phase II of the interagency study. Although most of that portion of the report is classified for national security purposes, it can be stated that the total of all adjustments amounted to about $41 million in December 31, 1975, prices.

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Cross-checking is a keynote of the political reliability factoring process. Within the Department of State, Desk Officers develop the initial ratings, and these are reviewed by the Assistant Secretaries in charge of the Regional Bureaus. Once an agreement is reached within the State Department the ratings are transmitted to FPA where two validation checks are made. The first compares the new ratings to the old. The second utilizes FPA's own computer-based rating system as a contrast with the new ratings. Major changes in either are identified and an explanation sought from each agency. Upon reconciliation of these differences, the results will be provided to the successor of the Interagency Steering Committee, i.e., the Annual Materials Plan Steering Committee for its review and approval.

By way of summary, there really is little, if any, opportunity for an individual or group of individuals to manipulate the size of stockpile goals.

In addressing the virility and meaningfulness of the models and similar constructs used to estimate stockpile goals several factors must be considered. First, properly constructed, models trace out rapidly and accurately the implications of assumptions and judgments. This being the case, the primary concern must be addressed to the validity of the assumptions and judgments, and this is precisely why the interagency process is so useful and valuable. Second, that the models themselves have been demonstrated to be the best available is summarized in this quotation from Metals Week, November 8, 1976:

> "The modeling now being done by FPA is described by some experts as being more advanced than that generally found in either industry or other government agencies."

Third, despite the foregoing facts, this does not negate the possibility of errors in judgment. It must be kept in mind, however, that the period of projection of the war scenario is only 3 years ahead and that the inertia of the U.S. economic system is great enough to preclude all but the most remote of surprises. Further, changes in economic, political, international and technological factors are tracked continuously by FPA and the changes are incorporated within the system immediately. At least once a year, the status of the system is reviewed in an interagency content that culminates in the Annual Materials Plan.

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Fourth, given the possibility of error in judgment however remote, it is only prudent from a national survival standpoint to be somewhat conservative in stockpile planning. If, for example, a nuclear war were the basis for planning, there would only be a few items, mostly medicinals, in the stockpile. If the war that actually occurred were non-nuclear the U.S. then could experience severe materials shortfalls and could subsequently face the undersirable alternatives of negotiated defeat or nuclear escalation. Thus by conservative planning, the effects of errors in human judgment are veered from impacts on lives and property to investment in a national asset -- the 3-year emergency stockpile. The holding costs of this stockpile are low, amounting to a fraction of a percent of its value yearly. Since the end of 1973, sales have amounted to about $2.7 billion, and the stockpile still is valued at about $7.6 billion because its value has risen with recent inflationary trends in the economy. In a national emergency or declared war, the material is sold -- it is not given away -- thus preserving its status jointly as a national asset and a security hedge.

7. QUESTION: At least three kinds of changes would be possible in the stockpile under the new policy: changes in the annual materials plan, changes in the goals, and major reviews of basic assumptions at least every four years.

Won't so many changes make it impossible for the Congress and the public to know what the stockpile policy is at any given time?

Couldn't all these changes create uncertainties in the market, causing wild fluctuations in prices?

ANSWER: Changes in stockpile goals will take place continuously as new data and developments occur. These changes will not be impossible for Congress to track, because FPA maintains a set of data tables relating the stockpile planning factors directly to estimate of requirements and supplies, by tier (defense, essential civilian and general civilian) and by year. Changes in goals thus can be related directly to changes in the basic data and planning factors. As discussed in other answers to questions, a complete set of records is maintained all the way back to the original input data. Checking therefore is feasible if not tedious.

Changes in the Annual Materials Plan are a function of several factors, the most important of which is the priority system. Priorities are assigned to the tier-year combinations, and the Plan is structured in a way to move from the highest to the lowest priority. Although the specific details of the priority assignments are classified, it can be said that the defense tier gets priority over essential civilian tier which, in turn, has priority over the general civilian tier. Within any particular priority assignment, materials are assigned priorities in a way that takes into account import dependencies, present inventories and the overall shortfall of the material in that priority level. Problems of market timing or budgetary constraints may require deviation from time to time, but only to priorities in the neighborhood of the priority being filled. Thus, for example, if the priority assigned to the second year of defense were being worked and a certain material could not be acquired because of budgetary or environmental constraints, we might work a material from the essential civilian tier with a close priority assignment; we would not jump to a material in the last priority of the general civilian tier. The procedures on priorities were approved as part of the stockpile planning process, and any imprudent deviations would not be sanctioned by the Annual Materials Plan Steering Committee or at higher review levels.

Major reviews of the basic assumptions of stockpile policy are not new. There have been several such reviews in recent years--1968, 1970, 1973 and 1976. The new aspect is the form of the review. A high-level interagency group, chaired by the Director of FPA, will review not only the basic policy assumptions, but also the progress toward stockpile goals as manifested in the Annual Materials Plan for the period. This group not only will assess the progress, but also will identify the sources of problems if any, identify changes in policy needed to overcome those problems, and report their findings to the President through the National Security Council. If remedial changes in policy are subsequently issued, it becomes a relatively simple matter to

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identify the impact of those policy changes on stockpile planning, because of the manner in which the audit trail system is established. That is, computer runs using the same data but reflecting only the effects of policy parameters will be made for the audit trail record.

There is the definite possibility of the uncertainties attached to the new stockpile policy affecting market prices. In releasing its first official set of stockpile goals, FPA stated clearly that the new goals could not be interpreted as objectives were in the past--the goals represent no commitment to buy or sell fixed amounts as quickly as possible. It also was clearly recognized that, while industry might have problems with this new approach, the impact could be mitigated by following the activities of FPA for several years. Given the lack of definite commitment to a stockpile goal in a specific period of time, and given the statutory requirement to prevent undue loss of value to the Federal Government in the transactions process, this seems to be a prudent course of action.

ANSWERS TO QUESTIONS
CONCERNING THE STRATEGIC STOCKPILE
REQUESTED BY THE JOINT COMMITTEE ON DEFENSE PRODUCTION

ELMER STAATS, COMPTROLLER GENERAL
GENERAL ACCOUNTING OFFICE

QUESTION 1.

THIS NEW STOCKPILE POLICY HAS SO MANY MOVING PARTS THAT IT IS HARD TO FOLLOW THE ACTION. THERE ARE YEARLY CHANGES IN THE MATERIALS PLAN FOR ACQUISITIONS AND DISPOSALS. THERE MAY BE CHANGES IN THE GOALS WHENEVER MAJOR ECONOMIC FACTORS SHIFT. AND THERE IS SUPPOSED TO BE A REVIEW OF THE UNDERLYING ASSUMPTIONS AT LEAST EVERY FOUR YEARS.

WON'T THIS DYNAMIC SITUATION MAKE IT VERY DIFFICULT FOR THE CONGRESS TO ASSESS WHAT IS HAPPENING IN THE STOCKPILE FIELD? NONE OF THE STANDARDS WILL HOLD STILL.

WILL ALL THESE CHANGING FACTORS TEND TO INCREASE UNCERTAINTY AND VOLATILITY IN THE MATERIALS MARKETS?

Answer:

It is true that with constantly changing conditions it is difficult to have continuity concerning events in particular minerals, metals, and industrial goods. The Annual Materials Plan, however, would give Congress the opportunity to review acquisition and disposal actions proposed for that fiscal year. Supplementing the annual plan with the Administration's long range plan for fully completing acquisition and disposal actions should give Congress reasonable visibility of events. The annual plan would be made more informative by including appropriate details concerning the underlying assumptions giving rise to the need to buy or sell items in the immediate and long term. Of course, the Congress always has the option of having hearings, requesting more details from the agencies and the like should additional information be needed.

The timing of Government acquisition and disposal actions is crucial. Any time a new large buyer/seller enters the marketplace, such as the Government would do, a new element of uncertainty is introduced. It likely will create some degree of volatility in price and induce various responses on the part of the private sector in matters such as investment, consistent with their perceptions of what the Government role will be. Over the long run, however, it is hoped that the market would adjust to the Government's presence particularly if the acquisitions and disposals reflect a consistent policy and are made in a responsible manner.

QUESTION 2.

INDUSTRY SEEMS TO FEAR THAT THE NEW STOCKPILE POLICY MAY RESULT IN A DE FACTO "ECONOMIC STOCKPILE." YOUR TESTIMONY SUGGESTED THIS POSSIBILITY, TOO.

WHAT EVIDENCE WOULD YOU POINT TO THAT RAISES THIS QUESTION OF USING THE STOCKPILE FOR OTHER THAN NATIONAL DEFENSE PURPOSES? DO YOU THINK IT IS NOW BEING CONSIDERED FOR "ECONOMIC" RATHER THAN STRATEGIC PURPOSES?

ARE YOU SAYING THAT WE SHOULD JUST BE CANDID ABOUT WHAT STOCKPILES HAVE BEEN USED FOR IN THE PAST AND WRITE LAWS TO PERMIT THESE USES?

Answer:

The point we made earlier is that the disposal actions we examined did not suggest that the stockpile had been used for other than authorized purposes. However, the term "common defense" affords great latitude in making judgments as to what may be legitimately disposed of. Our sense of the situation is that although perhaps not legally wrong, at least some disposal actions have been made for what appears to be other than "common defense."

Concerning whether the stockpile is presently being considered for economic rather than strategic purposes, again one gets into the question of what constitutes the "common defense." If the "common defense" is considered to include general civilian uses during a war emergency, then the present policy can be construed to cover strategic needs. If, on the other hand, the term is intended to exclude such uses, then the present policy is tending towards economic stockpiling. When one moves away from the central reason for stockpiling (military purposes) and into the general civilian sector needs, the issue of economic stockpile is more in the forefront.

Concerning past practices, we would point to a recent report by the Office of Technology Assessment. Its August 1976 report commented on the policies of the 1960's, stating that stockpiles and Defense Production Acts inventory sales were made to soften the adverse impact and/or reduce upward pressure on prices of industrial materials. Further, in some measure, stockpile sales were made to reduce demand for the imposition of wartime material and production controls. We believe many people involved in stockpile activities would agree with these views.

It would not be very useful to go back over stockpile history at this time, however, in the light of the perceptions that exist concerning past practices, we should attempt to safeguard against any possible future abuses. Any legislation should be made as explicit as possible about the purposes of the stockpile and conditions under which disposal actions could be made.

QUESTION 3.

DON'T JUDGMENT FACTORS, SUCH AS POLITICAL RELIABILITY INDICATORS AND SPECIAL MATERIALS FACTORS, OFFER THE OPPORTUNITY FOR EASY MANIPULATION OF THE STOCKPILE GOALS?

ARE YOUR PEOPLE WHO HAVE LOOKED AT THIS FULLY SATISFIED THAT THE NEW STOCKPILE ASSUMPTIONS, FORMULA, AND GOALS ARE MANIPULATION-PROOF?

Answer:

Criteria and tests (factors) that are used to arrive at goals are judgmental. Every judgmental decision that affects one assumption can have considerable impact on the desired material position.

We have looked at the methodology and we know how some factors have been derived. However, we have not reviewed the individual decisions and judgments which were made. Obviously, judgment factors can be manipulated, consequently, we are not in a position to say that goals are manipulation-proof. As we testified with respect to copper, if a decision were made not to stockpile for general civilian needs, the goal for copper would disappear entirely.

The current system does have audit trails built into it, and if Congress found it desirable, FPA could present a brief explanation of any major changes in the factors with its Annual Materials Plan. This would provide more visibility and could help to alert Congress of changes in assumptions, which have major impacts on the goals -- either up or down.

QUESTION 4.

A MAJOR THEME OF YOUR TESTIMONY IS THE NEED TO LOOK AT STOCKPILE POLICY IN THE CONTEXT OF A COMPREHENSIVE MATERIALS POLICY. BUT THE NEW STOCKPILE POLICY WAS DEVELOPED BY AN INTER-AGENCY COMMITTEE REPRESENTING EIGHT MAJOR DEPARTMENTS.

IS IT YOUR FEELING THAT THIS INTER-AGENCY COMMITTEE APPROACH WAS INADEQUATE TO DEVELOP A BALANCED STOCKPILE PROGRAM?

Answer:

We have not examined this area in depth yet. It is our understanding, however, that the agencies that participated in the stockpile study were organized around the same theme -- what are the possible war scenarios we want to prepare for, and what are the items and quantities needed. With everyone pointed in the same direction, and without explicit consideration of alternatives to meet the designated needs, an interagency approach will not develop the broader, more balanced approach we have talked about. We believe the mandate could have been broadened beyond what kind of a stockpile would be needed for defense in a war situation to include options other than stockpiling for meeting those needs. In this connection, our testimony mentioned several options and there are others that could be considered. Both the Office of Technology Assessment and the National Commission of Supplies and Shortages have addressed alternative stockpiling policies and before any final changes in stockpiling policy are adopted, their work should be considered and carefully evaluated.

QUESTION 5.

DO YOU THINK THAT THE SIZE AND COST OF THESE NEW STOCKPILE GOALS ARE JUSTIFIED IN TERMS OF THE LIKELIHOOD OF AN EXTENDED WAR? ARE WE BUYING TOO MUCH INSURANCE IN THIS STOCKPILE?

YOUR CONCLUSION SEEMS TO BE THAT ANY DECISION TO IMPLEMENT THE NEW STOCKPILE POLICY SHOULD AWAIT THE REPORT OF THE NATIONAL COMMISSION ON SUPPLIES AND SHORTAGES, WHICH IS DUE IN DECEMBER. YOU ALSO SAY IMPLEMENTATION SHOULD NOT BE PERMITTED UNTIL THERE IS MORE INFORMATION ABOUT THE STOCKPILE STUDY ITSELF.

WHAT INFORMATION DO YOU THINK THE CONGRESS STILL NEEDS ON THE STOCKPILE POLICY BEFORE IT AUTHORIZES THESE NEW DISPOSALS AND FUNDS THE NEW ACQUISITIONS?

Answer:

(A) We are not in a position to comment on the likelihood of an extended war. The purpose of the stockpile is to provide a hedge for a specific period in an assumed major war which extends over many years. Indeed much of DoD's expenditures are in support of this scenario. However, there are many experts that would argue against this possibility. These individuals suggest that either side would escalate to a nuclear conflict. DoD has maintained that strong conventional forces including a sound industrial base are essential to raise the threshold of a nuclear holocaust. It is hard to argue against the above position.

(B) The National Security Council and the interagency study group made the determination and the President selected the option of providing a stockpile of material to cover all three categories; i.e., defense, civilian essential and civilian general. His deicsion was made to support a sound economy in case of a wartime mobilization buildup.

His decision resulted in the development of goals of material to support the entire economy for three years. We believe more data is needed to support the contention that all three years of general civilian consumption should be funded by the Congress. In addition to stocking for three years, there are other important factors that we believe should have been considered before a decision is made to stockpile certain material and before adopting a three-year support policy. For example:

(1) There is no consensus in the Government on the definition for critical materials, consequently, there is some uncertainty as to whether we are stocking the right material.

(2) Without the report from the National Commission on Supplies and Shortages, which is to contain the necessary legislative and administrative actions to develop a comprehensive strategic and economic stockpiling and inventories policies which facilitates the availability of essential resources, how can the Government be certain that a three-year policy is consistent with the total materials situation which will also be addressed by the Commission.

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December 8, 1976

The Honorable William Proxmire
Vice Chairman
Joint Committee on Defense Production
Senate Annex III, Room A-421
Washington, D. C. 20510

Dear Senator:

In returning the transcript of the November 24 session on the stockpiles, I would appreciate adding the following comments to the record of my response to your question on the relative merits of a simple approach based on actual import dependence in place of the complex methodology that has been used in the past.

The complex methodology of the past has been directly responsible for the violent swings that have occurred in stockpile goals in the past. Precisely because it is based on assumptions it lends itself to the influence of non-defense considerations -- budgetary, economic or political.

You have yourself observed the obvious difficulties of evaluating the relative "reliability" of overseas sources. A relatively modest change in assumptions -- which after all are at best only informed guesses -- will create enormous changes in the answers. Thus we have seen the stockpile goal alternate between 0 and 3,500,000 tons for copper -- a difference in cost to the taxpayer between 0 and five billion dollars at today's prices.

The methodology has been costly to the taxpayer and disruptive to the market. The gradual changes in targets that would result from basing them on import experience would be less costly and less disruptive. While my prepared remarks referred to the current three-year base, one could modify the program in order to conserve funds by limiting the three-year stockpile to those commodities for which this country depends on imports for 50 percent of its supply and holding a smaller reserve of those materials which we produce ourselves to an appreciable extent -- i.e. more than 50 percent of our needs.

Continued...

The company by which I am employed is a large producer of copper and lead. This country is relatively well-off as to domestic sources of both these metals. We do not advocate large stockpiles of either -- and I am confident that this view is shared by the other domestic producers. We are also large producers of silver; I sincerely believe that it is in the government's interest to retain the relatively modest stockpile of silver it now holds -- which is only about seven percent of the amount held by the government 16 years ago.

You expressed concern about undue influence being brought to bear by producers to induce government agencies to stockpile metals they produce.

I can assure you that in the 30 years of the stockpile program the only expressions of opinion on the size of stockpiles that have been made by my company, Asarco, or by myself have been made publicly before Congressional committees or at meetings called by government agencies or in speeches publicly reported before trade groups. We have not made and will not make any effort to influence those charged with responsibility in this matter except through proper channels and when our views are solicited -- as in the case of your committee's request for my appearance.

But, and this is my principal point, if the Congress legislates that stockpile goals be directly related to import dependence as shown by U. S. census figures -- then all questions of undue influence in setting stockpile goals would automatically disappear.

I trust you will permit these further observations to be made part of the record of the hearing. Thank you for your courtesy in interrogating me.

Sincerely yours,

Simon Strauss

Simon D. Strauss
Chairman
AMC Minerals Availability Committee

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December 14, 1976

The Honorable William Proxmire
Vice Chairman
Joint Committee on Defense Production
Senate Annex III, Room A-421
Washington, D. C. 20510

Dear Senator:

In response to your letter of November 30, I am setting forth the answers to the four questions attached to that letter.

1. You suggest that there is no real distinction possible between the peacetime and wartime uses of certain materials.

   Does this mean that there would essentially be no difference between a peacetime and a wartime economy?

   Are you saying that basic consumption patterns would not be altered under wartime conditions?

RESPONSE:

There will be major differences between a peacetime and a wartime economy of course. Production of consumer goods, such as automobiles, will be drastically affected. There will be limitations on residential and commercial construction. Various types of rationing may be necessary.

However, experience in World War II indicated that the basic materials will be required in approximately equal amounts to meet the needs of the wartime economy. Thus copper that might have been used for automobiles or housing will be diverted to such uses as ammunition and signal wire. The same thing is true of aluminum, steel, lead and zinc and the other basic elements. If one looks at the U. S. consumption of metals during the years 1941 through 1945, the pattern of total demand was not greatly different from the pattern of total demand in

Continued...

peacetime years of high economic activity -- with the possible exception of aluminum. The extensive aircraft needs of World War II resulted in a huge jump in the demand for aluminum. However, when peace was restored, the aluminum industry developed new markets which readily absorbed the capacity that had been created during the war.

2. The contradiction you point out between the new goals for copper and tin seems to be true for national security. But the large new goal for copper seems to benefit producers of that metal, and tin producers seem to be content with the decline in the tin goal.

   Doesn't this situation go against the grain of your testimony?

   Doesn't it show how producers tend to benefit from the new policy?

RESPONSE:

I do not believe that tin producers are content with the decline in the tin goal. Tin consumers may favor a decline in the tin goal since they hope stockpile sales will tend to hold down tin prices. With respect to copper, undoubtedly producers would benefit in the short run from large purchases for the stockpile since they now hold large surplus stocks. On the other hand, I believe most copper producers feel that a large stockpile in government hands would once again create the possibility of manipulation of markets by government to the producers' detriment. This certainly occurred in the Johnson and Nixon Administrations, when the stockpiles were used in an attempt to control prices -- attempts which proved futile in the long run and disadvantaged domestic producers in the short run at a time when foreign producers were benefiting from a much higher world market.

My testimony in regard to copper and tin was intended to convey the mining industry's desire that stockpile goals be set on the basis of security needs and not on the basis of what helps industry -- whether it be producers or consumers.

3. The Federal Preparedness Agency argues the need to keep certain kinds of stockpile information confidential, in order to prevent unnecessary speculation or even market disruption.

   Wouldn't your proposal for setting stockpile goals leave the government at the mercy of speculators, by forcing the government to reveal its intentions too openly and too far in advance?

RESPONSE:

Since 1963, stockpile objectives have been a matter of public record. In the same way authority to sell material from the stockpile has been a matter of public record since it required Congressional authorization.

It is true that basing stockpile objectives on the basis of trends in the level of net imports will enable buyers and sellers to anticipate changes in stockpile goals. However, these changes will be far more gradual and far more orderly than the abrupt changes which have been prevalent under the present methodology. In this sense I believe that there will be less speculation and less market disruption than is the case with the "yo-yo" pattern that we have had -- to use your very apt expression.

4. Your suggestion that the goals for chrome and the platinum group metals are too low is somewhat puzzling. The figures for these goals do seem high enough to allow for the fact that the Soviet Union and Southern Africa are the main sources.

   Will you explain in more detail why you believe that these goals are in error?

RESPONSE:

I did not mean to imply that the present goals for platinum and chrome are too low. If you will reread my testimony on these materials, I simply asked that you look at the history of these stockpile objectives. My point was -- and I should have said so explicitly -- that the levels at which stockpile goals were set in 1973 could have been disastrous given our dependence on the Soviet Union and Southern Africa for these two metals. I was simply citing these two materials in further support of my recommendation that net import dependence be the test. The new stockpile goals for these materials are not far out of line with my recommendation, but the frequent changes that have been made in the past underscore the dangers of the methodology which have been used until now.

Thank you so much for this opportunity to further explain the views which I presented at the recent hearing on behalf of the U. S. mining industry.

Sincerely yours,

Simon D. Strauss
Chairman
AMC Minerals Availability Committee

APPENDIX II

STRATEGIC AND CRITICAL MATERIALS STOCKPILES—GOALS, OBJECTIVES AND INVENTORIES

Commodity	Units	1976 goal	1973 objective	Pre-1973 objective	1975 inventory
Alumina	Thousand short ton	11,532			
Aluminum	do	0	0	450	0.799
Aluminum oxide:					
Abrasive grain	Short ton	75,000	17,200		50,905
Fused crude	do	147,615	0	300,000	265,982
Antimony	do	20,130	0	40,700	40,714
Asbestos:					
Amosite	do	26,291	0	18,400	42,815
Chrysotile	do	0	1,100	13,700	10,955
Bauxite:					
Metal, Jamaica	Thousand long dry ton	523	4,638	5,000	8,858.8
Metal, Surinam	do	0	0	5,300	5,300
Refractory	Thousand long calcined ton	2,083	0	173	173
Beryl Ore	Short ton	0	0	28,000	17,986
Beryllium:					
Copper master alloy	do	16,710	0	(1)	7,386.8
Metal	do	895	88	(1)	229
Bismuth	Thousand pound	771	96	2,100	2,100
Cadmium	do	24,701	4,447	6,000	6,453.9
Castor oil: Sebacic Acid	do	0	0	5,000	5,009.6
Chromite:					
Chemical	Thousand short ton	734	8	250	250
Metallurgical, ore	do	2,550	445	3,086.8	2,504.5
Refractory	do	642	54	368	399.9
Chromium:					
Ferro, high carbon	do	236	11	(1)	402.6
Ferro, low carbon	do	124	0	(1)	318.9
Ferro, silicon	do	69	0	(1)	58.3
Metal	do	10	0	3.7	3.7
Cobalt	Thousand pound	85,415	11,945	38,200	45,897.3
Columbium:					
Carbide powder	do	0	16	(1)	21.3
Concentrates	do	3,131	0	1,176	1,821.6
Ferro	do	0	748	(1)	930.9
Metal	do	0	36	(1)	44.8
Copper	Thousand short ton	1,299	0	775	.489
Cordage fibers:					
Abaca	Million pound	24	0	25	0
Sisal	do	114	0	100	0
Diamond dies, small	Piece	0	7,900	25,000	25,473
Diamond:					
Industrial bort	Thousand karat	14,974	0	23,700	33,576.6
Industrial stone	do	5,559	0	20,000	19,999.9
Feathers and down	Thousand pound	6,494	1,938	3,000	958.4
Fluorspar:					
Acid grade	Thousand short ton	1,594	0	540	889.9
Metallurgical	do	1,914	159	850	411.7
Graphite:					
Natural, Ceylon	Short ton	6,271	3,100	5,500	5,499
Natural, Malagasy	do	20,472	8,200	18,000	17,939
Other	do	34,748	0	2,800	2,802
Iodine	Thousand pound	3,333	0	8,000	8,011.7
Jewel bearings	Thousand piece	224,623	62,740	57,500	63,282.8
Lead	Thousand short ton	865	6	530	601.6
Manganese:					
Battery, natural	Short ton	12,736	10,700	135,000	264,656
Battery, synthetic dioxide	do	19,105	0	1,900	3,510
Ore, chemical	do	247,136	25,600	70,000	227,824
Ore, metallurgical	Thousand short ton	2,052	751	4,000	3,727.7
Ferro, high carbon	do	439	200	(1)	600
Ferro, low carbon	do	0	0	(1)	0
Ferro, medium carbon	do	99	11	(1)	28.9
Ferro, silicon	do	81	16	(1)	23.5
Metal, electrolytic	do	15	5	(1)	14.1
Mercury	Flask	54,004	42,700	126,500	200,061

APPENDIX II—Continued

STRATEGIC AND CRITICAL MATERIALS STOCKPILES—GOALS, OBJECTIVES AND INVENTORIES—Continued

Commodity	Units	1976 goal	1973 objective	Pre-1973 objective	1975 inventory
Mica:					
Muscovite block	Thousand pound	6,188	1,600	6,000	5,108.1
Muscovite film 1 and 2 quality	do	90	413	2,000	1,350.4
Muscovite splittings	do	12,631	2,200	19,000	23,728.4
Phlogopite block	Pound	206,064	51,000	150,000	146,885
Phlogopite splittings	Thousand pound	932	200	950	3,405.9
Molybdenum:					0
Disulphide	do	0	0	0	0
Ferro	do	0	0	0	0
Nickel	Short ton	204,335	0	0	0
Opium:					
Gum	Pound	0	0	102,000	32,916
Salt	do	75,000	0	41,000	39,514
Platinum group:					
Iridium	Troy ounce	97,761	1,800	17,000	17,002
Palladium	Thousand Troy ounce	2,450	329	1,300	1,254.9
Platinum	do	1,314	188	555	452.6
Pyrethrum	Pound	377,851	0	25,000	0
Quartz crystals	Thousand pound	0	209	320	2,926.9
Quinidine	Thousand avoirdupois ounce	6,841	1,059	2,000	1,800.3
Quinine	do	3,045	780	4,130	3,246.1
Rubber	Long ton	513,134	0	200,000	120,190
Rutile	Short ton	173,928	0	100,000	39,186
Sapphire and ruby	Thousand karat	0	0	18,000	16,305.5
Shellac	Thousand pound	8,529	0	1,000	0
Silicon carbide: Crude	Short ton	306,628	0	30,000	80,619
Silver	Thousand troy ounce	0	21,663	139,500	139,500
Talc: Steatite block and lump	Short ton	104	0	200	1,149
Tantalum:					
Minerals	Thousand pound	5,452	312	3,400	2,553.4
Carbide powder	do	889	3	(1)	28.6
Metal	do	1,650	45	(1)	201.1
Thorium nitrate	Ton	418	0	40	3,641
Tin	Long ton	32,499	40,500	232,000	206,873
Titanium sponge	Short ton	131,503	0	33,500	31,692
Tungsten:					
Ores and concentrates	Thousand pound	8,823	4,234	60,000	110,509.1
Carbide powder	do	12,845	0	(1)	2,032.8
Ferro	do	17,769	0	(1)	2,025.4
Metal powder	do	3,290	0	(1)	1,765.3
Vanadium:					
Ferro	Short ton	10,095	0	0	0
Pentoxide	do	2,576	0	540	539
Vegetable tannin:					
Chestnut	Long ton	6,942	4,400	9,500	21,816
Quebracho	do	37,998	0	50,600	165,265
Wattle	do	20,208	0	9,500	19,208
Zinc	Thousand short ton	1,313	203	560	374.8

[1] Included in objective for basic material.

Source: Prepared by the Joint Committee on Defense Production, November 1976.

APPPENDIX III

Summary of Explanation of New Formula for Computing Stockpile Goals

Demand or requirements calculations

1. A projection for peacetime Gross National Product (GNP) over a three-year period is made. To this are applied factors which represent the anticipated shifts in civilian expenditures, in investment demand, and in exports and imports that would occur under wartime conditions. At the same time, Department of Defense wartime expenditures are calculated. This figure is combined with the shifts in the civilian economy to yield a projected wartime GNP for each of the three years in the emergency planning period. The civilian portion of this wartime GNP projection is divided into "Essential Civilian Expenditures" and "General Civilian Expenditures."

2. The resulting wartime GNP projection expressed in three categories (military, essential civilian, and general civilian) is then converted into demands on 109 industries through an input/output table to produce gross estimates of total output required to satisfy each of the three categories of expenditures. These gross estimates of total output are expressed in dollars for each of the three years in the "emergency planning period."

3. Meanwhile, the consumption of 68 basic materials by each of the 109 industries is calculated based on historical consumption rates over a period of from 12 to 20 years. Projections of requirements for materials are made based on these historical consumption rates. A range of possible error in forecasting is applied to these material requirements projections.

4. The result is a series of planning factors (expressed in terms of material consumption ratios) by which the gross dollar estimates of total output can be translated into tons or pounds of required materials. This translation process yields wartime material requirements estimates for 68 materials in 109 industries broken down as to whether they satisfy military, essential civilian or general civilian needs.

5. To these wartime materials requirements estimates are applied factors which account for the possibility of substituting one material for another that may be in short supply. Substitution factors are calculated for each material in each industry. The time required for substitution to take place in industry is also taken into account, since the benefits of substitution would be felt least in the first year of mobilization and would grow in each succeeding year, as plants and industrial processes were converted to the use of substitute materials.

6. Applying substitution factors to the material requirements estimates (Step 4) produces Final Materials Estimates; in other words,

a forecast of the needs for 68 materials in 109 industries for military use, essential civilian use, and general civilian use in each of the three years of the projected emergency planning period. The material requirements estimates for each industry are summed to give a total, nationwide figure for each use (military, essential civilian, general civilian) and each year.

Supply calculations

1. Based on data from the Commerce Department's Office of Business Research and Analysis and the Interior Department's Bureau of Mines, estimates are made of wartime supplies of 68 materials in 124 countries.

2. Through a process that involves State Department desk officer ratings and Federal Preparedness Agency review, a political reliability index is developed for each of the 124 countries. This political reliability index is applied to the wartime supply estimates to yield projections of *accessible* supplies.

3. These estimates of accessible supplies are further discounted to acount for transportation (chiefly shipping) losses expected during wartime. The final product is Estimated Delivered Supplies for each use (military, essential civilian and general civilian) for each year of the three-year emergency planning period.

Additional calculations

1. The Estimated Delivered Supply for each of the 68 materials is compared with the Final Material Estimate (Step 6) to forecast whether there will be an abundance of the material, a balance of needs and supplies or a deficiency.

2. Forecasted deficiencies dictate materials which require stockpiling. However, before stockpile goals are established, a series of so-called "Special Planning Factors" are applied to the materials where a deficiency is projected to take account of any peculiarities that may apply to a specific material. These special factors include consideration of materials that have a high proportion of end uses in military applications, materials for which consumption may change depending on whether the war is nuclear or non-nuclear (opium, for example), materials which are subject to technological innovation, to cartelization, or to transportation constraints (non-air-transportable, for example), and similar idiosyncracies. The special factors are used to trigger reviews of the estimated requirements for materials that fall into these categories.

3. After any "Special Planning Factors" have been taken account of, the stockpile goals are established, based primarily on the projected differences between requirements and supplies. These goals are separately expressed for military, essential civilian and general civilian uses in each of the three years of the emergency planning period. The stockpile formula is reportedly designed to permit an audit to be conducted for every material goal. Due to the sensitivity of some of the information involved, a complete "audit trail" for each material is classified. Following the setting of the goals, attention is given to what is the best form (industrially, economically, militarily) for stockpiling each given material.

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