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GENERAL STOCKPILE POLICY

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HEARING

BEFORE THE

SUBCOMMITTEE ON MILITARY CONSTRUCTION AND STOCKPILES

OF THE

COMMITTEE ON ARMED SERVICES

UNITED STATES SENATE

NINETY-FIFTH CONGRESS

FIRST SESSION

ON

S. 1198

A BILL TO AMEND THE STRATEGIC AND CRITICAL MATERIALS STOCK PILING ACT, AND FOR OTHER PURPOSES

S. 1810

A BILL TO AMEND THE STRATEGIC AND CRITICAL MATERIALS STOCK PILING ACT IN ORDER TO PRESCRIBE THE METHOD FOR DETERMINING THE QUANTITY OF ANY MATERIAL TO BE STOCKPILED UNDER SUCH ACT, AND FOR OTHER PURPOSES

SEPTEMBER 9, 1977

Printed for the use of the Committee on Armed Services

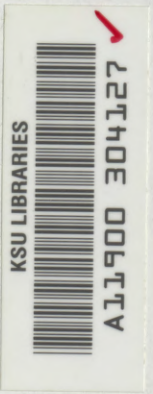


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GENERAL STOCKPILE POLICY

FRIDAY, SEPTEMBER 9, 1977

U.S. SENATE,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON MILITARY CONSTRUCTION AND STOCKPILES,
Washington, D.C.

The subcommittee met, pursuant to notice, at 9:35 a.m. in room 212, Russell Senate Office Building, Hon. Gary Hart (chairman) presiding.

Present: Senators Hart and Thurmond.

Also present: John T. Ticer, chief clerk; James C. Smith, William Ball, Edward B. Kenney, professional staff members; Jeanie Killgore, clerical assistant; Frank Krebs, assistant to Senator Cannon; Ron Lehman, assistant to Senator Bartlett; and Len Parkinson, assistant to Senator Bumpers.

OPENING STATEMENT BY SENATOR GARY HART, CHAIRMAN

Senator HART. These hearings will come to order.

One of the areas of jurisdiction of the Committee on Armed Services and of this subcommittee concerns strategic stockpiles. These hearings today have been called to look into the matter of general stockpile policy as part of this subcommittee's oversight responsibility.

The Strategic and Critical Materials Stockpiling Act of 1946 provides for the acquisition and retention of stocks of certain materials designated as strategic and critical materials.

The purpose of this act is to "decrease and prevent wherever possible a dangerous and costly dependence of the United States upon foreign nations for supplies of these materials in times of national emergency." In today's world of rapidly dwindling quantities of many natural resources, the purpose as set out in the original Stockpiling Act assumes even greater importance.

Unfortunately, today our stocks of strategic and critical materials are badly out of date. No significant acquisitions have been made since 1969; yet technology surely dictates that we have developed dependencies on new materials in the last 20 years.

Conversely, there are literally billions of dollars worth of materials currently in the stockpiles that may have been critical at one time, but today these materials are clearly excess to any conceivable need and should be disposed of. The total current value of these stockpiles is estimated to be \$7.5 billion.

During August of 1976—just over a year ago—President Ford, upon the advice of the National Security Council, approved a new

national stockpile policy. Key elements of this new policy were: First, that planning was to be based on the first 3 years of an emergency; second, that civilian needs, as well as defense needs, would be provided for; and third, that defense and civilian requirements would be estimated separately.

Based upon this new stockpile policy, a complete review of stockpile requirements revealed the following:

First, the total estimated current cost of the stockpiles required to accommodate the new policy was estimated to be \$10.2 billion;

Second, the value of materials available in the current stockpiles that could be applied against the new total requirement was \$3.4 billion, leaving a deficit of \$618 billion required to procure materials to satisfy the new policy; and

Third, the value of materials in the existing stockpile that were excess to the new policy was \$4.1 billion.

The Ford budget submitted to Congress in January, 1977, included provisions to begin buying and selling materials to accommodate this new policy. However, the Carter administration in its budget amendment declared a moratorium on stockpile activity pending a restudy of the entire stockpile question.

Today we will get into questions of stockpile policy.

We have a witness from the General Services Administration who is prepared to discuss that stockpile policy. In addition, there are three stockpile bills pending before the Senate Armed Services Committee.

The first is H.R. 4895, a bill passed by the House that would establish a stock fund to account for the proceeds from sales of excess materials and that would encourage the barter of unneeded materials for the required materials.

The second is S. 1198, a bill introduced by Senator Chiles that is identical to H.R. 4895.

The third is S. 1810, a bill introduced by Senator McClure that, among other things, would change the method of computing stockpile requirements by requiring stockpile quantities to be determined based on the quantity of that material that is imported each year.

I do not expect that we will have time in these hearings today to get into sufficient detail on any of these bills to be able to make a report on them to the full committee. But I do want to get a start and I do want to use that as a goal for this subcommittee and the full committee for the remainder of this year.

We will hear first from Hon. Charles Bennett who, I think, can safely be called the "Dean of Strategic Stockpiles," because of his long association with stockpile matters as a member of the House Armed Services Committee. I know that he will want to discuss his bill, which is the one that I described that passed the House, and I hope to get on the record his opinion on general stockpile policy matters for this committee's purposes.

As I have already mentioned, we do have an administration witness, Mr. Ronald Royal, who is the Assistant Director for Civil Preparedness of the Federal Preparedness Agency in GSA.

Finally, Mr. Simon Strauss of the American Mining Congress, who has followed stockpile matters since the law was written, will testify at the conclusion of the other two witnesses.

The bills S. 1198 and S. 1810 will be inserted at this point in the hearing record.

[The bills follows:]

[S. 1198, 95th Cong., 1st sess.]

A BILL To amend the Strategic and Critical Materials Stock Piling Act, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States States of America in Congress assembled, That section 3 of the Strategic and Critical Materials Stock Piling Act (50 U.S.C. 98b) is amended—

(1) by striking out the period at the end of paragraph (e) and inserting in lieu thereof “; and”; and

(2) by adding after such paragraph the following new paragraph:

“(f) establish a program which (1) shall provide for the acquisition of strategic and critical materials from foreign countries through barter of goods owned by the United States, and (2) shall include provisions adequate to assure the active cooperation and participation of each appropriate department and agency, as determined by the President, having custody of goods owned by the United States which are deemed suitable for barter with foreign countries.”.

Sec. 2. Section 4 of the Strategic and Critical Materials Stock Piling Act (50 U.S.C. 98c) is amended by adding at the end the following new sentence: “Each report submitted under this section shall include a detailed report on the efforts of each appropriate department and agency (as determined by the President under section 3(i)) to acquire strategic and critical materials through barter with foreign countries under the program established pursuant to section 3(f).”.

Sec. 3. Section 8 of the Strategic and Critical Materials Stock Piling Act (50 U.S.C. 98g) is amended to read as follows:

Sec. 8. (a) (1) No funds may be appropriated or obligated for procurement of materials under this Act unless funds for such procurement have been specifically authorized by law.

“(2) There is authorized to be appropriated, out of any money in the Treasury not otherwise appropriated, for transportation, maintenance, rotation, storage, refining, and processing of the materials to be acquired under this Act, such sums as the Congress, from time to time, may deem necessary to carry out the provisions of this Act..

“(3) Funds appropriated for procurement of materials under this Act, and funds appropriated for transportation, maintenance, rotation, storage, refining, and processing materials to be acquired under this Act, including funds heretofore appropriated for such purposes, shall remain available to carry out the purposes for which appropriated until expended.

“(b) Excess materials in the inventory maintained under the Defense Production Act of 1950 (50 U.S.C. App. 2061–2166) and excess materials in the national stockpile and supplemental stockpile, the disposition of which is authorized by law, shall be available, without reimbursement, for transfer at fair market value as payment for expenses (including transportation and other accessorial expenses) of acquisition of materials, or of refining, processing, or otherwise benefiting materials, or of rotating materials, pursuant to section 3.”.

Sec. 4. Section 9 of the Strategic and Critical Materials Stock Piling Act (50 U.S.C. 98h) is amended to read as follows:

Sec. 9. (a) There is established in the Treasury of the United States a separate fund to be known as the Strategic and Critical Materials Procurement Fund (hereinafter in this section referred to as the Fund). All moneys received after the effective date of this section on account of sales of materials under this Act shall be covered into the fund.

“(b) (1) Moneys covered into the fund shall be available, when appropriate therefor, only for the procurement, transportation, maintenance, rotation, storage, refining, or processing of materials under this Act.

“(2) Any moneys covered into the fund which are appropriated shall remain available, without fiscal year limitation, for the purposes for which they are appropriated until they are expended.

“(c) The Administrator of General Services shall submit a report to the Congress not later than the first day of January of each year on the financial condition and the results of the operation of the fund during the preceding fiscal year

and on its expected condition and operations during the next fiscal year. Such report shall be printed as a Senate document of the session of the Congress to which the report is made."

SEC. 5. (a) Except as provided in subsection (b), the amendments made by this Act shall take effect on the date of enactment of this Act.

(b) The amendment made by section 3 shall apply with respect to fiscal year 1978 and each fiscal year thereafter.

[S. 1810, 95th Cong., 1st sess.]

A BILL To amend the Strategic and Critical Materials Stock Piling Act in order to prescribe the method for determining the quantity of any material to be stockpiled under such Act, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Strategic and Critical Materials Stock Piling Act Amendments of 1977".

SEC. 2. (a) Section 2(a) of the Strategic and Critical Materials Stock Piling Act (50 U.S.C. 98h(a)) is amended to read as follows:

"(a) To effectuate the policy set forth in the first section of this Act, determinations shall be made from time to time, as provided in this section regarding which materials are strategic and critical to the United States and the quantities of such materials that should be stockpiled under this Act."

(b) Section 2 of such Act is further amended by redesignating subsection (b) as subsection (c) and adding after subsection (a), as amended by subsection (a) of this section, a new subsection (b) to read as follows:

"(b) (1) The President shall appoint an interagency committee composed of representatives from appropriate departments and agencies of the Government to determine which materials are to be acquired under this Act and what classification such materials shall be assigned under paragraph (2).

"(2) Materials selected to be stockpiled under this Act shall be classified by the interagency advisory committee provided for in paragraph (1) as being one of the three classes prescribed below, as appropriate:

"(A) Class A materials are those materials not produced in the United States or produced in the United States in limited quantities, are necessary for the security of the United States, are essential to the economy of the United States, and are primarily obtained from foreign sources.

"(B) Class B materials are those materials produced in the United States but are not available in sufficient quantities in the United States to offer the potential for meeting total domestic needs, are necessary to the security of the United States, are essential to the economy of the United States, and are obtained to a substantial extent from foreign sources.

"(C) Class C materials are those materials produced in substantial quantities in the United States, are available in sufficient quantities to meet total domestic requirements, are necessary to the security of the United States, are essential to the economy of the United States, and are obtained to a lesser extent from foreign sources.

"(3) The quantity of any material to be acquired under this Act (stockpile objective) shall be determined as follows:

"(A) The stockpile objective for any material designated as a Class A material shall be a quantity equal to three years' domestic net imports of such material.

"(B) The stockpile objective for any material designated as a class B material shall be a quantity equal to two years' domestic net imports of such material.

"(C) The stockpile objective for any material designated as a class C material shall be a quantity equal to one years' net imports of such material.

"(4) Subject to appropriate adjustments under paragraph (5), a year's domestic net imports of any material for purposes of clause (A), (B), or (C) of paragraph (3) shall be a quantity of the material equal to the average annual imports of such material during the five calendar years immediately preceding the calendar year in which the determination for the stockpile objective is being made (base period), plus the average annual sales or minus the average annual purchases of such material made from the stockpile during such five-year base period, reduced by the average annual exports of such material during such five-year base period.

"(5) In determining the quantity under paragraph (4) of any material to be acquired for the stockpile appropriate adjustments shall be made in the computations made under such paragraph in the case of any material which is acquired in both its crude form and in its refined or processed form so as to avoid duplicate calculations with respect to the same material.

"(6) The stockpile objective for any material acquired for the stockpile under this Act shall be reviewed once every four years by the interagency committee referred to in paragraph (1). A revised objective for such material shall be established only if the average annual quantity of imports of such material during the five calendar years immediately preceding the current calendar year increased or decreased by more than 10 per centum of the average annual quantity of such material imported during the base period applicable to such material at the time of the preceding mandatory review under this paragraph.

"(7) Nothing in paragraph (6) shall be construed to prohibit the head of the agency and the advisory committee referred to in paragraph (2) from conducting a review of the stockpile objective for any material at any time other than that prescribed by paragraph (6); but in any case in which such committee determines that the stockpile objective for any material should be computed in a manner other than that prescribed in paragraph (3), the head of the agency shall notify the Congress in writing of that determination and set forth the proposed new formula for computing the stockpile objective for such material. The new formula shall become effective with respect to such material unless, within a period of ninety days after the day on which the Congress was notified by the head of the agency, either House of the Congress agrees to a resolution disapproving such formula."

(c) Section 2 of such Act is further amended by adding at the end thereof a new subsection as follows:

"(d) As used in this section, the term 'head of the agency' means the head of the agency charged with responsibility for administering the provisions of this Act."

SEC. 3. Section 3 of the Strategic and Critical Materials Stock Piling Act (50 U.S.C. 98b) is amended—

(1) by striking out the period at the end of paragraph (e) and inserting in lieu thereof "; and"; and

(2) by adding after such paragraph the following new paragraph:

"(f) establish a program which (1) shall provide for the acquisition of strategic and critical materials from foreign countries through barter of goods owned by the United States, and (2) shall include provisions adequate to assure the active cooperation and participation of each appropriate department and agency, as determined by the President, having custody of goods owned by the United States which are deemed suitable for barter with foreign countries."

SEC. 4. Section 4 of the Strategic and Critical Materials Stock Piling Act (50 U.S.C. 98c) is amended by adding at the end the following new sentence: "Each report submitted under this section shall include a detailed report on the efforts of each appropriate department and agency (as determined by the President under section 3(f)) to acquire strategic and critical materials through barter with foreign countries under the program established pursuant to section 3(f)."

SEC. 5. Section 8 of the Strategic and Critical Materials Stock Piling Act (50 U.S.C. 98g) is amended to read as follows:

"SEC. 8. (a) (1) No funds may be appropriated or obligated for procurement of materials under this Act unless funds for such procurement have been specifically authorized by law.

"(2) There is authorized to be appropriated, out of any money in the Treasury not otherwise appropriated, for transportation, maintenance, rotation, storage, refining, and processing of the materials to be acquired under this Act, such sums as the Congress, from time to time, may deem necessary to carry out the provisions of this Act.

"(3) Funds appropriated for procurement of materials under this Act, and funds appropriated for transportation, maintenance, rotation, storage, refining, and processing materials to be acquired under this Act, including funds heretofore appropriated for such purposes, shall remain available to carry out the purposes for which appropriated until expended.

"(b) Excess materials in the inventory maintained under the Defense Production Act of 1950 (50 U.S.C. App. 2061-2166) and excess materials in the national stockpile and supplemental stockpile, the disposition of which is authorized by

law, shall be available, without reimbursement, for transfer at fair market value as payment for expenses (including transportation and other accessorial expenses) of acquisition of materials, or of refining, processing, or otherwise benefiting materials, or of rotating materials, pursuant to section 3."

SEC. 6. Section 9 of the Strategic and Critical Materials Stock Piling Act (50 U.S.C. 98h) is amended to read as follows:

"SEC. 9. (a) There is established in the Treasury of the United States a separate fund to be known as the Strategic and Critical Materials Procurement Fund (hereinafter in this section referred to as the 'fund'). All moneys received after the effective date of this section on account of sales of materials under this Act shall be covered into the fund.

"(b) (1) Moneys covered into the fund shall be available, when appropriated therefor, only for the procurement, transportation, maintenance, rotation, storage, refining or processing of materials under this Act.

"(2) Any moneys covered into the fund which are appropriated shall remain available, without fiscal year limitation, for the purposes for which they are appropriated until they are expended.

"(c) The Administrator of General Services shall submit a report to the Congress not later than the first day of January of each year on the financial condition and the results of the operation of the fund during the preceding fiscal year and on its expected condition and operations during the next fiscal year. Such report shall be printed as a House and Senate document of the session of the Congress to which the report is made."

SEC. 7. (a) The amendments made by section 2 of this Act shall become effective on the first day of the first calendar month following the month in which this Act is enacted.

(b) The amendments made by sections 3, 4, and 6 of this Act shall take effect on the date of enactment of this Act.

(c) The amendment made by section 5 of this Act shall apply with respect to fiscal year 1978 and each fiscal year thereafter.

Senator HART. We are pleased to welcome Congressman Charles Bennett, who is extremely knowledgeable on these questions and whose testimony, I think, will be of great value to this committee.

STATEMENT OF HON. CHARLES E. BENNETT, CHAIRMAN, SUBCOMMITTEE ON SEAPOWER AND STRATEGIC AND CRITICAL MATERIALS, HOUSE ARMED SERVICES COMMITTEE

Mr. BENNETT. Thank you, Mr. Chairman. I am deeply appreciative of your kind remarks.

The subcommittee which I chair has had very grave concern about the stockpile and has recommended this bill, which has passed the House. We found that there was a strong suspicion, and we received evidence in our hearings, that the stockpile was being misused in budgetary situations. When things looked bad in the budget, there was a tendency for the administration to rush in to dispose of materials, purely to make the budget look good and not for any valid defense or stockpile management purposes.

There was also a strong suspicion that the stockpile was being used to effect changes in market results, to fight inflation, or to have some objective other than the basic legislative criteria relative to having enough in the stockpile to defend ourselves in the case of war, with the result of impairment of the stockpile unless it was more properly handled.

We have found, also, shifting criteria from time to time. For instance, they shifted from a 5-year to a 3-year war, and then to a 1-year war. It was only at the insistence of the subcommittee that they finally went back to the criteria of having a 3-year war.

H.R. 4895 has the very important overall objective of assuring that the stockpile in fact protects the defense interests of our country, the purpose for which it was established. To do this, the control of Congress with respect to the strategic and critical stockpile has been strengthened by this bill. This is accomplished in several ways, and I will enumerate.

First, the bill would require that funds appropriated for the acquisition of strategic and critical materials be specifically authorized by law. This would provide the Congress with an additional means of oversight and control over the acquisition of stockpile materials. In the past, too often the executive branch has purchased materials which later it has asserted to be surplus. While the President would have full power and flexibility to determine the kinds and quantities of materials he would ask Congress to acquire, the Congress would hereafter—after this bill passes—review acquisition requests for need, adequacy, or excessiveness in connection with an annual authorization and appropriations process. Appropriations of funds for other purely administration or management stockpile functions, such as transportation, maintenance, rotation, storage, refining, and processing, would continue to be made under a standing authorization, as is the case under existing law. Since these functions involve day-to-day operations, I believe that the standing authorization process is adequate for these functions.

Second, the bill would establish a separate fund within the Treasury, to be known as the Strategic and Critical Materials Procurement Fund. The source of money for this fund would come from the sale of materials declared excess from the strategic and critical materials stockpile by the Congress. The revenues realized from the sale of the materials, after the date of enactment of this bill, would be covered into the fund and would be available only when authorized and appropriated by Congress for the procurement, transportation, maintenance, rotation, storage, refining, or processing of strategic and critical materials.

By placing these moneys in the fund rather than the General Treasury, to be used for other purposes, the possibility of the stockpile being used for purposes other than originally intended would be entirely eliminated. Also, this would encourage the maintenance of a balanced stockpile, since moneys in the fund can only be used for stockpile purposes. Most important, it will improve management of the stockpile through an assured source of funds for future materials acquisitions.

It is my understanding that the administration will ultimately ask for billions of dollars to be spent in the acquisition of now needed additions to the stockpile and that the cost will exceed the proposed sales.

The only objective of the Strategic and Critical Materials Stockpiling Act was to insure an adequate supply of critical materials for the security of the Nation. This bill, and particularly section 4, is intended to assist materially in meeting that objective.

Third, the bill would establish within the General Services Administration a program to acquire strategic and critical stockpile materials through barter with foreign countries, provide for coordination of

the program by the Administrator of GSA, and require semiannual reports on the operation of this barter program. This is to be included in the semiannual reports already required by Congress under existing law.

This bill would not change any existing law authorizing the acquisition of strategic and critical materials through barter, nor would additional barter authority be created. This is not needed.

Specific authority to engage in barter activities with foreign suppliers is currently contained in three statutory provisions: Public Law 480, which authorizes the Secretary of Agriculture to barter agriculture commodities owned by the Commodity Credit Corporation; the Foreign Assistance Act of 1961, as amended—found in 22 U.S.C. 2423—which authorizes the President to barter defense articles under the Foreign Military Sales Act in exchange for strategic raw materials; and agencies of the Federal Government may use the authority of the Federal Property and Administrative Services Act of 1949 to exchange surplus property for strategic and critical materials.

While the above authority exists in statutes separate from the Strategic and Critical Materials Stockpiling Act, the Congress has not provided a program which aims at encouraging and coordinating use of barter as a device to acquire strategic and critical materials. This bill would provide such a much-needed, coordinated barter program to be administered by the Administrator of General Services.

Fourth, the bill would also make available excess materials in the inventories maintained in the national stockpile, supplemental stockpile, and under the Defense Production Act for transfer, at fair market value, for the purpose of acquiring strategic and critical materials, and for other functions.

This authority currently exists in riders in appropriations laws; for instance, in Public Law 94-363. However, this highly meritorious provision deserves to be incorporated into permanent law. Accordingly, section 3 of the bill will include that provision.

Mr. Chairman, as you know, a full House of Representatives vote on this matter approved this bill, H.R. 4895, by a rollcall vote of 373 to 24. This legislation is long overdue. It would give Congress the grip and handle on the stockpile situation of our country to protect our national defense. I urge your favorable consideration of this bill.

Senator HART. Thank you very much, Congressman Bennett.

If you have the time, I would like to propound a few questions to you.

Mr. BENNETT. Certainly, Senator.

Senator HART. First of all, Congressman, has the Carter administration taken a position on your bill at the present time?

Mr. BENNETT. The Carter administration, through its agencies, has opposed at least the provision relative to the funding. I am seeking to see if it would be willing to go along with the provisions that we have in the bill because I really think it is only the bureaucracy which keeps approval from surfacing.

They say that it would hurt their flexibility, but I disagree with that argument. The primary purpose of the stockpile fund is to reduce the excessive flexibility in the defense stockpile which has existed and which has too often been abused by one administration after another. I do not believe that the moneys received from the stockpile disposals

would be tied up over any length of time, which is another argument that is made. The law requires the President to direct the GSA to make purchases of materials determined to be necessary for the strategic stockpile. The law says that the President "shall"; it does not just say that he "may."

So, I think that if we follow the law, the administration will find that it will in no way tie up any funds, and the funds are actually inadequate to meet the objectives that they have in mind. Separate appropriations would have to make up that deficiency.

Senator HART. Have any of the objections or questions that the administration has raised been of a basic philosophical nature in opposition to your approach?

Mr. BENNETT. No.

Senator HART. Were they more procedural?

Mr. BENNETT. All procedural. The Bureau of the Budget just wants to have more flexibility so that if the budget looks bad, they can dip into the stockpile. We in Congress don't want to do that.

Senator HART. As I understand your approach, you rely very heavily on the barter system. I want to make clear for the record whether your bill envisions any new barter authority, or is it strictly confined to the three existing laws that you mentioned in your statement?

Mr. BENNETT. Confined to existing law, that's right.

Actually, the barter provision came in by discussions which were held on the floor of the House and did not emanate originally from our committee. But they were found to be sound and we think we should pursue that.

Senator HART. Does this approach in your bill envision domestic bartering—for example, bauxite for aluminum, or anything like that?

Mr. BENNETT. It would permit domestic bartering of one item for another—for example, bauxite for aluminum. It could only be bartered if it had been declared surplus by Congress and only after congressional approval.

Senator HART. As to how the system would work, on an international basis would there be strictly country-to-country agreements, or do you envision private middlemen negotiating these arrangements? How would it work?

Mr. BENNETT. From its inception, barter activities were accomplished under contracts signed by the CCC and private U.S. firms based on stockpile needs. Invitations were issued to U.S. companies to submit offers to deliver strategic materials and export agricultural commodities. These offers were reviewed by specialists in GSA and other Government agencies with respect to the offered price of the material, specifications, and related matters. Usually there was considerable negotiations between the CCC and an offeror before a contract was signed.

Materials were delivered by contractors to U.S. ports and transported by GSA to stockpile locations. Contractors received agricultural commodities from CCC inventories and shipped them abroad in accordance with the contract. There is no intention for this legislation to change those procedures because there has been no fault found with them.

Senator HART. Regarding the authorization system envisioned in your bill, as I understand it, you would require some specific authorization of procurement funds. Is that correct?

Mr. BENNETT. Absolutely.

I understand that the administration actually approves that. In fact, that suggestion came from the administration.

Senator HART. I see.

Would this authorization also extend to materials acquired through the barter process?

Mr. BENNETT. Yes, sir, it would.

Senator HART. It would.

Mr. BENNETT. As far as this bill is concerned.

Senator HART. Yes.

Mr. BENNETT. You understand that they could barter for other reasons not connected with this bill, don't you?

Senator HART. Absolutely.

Would you explain why the funds involved do not have a year's duration attached to them? Why are they so-called no-year funds? This is subparagraph 3 on page 3 of your bill. It is in the section where it says, "Funds shall remain available to carry out the purposes for which appropriated, until expended," that is to say, in the future years.

Mr. BENNETT. It is my understanding that in the future an annual materials plan will be submitted to the Congress. Both acquisition and disposals would be included in this annual plan. I do not anticipate the administration requesting authority to dispose of materials in excess of the value of materials to be acquired. Since the receipts from the sales would be placed in the special fund and used in a program each year to place defense materials into the stockpile, there would be absolutely no need for dollars to be tied up in the fund for several years. This would happen only if some future administration would neglect its duty to make the required purchases, that is, those required by law.

Senator HART. I would like to make an observation about the funding mechanism that you have here in light of an experience that I have had on another bill here in the Senate.

Some sponsors attempted an excise tax approach to funding of the mechanisms of some legislation. We met with heavy resistance from many on the Appropriations Committee and the Budget Committee of the Senate on the grounds that with the new budget process, which I believe works a little differently than the earlier one, having separate funds wreaks havoc with the budget process, that if you permit this to happen in one case, then others will argue for it and the result will be separate funds scattered all over the budget over which the Budget Committees and the Appropriations Committees will not have control. That approach on other occasions has met with great resistance over here.

This is not by way of a question so much as it is just the passing along of information about which you may want to think.

Mr. BENNETT. Well, there was some conversation in the House about this, both in the committee, if I remember correctly, and on the floor of the House. But the things that are going to be accomplished by this bill are so wonderfully valuable that even when compared with any frustration of the bureaucracy, the House overwhelmingly decided that this was the thing to do. Also I believe this bill meets with every requirement of the new budget process. This is going to stop the raiding of the stockpile for political and perhaps even worse purposes and that

it would clean up the situation so that it would really be a defense stockpile and not just a manipulative procedure.

Besides that, you have the assertion on the part of all past administrations that there is less money to be obtained by what we have in the stockpile for sale than is required to buy absolutely essential things for our national defense. So, this fund is going to be less than the amount of money that is required to buy the things that need to be bought—there is no doubt about it—by \$1 billion or so. In order to make up the difference we would have to have a straight appropriation. But there is no excessive money here and there should be no tying up. The program should be a coordinated program with the administration. It ought to approximate what it can sell in 1 year and what it can buy in 1 year. It ought to balance it, if it could.

Senator HART. Those are important and, in many respects, persuasive arguments. I guess what I am suggesting is that you might find it to your benefit in promoting this legislation to make those separately and individually to the chairmen of the Appropriations and Budget Committees.

Mr. BENNETT. I will do so. Thank you very much.

In addition to that, I have an active, ongoing input with the administration because I really don't believe the administration really opposes this legislation. Most of the people who come to me from the administration have acknowledged the merit of this bill and say that it is just impossible to turn the bureaucracy around in the Bureau of the Budget. This bureau is not adamant on the matter as far as I know, but it is just a question of getting it processed. As a result, I have asked to see President Carter about it, but he has had a few other things on his mind lately and I have not been able to make an appointment with him yet.

Senator HART. Including the Bureau of the Budget. [General laughter.]

I think you may have already addressed this, but on the question of the fund which, by the way, I see as one of the real problems in moving this through the Senate—what are the chances of building up large surpluses in this fund and carrying over from year to year? I take it from what you have said that they are very slim.

Mr. BENNETT. I do not envision that there would be large surpluses in this fund since acquisitions needed to balance our stockpile would in all probability greatly exceed disposals.

Senator HART. I mentioned in my opening remarks that the Ford administration policy which was premised on a 3-year war planning. What is your general reaction to that policy and those assumptions of a 3-year war?

Mr. BENNETT. I think that insofar as the 3-year war is concerned, the history will show that it was our subcommittee which required that. It fluctuated between two wars—which I always thought was absurd since if you are at war, you are at war—and between 5, 3, and 1 year durations. Finally, when it got down to one they said: Well, you can't acquire it anyway in the last year, so you don't need any stockpile. So, they wound up having no stockpile in some items. So, we required it to go back to the 3-year stockpile and now that is our policy. But it is only our policy because Congress won't let any legislation out unless it has a 3-year war consideration.

Senator HART. So that came from your committee?

Mr. BENNETT. It did.

I agree heartily with that policy. If I were going to move in any direction, I would go back to five. But I think three is probably adequate.

Senator HART. I am sure you are aware of one of the proposals that will be suggested in the American Mining Congress legislation that would make stockpile objectives a function of imports. I think that proposal is essentially embodied in Senator McClure's bill.

What are your opinions of that bill and that approach?

Mr. BENNETT. I believe that bill, S. 1810, introduced by Senator McClure has merit, very considerable merit. However, since my subcommittee has not had an opportunity to receive testimony or discuss the provisions of that bill, I do not believe that I am in a position to make any further comment on its pros and cons. My gut reaction is that it is going in the right direction. But we really have not yet had the question and answer interplay that would lead to being sure that something wasn't being done that should not be done, and vice versa.

Senator HART. You may want to down the road formulate some opinions and reduce them to written form.

Mr. BENNETT. On that?

Senator HART. On that bill. You may or may not. It is up to you.

Mr. BENNETT. Well, I really feel chary of the prerogatives of my committee.

You see, what I have testified to so far is what my committee feels and what the House feels. I feel that if Senator McClure got somebody to cointroduce it on the House side, we could have hearings on it.

Senator HART. I understand.

Congressman, do you have any position on economic stockpiles, as such?

Mr. BENNETT. Well, personally and individually I feel that some economic stockpiles make sense. I don't think they ought to be combined with the defense stockpile because I feel there is a priority that we have to think about. In the first place, if we have not been able by some billions of dollars to have an adequate national defense stockpile, it is obvious that a domestic stockpile would be secondary in importance. That is, if we have not adequately taken care of national defense, and we have not yet, then we are talking about a dream in the future. I feel it would be good to fulfill that dream, but in the priorities of spending money today in the Government, certainly it does not come close to the defense stockpile as to an economic stockpile need.

Senator HART. Do you have any thoughts about how you prevent even defense stockpiles from becoming economic tools, as for stabilizing or depressing a market, or anything like that?

Mr. BENNETT. Well, I think that the GSA has done a magnificent job in that. There has been criticism, but most of the criticism has been something that people apprehended rather than what really transpired.

I don't really know of any abuses that have ever been shown that way. They have tried very, very hard and have through the years been

very fine Government officials. Historically we have had good men in the GSA who have worked on this. I would personally say that there are little grounds for criticism.

Senator HART. Do you think that any future law that we adopt, bills of the sort that you are proposing, should contain restrictions against so-called unduly disrupting the marketplace, or anything like that?

Mr. BENNETT. I think that the law, as it now exists, is adequate. You have to bear in mind that any disposals you make, any bill that you bring up, can have a specific thing in it that slows up the disposal or gives special cautions. But the basic law already requires that caution be taken. But you could, in a special case, either by the report or by actually putting it into the law, say that this is a very sensitive area and we must be very careful in this area. But they are already directed by law to do that.

Senator HART. Do you feel that that law is adequate as it has been administered?

Mr. BENNETT. I do.

I would not suggest changing it.

Senator HART. Congressman, I want to thank you. I think we all owe you a debt for paying attention to this problem.

As I indicated in my opening remarks, the amount of money involved here and the economic and strategic implications of this legislation are, I think, enormous. They are generally hidden from the public view, not by the intent of Congress, but because this is just not a highly dramatic area about which most citizens have knowledge.

I must confess that for my own part, I knew very little about it until I became involved with this subcommittee. The quantities in dollar terms of the materials about which we are talking and the economic and strategic implications are enormous. I think we all agree that if the public can be educated on this issue, it would be extremely beneficial. I think we all owe you a debt for your very considered work in this area and the proposals you have put forward.

We very much appreciate your appearance here before us this morning.

Mr. BENNETT. Thank you very much, Senator. I appreciate very much your being willing to come down early. I know that you did that for me because the House is meeting and I am trying to keep my vote record going. I thank you very, very much for that courtesy.

Senator HART. Not at all.

Mr. BENNETT. I am sincerely convinced that something must be done to protect the national defense stockpile more adequately and see to it that it is not abused, as it has been abused in the past.

Thank you again.

Senator HART. Thank you for coming.

Our next witness is Mr. Ronald Royal, who is the Assistant Director for Civil Preparedness of the Federal Preparedness Agency of the General Services Administration.

Mr. Royal, we welcome you before this subcommittee and look forward to your statement. If you have members of the administration with you whom you wish to introduce, please feel free to do so for the record.

STATEMENT OF RONALD ROYAL, ASSISTANT DIRECTOR FOR CIVIL CRISIS PREPAREDNESS, FEDERAL PREPAREDNESS AGENCY, GENERAL SERVICES ADMINISTRATION; ACCOMPANIED BY EDWARD K. ZABROWSKI, CHIEF, STOCKPILE POLICY AND OBJECTIVES DIVISION, FEDERAL PREPAREDNESS AGENCY, GENERAL SERVICES ADMINISTRATION; PAUL K. KRUEGER, INDUSTRIAL ECONOMIST, STOCKPILE POLICY AND OBJECTIVES DIVISION, FEDERAL PREPAREDNESS AGENCY, GENERAL SERVICES ADMINISTRATION; AND SEBASTIAN J. GIONFRIDDO, INTERNATIONAL ECONOMIST, FEDERAL PREPAREDNESS AGENCY, GENERAL SERVICES ADMINISTRATION

Mr. ROYAL. Thank you very much, Mr. Chairman. I would like to do that.

On my left is Mr. Zabrowski, who is the Chief of the Stockpile Policy and Objectives Division. On his left is Mr. Krueger, who is a senior assistant in that division. On the far left is Mr. Gionfriddo, who is a senior staff member in the Office of Stockpile Disposal and formerly the Acting Assistant Director for that office.

Senator HART. Gentlemen, you are all welcome and we thank you for coming.

Mr. ROYAL. Mr. Chairman, I wish to thank you for the opportunity of appearing before you to testify concerning stockpile policy. To deviate from my prepared statement for just a moment, I noticed that in your opening statement you covered some of the material that we have in our statement. So, if there are any sections that you prefer that I skip over or do more quickly, I would be glad to do so.

Senator HART. Please take your time and use your own discretion. Feel free to summarize wherever you wish to do so.

Mr. ROYAL. Thank you.

The stockpile consists of 93 minerals, metals, and other industrial materials stored at 117 locations in the United States.

The aggregate value of the stockpile as of March, 1977, was \$8.6 billion. Most of the materials were acquired prior to 1959.

The basic law governing the stockpile is the Strategic and Critical Materials Stockpiling Act of 1946, although we also maintain inventories derived from authorities included in the Agricultural Trade Development and Assistance Act of 1954, and the Defense Production Act of 1950.

The purpose of the stockpile is to ensure that our economy will have available the necessary raw materials to support military and basic civilian requirements during periods of war, national emergency, and when required for the common defense.

The requirements for stockpile materials are analyzed on an annual basis. Materials may be added to or deleted from the list and goals may be altered as technological conditions or strategic requirements change.

The general approach is to estimate the difference between the quantities required during wartime and the quantities available. If the supply is inadequate to fill the requirement, the shortfall is the amount which we would propose to stockpile.

In July 1975, President Ford commissioned a major interagency study to review and update stockpile policy. The Federal Preparedness Agency (FPA) of the General Services Administration chaired the study. The study was extensive, reviewing the numerous aspects of stockpiling, including basic concepts and purposes, modeling, data gathering, risk analysis, and policy options. It required approximately 15,000 man-hours and 1 year to complete.

Several important procedural changes were adopted as a result of the study. These include the following:

Materials required during a war period are specifically identified in three groups: Defense, Essential civilian, and General civilian;

The planning factors used to estimate the supply sources and amounts available are different for each requirement group;

Conservative factors are used for the defense portion of the requirement with more moderate factors for the other requirements; and

Separate stockpile estimates are developed for each year of the assumed war for each of the three groups.

These individual estimates are added to obtain a preliminary goal which is subjected to review by a team of interagency experts, modified as required, and finally officially published by the Director of Federal Preparedness.

Another far-reaching result of the interagency study effort was the establishment of "goals" rather than "objectives." I believe that this is a key point.

The study defined the difference between the two terms as follows: Goals, unlike objectives, do not carry with them the connotation that the Federal Government would strive to fill them immediately. This is the case because goals are not viewed as commitments to buy or sell any specific quantities of materials; rather, they are flexible, long-range targets toward which progress will be made and which can be revised to reflect ever-changing technological and strategic circumstances.

As a result of this interagency study, President Ford issued new stockpile policy guidance in August 1976.

Specifically, the policy calls for a materials stockpile capable of supporting U.S. defense and basic civilian requirements during a major war over a 3-year period and assuming prior large-scale industrial mobilization. At the present time, this guidance is being reviewed by the Carter administration.

Senator THURMOND. Mr. Chairman, may I please interrupt for just a moment?

Senator HART. Surely, Senator.

Senator THURMOND. I am presiding over an antitrust subcommittee this morning and have a lot of people waiting over there. I just came over here to let you know that if you need me, I am available. So, if you will excuse me, I will return to that subcommittee.

I also want to say that we are delighted to have Mr. Ronald Royal with us. He is from my home city of Aiken. His father is one of the best businessmen I have ever known, and his mother is a beautiful and lovely woman. All of his sisters are also pretty girls. [General laughter.]

He is a very bright fellow, and I just wanted to say that he comes from a wonderful family. We are all proud of him and are glad that he is in the Carter administration. We wish him good luck.

Mr. ROYAL. May I respond to Senator Thurmond, Mr. Chairman?

Senator HART. Certainly. Indeed, I think it is called for. [General laughter.]

Mr. ROYAL. I would say that I very much appreciate his kind remarks. Indeed, his family and mine have been friends for a number of years. That friendship continues in spite of some political differences that we have. But I do very much appreciate his coming by, and I hope to return the courtesy sometime.

Senator THURMOND. Any way that we can cooperate with you, it would be a pleasure.

Mr. ROYAL. Thank you, sir.

Senator HART. Thank you for coming by, Senator.

Mr. ROYAL. Now that my credentials have been established, I should continue.

I believe I was at the point of saying that the goals, unlike the objectives, are not viewed as commitments to buy or sell any specific quantities of materials. Rather, they are flexible, long-range targets toward which progress will be made and which can be revised to reflect changing technological and strategic circumstances.

The result of the interagency study was that President Ford issued new stockpile policy guidance in August 1976. Specifically, the policy calls for a materials stockpile capable of supporting U.S. defense and basic civilian requirements during a major war over a 3-year period and assuming prior large-scale industrial mobilization. At the present time, this guidance is being reviewed by the Carter administration.

To avoid market disruption, programs of both acquisitions and disposals must be conducted over a number of years. The method of accomplishing this implementation is the annual materials plan, which is a series of 1-year programs of acquisitions and disposals developed each year by an interagency committee.

The committee includes representation from the Departments of Commerce, Defense, Interior, State, and Treasury, and also the Office of Management and Budget, and it is chaired by the Federal Preparedness Agency.

The committee examines the proposed stockpile actions with respect to the following factors: Strategic implications, international economic and political impacts, market impacts, and domestic economic and budgetary impacts. The recommendations in the AMP provide the basis of the General Services Administration's budget submission on stockpile acquisitions and disposals.

Each AMP will contain increments of the goals in a prioritized manner. It is the size of the annual increments, not the goals, that will determine the market impact of stockpile transactions. Each AMP will be carefully planned to avoid unnecessary market impact, which is mandated by the Strategic and Critical Materials Stock Piling Act.

I would like now to comment on S. 1810.

The procedure proposed in this bill would rely upon import dependencies to set the level of stockpile "objectives."

First, let me address the broader question: does S. 1810 establish a better method of estimating what is needed in the stockpile in the case of national emergency or war? We think that it does not. It

does not take into account the many differences between wartime and peacetime economies.

Among the factors omitted are the following:

Shifts to a more materials-intensive industrial base:

Recognition that some foreign sources of supply are accessible in wartime, and for those that are, higher-than-peacetime rates of supply can be expected to prevail;

Changes in civilian consumption patterns away from durables and into nondurables and services;

The potential for substitution; and

Expanded production of materials that would result, in some cases, from increased demand.

The current stockpile procedures take these factors into account.

Earlier, I mentioned the interagency study which reviewed concepts and procedures. One of the alternative concepts evaluated in this study was an "import dependency approach" similar to the system advocated by S. 1810. It was rejected because it did not adequately address the factors outlined above.

In earlier testimony before House and Senate committees, proponents of the import dependency approach have indicated that stockpile calculations need not consider the changing industrial conditions of wartime. They have maintained that while basic materials consumption may be directed to defense applications, the total amount of materials consumed differs little between peace and wartime. We don't agree with that.

However, material requirements under emergency conditions do, indeed, change markedly. For example, copper consumption increased 57 percent during World War II, 35 percent during the Korean conflict, and 25 percent during the Vietnamese conflict. Under our current planning assumptions, we estimate that full mobilization requirements for copper will increase by approximately 39 percent. The goals for copper that would be established by S. 1810 are considerably below the present stockpile goals. We believe that the procedures advocated by that bill would not anticipate the increased requirements associated with a war.

The proponents of S. 1810 believe its methodology would lessen market disruptions. Let me simply say that we do not perceive a procedure in the bill for lessening the market impact of stockpile actions which is comparable to our present policy of preparing annual materials plans. Instead, the cyclical vagaries of peacetime net import levels will determine the swings in the levels of "objectives" for most materials, 5 year base-period averages notwithstanding.

Turning now to the other provisions of S. 1810, which specifically correspond to H.R. 4895 and S. 1198, we do not support those provisions dealing with the establishment of a separate fund since we do not believe such provisions are needed and since they undesirably restrict budget flexibility.

With regard to the barter provisions embodied in S. 1810, and recognizing that the entire stockpile program is still under review, we think that the two following modifications to the bartering language would strengthen the proposed legislation:

First is to provide that any bartering for strategic materials would be in concert with officially announced material goals;

Second is to provide that, notwithstanding any other provisions of law, the value of strategic materials acquired as a result of bartering not be reimbursable.

That concludes my prepared statement, Mr. Chairman.

My colleagues and I will be happy to answer any questions that you may have.

Senator HART. Thank you, Mr. Royal, for appearing here today and for stating the administration's views as they exist on this important question at the present time.

For the record and as background for some further questions, let me ask a few questions about your own involvement in this area.

Would you explain in terms of General Services Administration structure where your office fits in and how it relates to the hierarchy?

Mr. ROYAL. Certainly.

The General Services Administration is split into five major divisions. The Federal Preparedness Agency is one of those divisions. It has a Director and four Assistant Directors. I am one of the Assistant Directors, specifically the Assistant Director for Civil Crisis Preparedness. In my office comes the Division for Stockpile Policy and Objectives.

Senator HART. Do you bring to this task any background that relates to stockpiles and strategic materials of any kind?

Mr. ROYAL. No, sir, I do not—not prior to my appointment to this position.

Senator HART. How long have you held this position?

Mr. ROYAL. Exactly 3 months today.

Senator HART. Based on your opening statement regarding the number of materials and the variety of places of storage and the total value of those, are you personally satisfied that we do, in fact, at the present time possess the quantities and qualities of materials in those stockpiles that are reflected in your records—that is to say, that those materials actually exist in the quantity and quality that are represented to you?

Mr. ROYAL. I am satisfied that substantially they do exist as the records reflect. We know that there are minor discrepancies in terms of exact quantities and in terms of locations. The two tie together in that the records may show that we have a greater amount of certain materials in a certain place than we actually do, and it turns out that a comparable lesser amount is held in another place. So, there are minor discrepancies in those records, but we feel that they are substantially correct. We are also taking action which we hope will clarify and completely straighten out those records so they will accurately reflect what is really there.

Senator HART. Are you satisfied that the chance for a material or substantial discrepancy, particularly on the downside, does not exist?

Mr. ROYAL. I personally am satisfied on that point. Mr. Zabrowski and Mr. Gionfriddo might wish to comment on that.

Mr. ZABROWSKI. Well, I support Mr. Royal's statement in essence.

We may find some surprises as a result of an audit that we have requested to take place during fiscal 1978. But right now we don't think

there are large discrepancies. We are trying to find new procedures to resolve this.

I don't think that there are any gross underages.

Senator HART. What would constitute a surprise?

Mr. ZABROWSKI. Well, looking for 1,000 tons of material and finding that there are indeed 800 or 850.

Senator HART. That would be a big surprise?

Mr. ZABROWSKI. That would be a surprise.

Mr. ROYAL. It would not be a good surprise, but it would be a surprise.

Senator HART. Do you think from your experience that the chances of that are pretty slim?

Mr. ZABROWSKI. I think so.

Most of the problems that we are now aware of have to do with the accounting entries; that is, what we call the record of the inventory. There are some keypunch errors and as a result, when we get some computer runs back, they may show a negative inventory for specific lots. However, we think that the total amounts of materials are correct, though we are not so certain about the location of the materials.

Senator HART. This sounds strangely similar to a nuclear regulatory subcommittee of another committee which I chair. In recent months, substantial amounts of nuclear materials have gotten lost. The question is, are they lost on paper or are they lost in reality. I think from what you are saying that there is the possibility of loss on paper, which does not really, in fact, exist in reality.

Mr. ZABROWSKI. That is what we believe, but as we said, we have requested the GSA auditors to look into this, and they have agreed to look into it in fiscal 1978, so we will know for certain during the coming year.

Senator HART. It is also my understanding that the General Accounting Office may also be doing something about this.

Mr. ZABROWSKI. In the General Accounting Office, one of the regional teams is now in the middle of an audit. I believe their audit will be completed before our people get to it.

Senator HART. Do you have any estimates as to how much it costs to operate and maintain the stockpile every year?

Mr. ROYAL. Yes; we do.

Mr. GIONFRIDDO. In 1976, we estimated it to be about \$17.5 million.

Senator HART. How many people does it take?

Mr. GIONFRIDDO. Well, I can speak for the disposal side. There we have about 55 people and a budget of about \$1.6 million. We would have to provide information for the record on inspection and storage.

Senator HART. Is that the way it is broken down?

Mr. GIONFRIDDO. Yes. My office is responsible for sales, and the Federal Supply Service is in charge of maintaining the stockpile, which entails storage and inspection.

Senator HART. Do you perhaps have a ball-park figure on how many people are involved?

Mr. GIONFRIDDO. Well, we are talking about approximately 100 people in the two operations.

Mr. ZABROWSKI. There are, of course, other specialists involved throughout the Government. For example, the Departments of Com-

merce, Interior, State, and DOD have people who allocate part of their time to stockpile matters.

Mr. ROYAL. For instance, they participate in the formulation of the annual materials plan, and they have people that work on estimating requirements, estimating supplies, and so on. To determine how many man-years each is devoting to it would be a substantial task. Mr. Zabrowski and I were talking about it this morning before we came up, and if we just had to pick a figure out of thin air, we might say 500 man-years. But that would not really be accurate.

Senator HART. We would like to know for the record as specifically as you can how many people there are full time under your operation.

Would you send that to us, please?

Mr. ROYAL. We will send that information to you, Senator.

Senator HART. Fine.

[The information follows:]

FISCAL YEAR 1977

Function		Number of personnel assigned
Washington central office:		
Office of Stockpile Policy and Objectives (FPA).....	Policy.....	19
Office of Stockpile Disposal (FPA).....	Sales.....	57
Property Management (FSS).....	Storage and inspection.....	34
Office of Administration (Office of Finance).....	Inventory and accounts receivable.....	30
Total.....		140
Outside of central office:		
Office of Stockpile Disposal.....	Sales.....	3
Property Management.....	Storage and inspection.....	201
Total.....		204
Grand total.....		344

Other Government agencies having a contributory role in developing stockpile policy and related matters include: Department of Commerce, Department of Defense, Department of Interior, Department of State, Department of Treasury, and Office of Management and Budget.

Question. How much does it cost each year to store and maintain our stockpiles?

Answer:

Cost of operations—nationwide—fiscal year 1976

Office of Property Management, FSS:

Operations.....	\$., 295, 000
SLUC ¹ (5,150,000 square feet).....	7, 640, 000
Disposal handling.....	1, 092, 000
Total.....	16, 027, 000

¹ Standard level user charges.

Senator HART. On general policy, Mr. Royal, would you tell us whether you are convinced that we have sufficient quantities of all of the materials that have been specified for the stockpile necessary to protect our national security?

Mr. ROYAL. No, sir, we do not.

Under the present policy, which is the Ford policy of August 1976, we have large excesses of materials in certain areas and large deficiencies in other areas. Now, we have a moratorium on new stockpile transactions but we do not have any new policy yet. However, we obviously do not have sufficient materials at this time.

Senator HART. Do you know which materials are in insufficient quantities at this time?

Mr. ROYAL. I think I know, but I would prefer to defer to Mr. Zabrowski on this since I am sure that he knows this much better than I do.

Senator HART. By you I mean you collectively.

Mr. ROYAL. Oh, yes. It is included in the Stockpile Report to the Congress, of which I believe you have received copies.

Senator HART. Fine.

When do you expect the Carter administration to complete its study and propose a policy?

Mr. ROYAL. In the very near future.

Senator HART. Is that 3 months, 6, 9, or 12?

Mr. ROYAL. I think your first estimate is much closer than the other two.

Senator HART. Have you been involved in that study?

Mr. ROYAL. Yes, we have. They have asked us for background information, an explanation of the policy as it now stands, and details on how the Interagency Study Committee was conducted in 1975 and 1976. We have provided them with a good deal of information. Of course, it is their job to determine policy, but we have been involved in answering many of their questions as to the present policy.

Senator HART. With the moratorium, I am interested in what effect that has on the activities in the stockpile, particularly those materials whose disposition was previously authorized. Has there been movement in or out of those?

Mr. GIONFRIDDO. Yes. We have maintained an active sales program. Current fiscal year sales total about \$67 million. Available for disposal we have remaining materials valued at about \$800 million worth of materials that could be sold if we had markets.

Senator HART. Under previous authorization?

Mr. GIONFRIDDO. Under previous authorization.

Senator HART. It is my understanding that in the past the General Services Administration has had a loan policy, which I believe they call custodial transfers, between and among various Federal agencies. Could you give use some examples of this practice and details for the record—if not here today—of strategic materials that are on loan from the stockpile?

Mr. KRUEGER. Basically, what we have done in certain circumstances is provide alternate storage locations. We do have 117 around the Nation. If there is, perhaps, a special defense need which is temporary, which is nondestructive, and from which, if necessary, we can get the materials back quickly, we will loan these materials.

A typical example might be the loan of some lead to the Navy to use as ship ballast. There is also a loan of some platinum to the Air Force that is part of a revolving pool used in aircraft engines. In each case the receiving agency pays for all the transportation involved and all the maintenance and has to agree to return it on demand and in the same form and quality in which it was received.

Senator HART. I am interested in the word "quickly" that you used. If the lead is in ballast in ships at sea and you need it back, what would be the turnover time in getting it back? I might ask the same question regarding other materials in airplane engines.

Mr. KRUEGER. In the case of the ships, these have been typically research vessels which have been involved in coastal research rather than sailing around the world. In the case of the Air Force program, the Air Force uses platinum in spark plugs and reclaims all its spark plugs. This is just part of a revolving pool. They need a certain amount of platinum to keep the program going.

Mr. ZABROWSKI. Senator, for the record I would like to correct the use of the word "loan." We refer to these as "custodial transfers" because the Strategic and Critical Materials Stockpiling Act authorizes the President to designate storage sites for stockpiled materials. So we don't really "loan" these materials in the legalistic sense. They are transfers of storage locations.

Senator HART. But the materials are actually used, put to use. It is not just a question of moving them from one location to another. They are put into machinery and other things.

Mr. ZABROWSKI. That is correct, but the title does not transfer, as might be the case in a loan.

Senator HART. Yes, but I am not so concerned about that as I am about if you need it really fast, how fast can you get it back.

Mr. ZABROWSKI. Well, we try to pay close attention to that.

Mr. ROYAL. Legally, they are just stored in a new place, like a Navy ship.

Senator HART. It is not the legal problem which concerns me, but rather the practical problem of getting your hands on it if it is needed fast.

Mr. KRUEGER. There is something else we should mention here. Typically these custodial transfers involve materials which are excess to the current stockpile objectives. For instance, at the time of the loan of the lead we had 500,000 tons of excess lead.

Senator HART. What can you tell me about iridium, which I understand is rather heavily loaned out?

Mr. KRUEGER. Some material was loaned to ERDA, and they are presently in the process of repaying us by transferring or moving the material back to its original storage locations.

Senator HART. Do you have any guidelines as to what percent of the stockpile you can loan out of any given material? Is it 50 percent, 75 percent, 90 percent?

Mr. KRUEGER. We have tried to restrict these loans to materials which at the time of the transfer were in excess of the current stockpile goals.

Mr. ROYAL. There are no specific guidelines per se written down.

Senator HART. So, there is nothing to prevent you from going below, as it were, that current objective. If you wanted to loan down to or substantially below the current objectives, you could.

Mr. ROYAL. No, sir, we wouldn't. Well, I really don't know the answer to that question. But it occurs to me that we would be violating NSC policy if we had clear guidance as to what the objectives were.

Mr. ZABROWSKI. I think we could, but I don't think we would.

Mr. GIONFRIDDO. I don't think we would go down into the goal or into the objective. I know of no occasion where we have.

Senator HART. The reason I mention the iridium is that it is our understanding that you are substantially below the goal on that.

Mr. GIONFRIDDO. At the present time.

Senator HART. So, already you have done what you say you would not do.

Mr. GIONFRIDDO. Well, I believe at the time that was made—wasn't that several years ago—the transfer was probably excess to the objective requirement.

Mr. KRUEGER. At the time the transfer was made it was excess.

Senator HART. So, you can be loaned out heavily, and with a goal or objective change you can get caught with a deficit.

You may want to consider that and let us know for the record what your policy is going to be.

[The information follows:]

The practice of custodial transfers was developed because it was expected to result in positive benefits to the Nation with no or very little risk to national security. In general, we believe the objectives of the program have been met satisfactorily. In recent years there has been considerable tightening of the policies that determine whether a request for a transfer will be granted. Specifically, when the materials are clearly obsolete for national defense purpose or excess to the goals of the stockpile program, transfers may be made directly to other government agencies pending sale of the materials. Transfers are made indirectly to agencies' contractors only if the agency agrees to assume full and complete liability for the material and also agrees to other terms of the transfer. It is our general policy to make custodial transfers only when the material is in excess of the stockpile goals and to require prompt return of materials at the end of the transfer period, or on demand by FPA.

Exceptions to this policy are possible if there is an urgent need, if the material is readily recallable, and if the amounts involved are relatively small. This was the case, for example, with the transfer of 110 short tons of lead to the U.S. Geological Survey (see attached table): U.S. Geological Survey wanted the lead to avoid overencumbering a limited research budget, indicated that the ship using it would remain close to shore, and that the material could be recalled if needed for an emergency. In view of these facts, and also because our lead goal is entirely for the general civilian sector of the economy, the Director of the Federal Preparedness Agency granted an exception to policy and authorized the transfer.

In addition to the criteria just mentioned, other criteria are applied for materials whose inventory levels are at or near their respective goal levels:

Is the material returnable within the time frame necessary to meet a national defense emergency?

Would the transfer disperse our stockpile to such an extent that it would adversely affect the use of the materials during a national emergency?

Is the request a request of "convenience" or can the demand be readily met in the current market place at a reasonable price and with reasonable efficiency?

Is the material requested currently available for disposal from the stockpile? (If so, the requesting agency first would be required to purchase the excess).

Will savings to the taxpayer likely result from the transfer?

The material ordinarily must meet the grade set forth in the National Stockpile Purchase Specification at the time of the return.

Is there an indirect contribution to the energy supply problem at no cost to the Government?

When a goal is changed for a material which was previously transferred under the "custodial transfer" program, a deficit in the stockpiled amount could conceivably occur. For this reason, custodial transfers are now only made for relatively short periods and with the additional requirement that the material remain readily available for return upon demand (as was the case for the lead transfer to U.S. Geological Survey). Thus, very little risk to the national security is incurred with the current policies used for custodial transfers. As shown in the attached table only relatively small amounts will be out on transfer after 1978.

STOCKPILE MATERIALS STORED WITH OTHER GOVERNMENT AGENCIES AS OF JUNE 30, 1977

Commodity	Name of agency and location	Effective date of loan	Quantity	Date to be returned	Status of inventory at time of transfer		
					Unit	Amount ¹	Stockpile goal
Iridium.....	Geological Survey, Department of the Interior, Reston, Va.....	Apr. 2, 1975	20 troy oz.....	Dec. 31, 1977	TrOz	17,002	1,800
Iridium.....	U.S. Energy Research and Development Administration, Washington, D.C.....	Nov. 22, 1972	7,000 troy oz.....	June 30, 1977 (2,000) ² 30, 1978 (5,000).	TrOz	17,176	17,000
Lead.....	Defense Supply Agency Defense Depot Mechanicsburg, Mechanicsburg, Pa.....	Nov. 9, 1972	225,000 lbs.....	Indefinite.....	ST	1,109,500	530,000
Lead.....	Military Sealift Command, Washington, D.C.....	Dec. 20, 1974	448 short tons.....	Dec. 20, 1980.....	ST	686,205	65,100
Lead.....	Military Sealift Command, Washington, D.C.....	Jan. 8, 1976	891 short tons.....	Jan. 7, 1982.....	ST	601,619	65,100
Lead.....	Naval Sea Systems Command, Department of the Navy, Washington, D.C.....	July 1, 1975	2,205 short tons.....	July 1, 1985.....	ST	601,716	65,100
Lead.....	The Naval Underwater Systems Center, New London Laboratory, New London, Conn.....	Apr. 22, 1974	75 tons.....	Oct. 22, 1978.....	ST	829,063	65,100
Lead.....	U.S. Geological Survey, Menlo Park, Calif.....	Feb. 4, 1977	110 short tons.....	Feb. 4, 1980 ³	ST	601,060	865,000
Palladium.....	Department of the Air Force, Kelly Air Force Base, Tex.....	Sept. 1, 1974	9,999.5 troy oz.....	Aug. 31, 1976.....	TrOz	1,254,994	328,500
Platinum.....	U.S. Army Electronics Command, Department of the Army, Fort Belvoir, Va.....	Oct. 3, 1975	2,138,601 troy oz.....	Dec. 31, 1979.....	TrOz	452,645	187,500
Quartz.....	Smithsonian Institution, Washington, D.C.....	Mar. 5, 1965	140.6 lbs.....	Indefinite.....	LB	5,702,365	650,000
Zinc.....	Smithsonian Institution, Cambridge, Mass.....	Feb. 8, 1963	10,935 lbs.....	Sept. 30, 1977.....	ST	1,579,907	178,000

¹ Figures from semiannual report prior to effective date of loan.² Preparations underway for return of 2,000 troy oz. Waiver of spec. for 1,000 troy oz has been requested by ERDA.³ Currently in process of returning 53 short tons.

Senator HART. Do you have any opinion on the Ford stockpile policy—specifically or in general?

Mr. ROYAL. No, sir, I personally do not.

We feel the policy as to stockpile goals is the province of the President and the National Security Council. Basically, our job is to implement that policy. The present NSC review may reconfirm the Ford policy, in which case we would implement it in the manner that I have outlined in the statement. If the NSC review were to establish a new policy, then I feel it would be our job to implement it.

The determination of what is necessary in the stockpile I feel is a policy decision for the President and the National Security Council.

Senator HART. We have two or three bills before us, as you know, and you have commented on them briefly in your opening remarks. I would like to sharpen those a little, if I can.

Could you specifically state again or expand on your remarks as to why you oppose the Bennett proposal, the House bill?

Mr. ROYAL. Yes, sir.

We don't feel that the bill is needed in that even with the fund that he proposes you would go through the same appropriations process for acquisition of materials that you presently do in the Congress. In addition, the downside is that we understand it does restrict the President's budget flexibility.

Senator HART. He is attempting to achieve a goal that I, in my short experience in this area, feel very strongly about, and that is the protection against the use of the stockpile for economic domestic and even economic international purposes. It should be a national security system and not market system.

Mr. ROYAL. We agree with you entirely in that.

Senator HART. You agree with that objective?

Mr. ROYAL. We agree with that objective?

Senator HART. You would agree that you are being consulted by the Carter administration in establishing its policy, would you not? Are you not stating that opinion?

Mr. ROYAL. Very much so, Senator.

I might go a step further than that, Senator, perhaps unwisely so. The Bennett bill we feel would facilitate the implementation of stockpile policy and would obviously, we think, be of some help to the continuing program of acquisitions and disposals as dictated by any policy. We feel it has that advantage. At the same time it does have the disadvantages that the administration has pointed out. Essentially this is an administration decision and the disadvantages may outweigh the advantages. But there are advantages purely in the parochial sense of administering the stockpile that the Bennett bill does not have.

Senator HART. I appreciate your comments.

Do you have any idea when the last time was that some strategic material was acquired through the barter process?

Mr. ROYAL. Yes, sir. It was 1971.

Senator HART. Do you know what that was?

Mr. ROYAL. I believe it was titanium, but I'm not sure.

Senator HART. You can provide the specifics on that for the record, if you wish.

Mr. ROYAL. Very well, Senator.

[The information follows:]

The last three strategic material barter contracts under the authority of the Agricultural Trade Development and Assistance Act of 1954, as amended, and the Commodity Credit Corporation Charter Act, as amended, were signed during the period January-June 1967. Two of these contracts provided for delivery of selenium and the third for rutile, a titanium-bearing ore. The final shipment of materials under these contracts was received by December, 1971. The following table shows the materials transferred to the stockpile under the barter program from 1941 to 1971:

Materials received under the barter program and transferred to Government stockpiles, July 1, 1949 through December 31, 1971¹

Material	Value (In thousands)
Aluminum oxide, abrasive grain	\$15,112
Aluminum oxide, fused, crude	20,570
Antimony	16,169
Asbestos, amosite	12,573
Asbestos, chrysotile	2,412
Asbestos, crocidolite	12,287
Bauxite	151,299
Beryl ore	2,179
Beryl concentrates	2,156
Beryllium copper master alloy	24,883
Beryllium metal billets	25,671
Bismuth	5,410
Boron minerals, Turkish	4,070
Cadmium	12,160
Celestite	840
Chromite, chemical grade	11,427
Chromite, metallurgical grade	27,919
Chromite, refractory grade	4,625
Chromium metal, electrolytic	5,474
Chromium metal, exothermic	9,046
Cobalt	4,609
Columbium	552
Copper	13,943
Cotton, long staple	28,001
Diamond dies	510
Diamonds, industrial: crushing bort	54,903
Diamonds, industrial: stones	198,791
Ferrochrome	272,672
Ferrochrome-silicon	18,335
Ferromanganese	180,382
Fluorspar	22,050
Graphite	513
Iodine, crude	8,060
Lead	78,882
Manganese dioxide, battery grade	18,038
Manganese ore, chemical grade	13,493
Manganese ore, metallurgical grade	87,369
Manganese metal, electrolytic	8,710
Mercury	24,675
Mica, muscovite	13,762
Mica, phlogopite	2,376
Palladium	17,478
Platinum	10,874
Quartz crystals	3,030
Rare earths	2,722
Ruthenium	532
Rutile	2,692

Materials received under the barter program and transferred to Government stockpiles, July 1, 1949 through December 31, 1971¹—Continued

Material	Value (In thousands)
Selenium-----	1, 941
Silicon carbide-----	27, 573
Silk, raw-----	1, 439
Silk, bisu and/or keba lap waste-----	271
Thorium nitrate-----	16, 896
Tin-----	16, 907
Titanium sponge-----	37, 263
Tungsten carbide powder-----	2, 911
Waterfowl feathers and down-----	2, 670
Zinc-----	86, 320
Total-----	1, 648, 367

¹ There were no strategic material deliveries under the barter program after this date.

Senator HART. Do you think the barter process is a viable option for future acquisitions?

Mr. ROYAL. Yes, we do. As I indicated in my statement, we encourage the emphasis on barter in S. 1810.

Senator HART. Are you aware of an Executive order in the last few years, specifically in 1973, prohibiting barter?

Mr. ROYAL. Yes, sir.

The program was suspended at that time for basically two reasons, as I understand it. The primary commodities that had been used to a great extent in the barter program no longer existed in the surpluses that they had existed during the period of the program's activity which was basically 1950 or 1951 to 1969. Therefore we did not have the materials on hand to barter with any more. Then, in 1973 there was a significant change in what was then known as the objective in the stockpile which did make a number of materials excess at that time. That particular policy was reversed in August, 1976.

Senator HART. On the McClure bill, which is another approach, you have stated some of your objections to it. Would you please, for the record, restate those in summary form. What do you feel are the principal problems with that approach?

Mr. ROYAL. Basically we feel that calculating your stockpile goals entirely on the basis of historical peacetime import dependency does not assure us of having the materials on hand that are needed in times of national emergency or war. As I mentioned in the statement, the argument has been made that although you may have a redirection of raw materials in an emergency or war situation, you don't significantly change the amount of those materials that would be used at that time. But indeed, as I also mentioned in the statement, we don't find that to be historically accurate. I think I mentioned copper specifically. I don't recall the exact estimates, but in World War II I believe I stated that the consumption of copper increased in this country by 57 percent. In the Korean conflict it increased by about 35 percent or something like that. I would have to refer to my paper for more accurate figures.

Basically, though, in each of the major conflicts that we have had over the last 40 years—World War II, the Korean conflict, and the Vietnamese conflict—there has been a substantial increase in the use of copper in the economy. We think that that negates the argument that indeed the economy does not use more of the raw materials, that essentially it uses the same amount that it has been using but merely diverts them and uses them in different ways. We simply find that that is not historically true, especially in the case of copper.

If you would like for the record we could research this and try to provide some additional examples.

Senator HART. I think that would be helpful to us if it does not involve too much effort.

Mr. ROYAL. Not at all, Senator. We can do that without too much problem.

[The information follows:]

Many materials show increased wartime consumption. The data for two of them are shown below:

	1st yr	2d yr	3d yr
Aluminum:			
World War II (1940=100).....	209	324	373
Korean War (1949=100).....	149	151	166
Vietnam War (1964=100).....	128	126	142
Cobalt:			
World War II (1940=100).....	123	107	112
Korean War (1949=100).....	176	211	229
Vietnam War (1964=100).....	133	131	122

Senator HART. Do you have any idea of the differences in stockpile goals or objectives based on the Ford policy as opposed to the McClure approach?

Mr. ROYAL. Yes, we do, but I would prefer to provide those for the record rather than try to enumerate them now, if that is with your permission.

Senator HART. If you would, please. That would be fine.

[The information follows:]

FPA's policy in general is to not attempt to place a dollar value on stockpile goals, because the long acquisition times involved with restructuring the stockpile, combined with changes in technology and international conditions, make accurate predictions of both the values and quantities required in the distant future an uncertain venture. Three broad classes of import-dependent materials (A, B, and C), are defined in S. 1810. FPA defined the import dependencies of the three classes to be:

Class:	Import dependency (percent)
A	60-100
B	20-59
C	less than 20

The calculational procedures set out in S. 1810 then were applied to the data for all stockpile materials using August 25, 1977 prices. The values of the respective stockpiles are: S. 1810, \$16.9 billion; FPA, \$11.6 billion.

Thus, statements made by proponents of S. 1810 that stockpile goals estimated by import dependency procedures would be less costly are not supported by the figures.

The following table shows the differences in stockpile goals or objectives based on the present FPA policy and those recommended in the S. 1810 bill:

1976-77 OBJECTIVE COMPARISONS

[Dollar amounts in millions]

Commodity	FPA quantity	FPA cost	Quantity S. 1810	Cost S. 1810
Aluminum oxide, fused crude (short tons).....	147,615	\$26.6	432,441	\$87.3
Aluminum oxide, abrasive grain (short tons).....	75,000	23.2	0	0
Antimony (short tons).....	20,130	75.3	44,594	166.8
Asbestos, amosite (short tons).....	26,291	9.0	27,420	9.4
Asbestos, chrysotile (short tons).....	0	0	60,420	29.1
Bauxite, metal Jamaica (thousand long dry tons).....	523	12.6	26,640	643.4
Bauxite, metal Surinam (thousand long dry tons).....	0	0	12,420	358.9
Alumina (thousand short tons).....	11,532	1,499.2	4,688	609.4
Aluminum (thousand short tons).....	0	0	4,479	507.7
Bauxite, refractory (thousand long dry tons).....	2,083	262.5	901	113.5
Beryl ore (short tons) 11 percent BEO concentrates.....	0	0	4,750	2.1
Beryllium copper master alloy (short tons).....	16,710	102.1	0	0
Beryllium metal (short tons).....	895	134.2	0	0
Bismuth (thousand pounds).....	771	3.9	5,474	27.4
Cadmium (thousand pounds).....	24,701	74.1	10,322	31.0
Castor oil, sebacic acid (thousand pounds).....	0	0	329,401	418.3
Chromite, chemical (thousand short tons).....	734	46.4	1,120	70.8
Chromite, metallurgical, ore (thousand short tons gross weight).....	2,550	334.7	2,344	307.6
Chromium, ferro, high carbon (thousand short tons).....	236	140.0	270	160.2
Chromium, ferro, low carbon (thousand short tons).....	124	145.5	112	131.4
Chromium, ferro, silicon (thousand short tons).....	69	40.6	11	6.5
Chromium, metal (thousand short tons).....	10	52.6	9	47.3
Chromite, refractory (thousand short tons gross weight).....	642	54.0	1,484	124.9
Cobalt (thousand pounds) contained.....	85,415	512.5	59,049	354.3
Columbium concentrates, contained CB (thousand pounds).....	3,131	9.2	8,676	25.6
Columbium carbide powder, contained CB (thousand pounds).....	0	0	0	0
Columbium, ferro, contained CB (thousand pounds).....	0	0	6,924	35.5
Columbium, metal, contained CB (thousand pounds).....	0	0	0	0
Copper (thousand short tons).....	1,299	1,575.0	175	212.2
Cordage fibers, abaca (million pounds).....	24	8.4	212	74.2
Cordage fibers, sisal (million pounds).....	114	31.0	996	270.9
Diamond dies, small (number).....	0	0	1,553	.1
Diamond, industrial bort (thousand carats).....	14,974	34.9	339	.8
Diamond, industrial stone (thousand carat).....	5,559	46.9	9,286	78.3
Feathers and down (thousand pounds).....	6,494	52.0	22,620	181.0
Fluorspar, acid grade (thousand short tons).....	1,594	167.4	2,259	237.2
Fluorspar, metallurgical (thousand short tons).....	1,914	166.5	1,326	115.4
Graphite, natural, Ceylon (short tons).....	6,271	2.6	6,897	2.9
Graphite, natural, Malagasy (short tons).....	20,472	11.5	19,332	10.8
Graphite, other (short tons).....	34,748	6.3	167,247	30.4
Iodine (thousand pounds).....	3,333	7.7	19,251	44.5
Jewel bearings (thousands of units).....	224,623	157.2	202,397	141.7
Lead (thousand short tons).....	865	536.3	292	181.0
Manganese, battery natural (short tons).....	12,736	1.6	0	0
Manganese, battery, synthetic dioxide (short tons).....	19,105	8.6	14,748	6.6
Manganese ore, chemical (short tons).....	247,136	16.1	107,713	7.0
Manganese ore, metallurgical (thousand short tons).....	2,052	131.0	6,066	387.3
Manganese, ferro, high carbon (thousand short tons).....	439	156.6	962	343.1
Manganese, ferro, low carbon (thousand short tons).....	0	0	0	0
Manganese, ferro, medium carbon (thousand short tons).....	99	67.2	27	18.3
Manganese, ferro silicon (thousand short tons).....	81	27.1	118	39.5
Manganese metal, electrolytic (thousand short tons).....	15	17.4	2	2.3
Mercury (76 pound flask).....	54,004	6.6	1,338,666	164.0
Mica, muscovite block (thousand pounds).....	6,188	43.3	7,920	55.4
Mica, muscovite film, 1 and 2 quality (thousand pounds).....	90	1.1	247	3.0
Mica, muscovite splitting (thousand pounds).....	12,631	6.3	20,600	10.3
Mica, phlogopite block (pounds).....	206,064	.4	265,737	.6
Mica, phlogopite splitting (thousand pounds).....	932	.8	1,151	1.0
Molybdenum disulphide (thousand pounds) contained molybdenum.....	0	0	0	0
Molybdenum ferro (thousand pounds) contained molybdenum.....	0	0	0	0
Nickel (short tons) contained.....	204,335	984.9	468,000	2,255.8
Opium, gum (pounds).....	0	0	0	0
Opium, salt (pounds).....	75,000	40.6	1,736,000	938.7
Platinum group, iridium (troy ounces).....	97,761	29.8	68,924	21.0
Platinum group, palladium (thousand troy ounces).....	2,450	.1	2,116	.1
Platinum group, platinum (thousand troy ounces).....	1,314	.2	1,605	.3
Pyrethrum (pounds).....	377,851	4.6	2,061,000	25.2
Quartz crystals (thousand pounds).....	0	0	1,536	9.2
Quinidine (thousand avoirdupois ounces).....	6,841	46.7	10,029	68.5
Quinine (thousand avoirdupois ounces).....	3,045	14.3	5,461	25.7
Rubber (long tons).....	513,134	477.0	1,977,000	1,837.8
Rutile (short tons).....	173,928	52.2	690,000	207.0

1976-77 OBJECTIVE COMPARISONS—Continued

[Dollar amounts in millions]

Commodity	FPA quantity	FPA cost	Quantity S. 1810	Cost S. 1810
Sapphire and ruby (thousand carats).....	0	0	0	0
Shellac (thousand pounds).....	8,529	14.1	24,030	39.6
Silicon carbide, crude (short tons).....	306,628	87.4	222,190	63.4
Silver (thousand troy ounces).....	0	0	192,000	841.9
Talc, steatite block and lump (short tons).....	104	0	56	0
Tantalum minerals, contained TA (thousand pounds).....	5,452	161.4	3,885	115.0
Tantalum carbide powder, contained TA (thousand pounds).....	889	36.5	0	0
Tantalum metal, contained TA (thousand pounds).....	1,650	79.2	0	0
Thorium nitrate (tons of thorium).....	418	1.9	126	.6
Tin (long tons).....	32,499	376.9	168,000	1,948.2
Titanium sponge (short tons).....	131,503	703.5	1,418	7.6
Tungsten ores and concentrates (thousand pounds) contained.....	8,823	86.3	30,048	293.9
Tungsten carbide powder (thousand pounds) contained.....	12,845	208.2	0	0
Tungsten, ferro (thousand pounds) contained.....	17,769	226.6	1,614	20.6
Tungsten, metal powder (thousand pounds) contained.....	3,290	45.7	0	0
Vanadium ferro (short tons).....	10,095	113.1	12,375	138.6
Vanadium pentoxide (short tons).....	2,576	25.3	0	0
Vegetable tannin, chestnut (long tons).....	6,942	4.0	16,044	9.3
Vegetable tannin, quebracho (long tons).....	37,998	20.2	34,015	18.1
Vegetable tannin, wattle (long tons).....	20,208	10.4	22,173	11.4
Zinc (thousand short tons).....	1,313	892.8	1,634	1,111.1
Total.....		11,590.1		16,896.

Senator HART. I think the attractiveness of the McClure bill is its simplicity. There would be no question as to what the stockpile objectives were if this bill were adopted and the constant change in objectives that has been the practice in the past would be stopped, I think, under this bill. It provides for flexibility in the objective setting and some commodities require special handling. I think, even more important, it gives Congress an oversight role in setting stockpile objectives which, of course, from our point of view, is very desirable. I would encourage you to take another look at that proposal. Personally I don't have any views on it one way or the other at the present time except for those that I have just stated.

Would you provide for our record at an early time any additional comments or views on that bill that you might come up with, please?

Mr. ROYAL. I would be happy to do that, Senator.

[The information follows:]

The following analyses and comments on S. 1810 are submitted to clarify the major aspects of FPA's objections to the stockpile goal-setting procedures recommended in S. 1810.

INTRODUCTION

S. 1810 proposes that stockpile goals be calculated on the basis of historical peacetime import dependencies. Proponents of this bill cite the simplicity of the calculations, the long term stability of stockpile goals, and the fixed nature of the planning assumptions as some of the particular advantages of this approach. While these characteristics are perhaps desirable a more fundamental question should be asked before adopting an import dependency approach. That is: will this approach adequately provide for the national security in the manner intended by the Strategic and Critical Materials Stockpiling Act? We think not.

The import dependency approach considers only one half of the picture—the supply of industrial raw materials. No consideration is given to the levels and shifts in the patterns of the consumption of raw materials in wartime. Furthermore, the system assumes that the foreign supply of class A materials will be completely unavailable; that the foreign supply of class B materials will be reduced by 66 percent; and that the foreign supply of class C materials will be

reduced by 33 percent. These assumptions are derived from how much the United States produces of each material rather than on the location or characteristics of the supplier nations. In addition, the method makes no distinction among secure sources of supply (Canada and Mexico), relatively secure sources of supply (in general, the Western Hemisphere) and other sources of supply.

While these supply side factors are important deficiencies that may jeopardize the national security, FPA believes the most serious deficiency is ignoring the changing levels and patterns of raw material consumptions occasioned by war time conditions. It is easiest to illustrate these deficiencies by using the technique suggested by S. 1810 and observing the consequences.

A. Steel industry

The steel industry is the keystone of America's economy in both peace and war. If we cannot stockpile adequate raw materials for this industry, the entire defense effort is seriously impacted. For the years 1972 through 1976, steel production averaged 135 million tons per year and the U.S. imported sufficient quantities of chromium, manganese, tungsten, tantalum, etc., to support this level of production. Accordingly, if S. 1810 were adopted, the stockpile would be based upon 1, 2, or 3 years of imports required for the production of 135 million tons of steel. However, this does not represent the true requirements of the steel industry. By 1980, the United States will have the capacity to produce 175 million tons of steel. Therefore, by following the import dependency approach, we could be severely understocked in key materials required for a viable defense effort.

The following table illustrates the problems:

Material	FPA goal	S. 1810 goal
Chromium (family) (thousand short tons, ore equivalent)	3, 584	3, 338
Cobalt (thousand pounds)	85, 415	54, 435
Columbium (family) (thousand pounds contained)	3, 131	16, 777
Metallurgical fluorspar (thousand short tons)	1, 914	1, 275
Malaeasy graphite (short tons)	20, 472	19, 332
Metallurgical manganese (family) (thousand short tons, ore equivalent)	3, 312	7, 770
Nickel (short tons)	204	465
Tantalum (family) (thousand pounds contained)	8, 433	3, 885
Tungsten (family) (thousand pounds contained)	47, 681	15, 294
Vanadium (family) (short tons contained)	12, 671	12, 375

For the three materials (columbium, manganese, and nickel) for which the S. 1810 goals exceed the FPA goal, substantial quantities are imported from reliable Western Hemispheric sources.

Another key industry during wartime is the machine tool industry. This industry is well known for its boom and bust nature in response to lessened and heightened business activity. Accordingly, S. 1810 goals underestimate wartime needs. The goals for materials related to the machine tool industry are shown below:

Material	FPA goal	S. 1810 goal
Cobalt (thousand pounds)	85, 415	59, 049
Silicon carbide (short tons)	306, 628	222, 190
Tantalum carbide (short tons)	889	0
Tungsten carbide (thousand pounds)	12, 845	0

C. Defense materials

For some materials the principal consumption is directly related to defense needs. The best examples are titanium and beryllium. Any major increase in defense activity causes a substantial increase in material needs. This is illustrated in the following table:

Material	FPA goal	S. 1810 goal
Beryllium (family) (short tons)	59, 662	4, 750
Titanium (short tons)	131, 503	1, 418

D. Considerations of substitution and conservation

Another problem with the method proposed by S. 1810, is that it ignores the savings that can be achieved through conservation and substitution. Thus, some S. 1810 goals are larger than necessary. While this does not directly impact the defense effort, it is an unnecessary extravagance and dissipates stockpiling outlays that would better be focussed elsewhere. The following table illustrates this for selected materials:

Material	FPA goal	S. 1810 goal
Castor oil (thousand pounds).....	0	329,400
Abaca cordage fiber (million pounds).....	24	212
Sisal cordage fiber (million pounds).....	114	996
Feathers and down (thousand pounds).....	6,494	22,620
Graphite, other (short tons).....	34,748	167,247
Opium (pounds).....	75,000	1,736,070
Pyrethrum (pounds).....	377,851	2,061,000
Quartz crystals (thousand pounds).....	0	1,536
Quinidine (thousand average ounces).....	6,841	10,029
Quinine (thousand average ounces).....	3,045	5,461
Rubber (long tons).....	513,134	1,977,000
Rutile (short tons).....	173,928	690,000
Shellac (thousand pounds).....	8,529	24,035
Silver (thousand triple ounces).....	0	192,000

For most of the materials in this list, synthetic substitutes are available and can be used effectively in many applications. For some materials, a reduction of nonessential consumption can achieve substantial savings. For example, a substantial portion of silver consumption is devoted to jewelry, silverware and other luxury items (74 percent), while the largest consumer of cordage fiber is specialty paper products, including tea bags and disposable diapers.

E. Historical examples

As illustrated above S. 1810 goals would not be adequate to protect the national security needs of the country during a major wartime emergency. For two materials, copper and mercury, it can be shown that S. 1810 goals would not have been sufficient during conditions significantly less intense than those contemplated for stockpiling purposes.

In 1956 President Eisenhower authorized the release of 176,000 flasks of mercury to the Atomic Energy Commission (now ERDA) for use in special weapons development. Mercury in these amounts was simply not available on world markets at that time and could only be procured from the stockpile. If the methods of S. 1810 were in effect at that time the stockpile would have contained 102,000 flasks of mercury.

In the case of copper during 1965 and 1966, over 550 thousand short tons of the material was released to Defense contractors by President Johnson in order to meet the increased needs of the Vietnamese conflict. Had FPA been employing the rules of S. 1810 during that time the stockpile would have contained less than 175 thousand tons of copper.

It should be noted that in both cases there was no restriction in the normal flow of imports; rather peace time import levels were inadequate to meet urgent defense needs.

F. Simplicity and stability of goals

In the previous sections, we analyzed the adequacy of S. 1810 goals in meeting national security needs and found that for many materials stockpile goals based on this methodology to be insufficient. This section addresses the ability of S. 1810 goals to meet the stated objectives of simplicity and stability of stockpile goals.

S. 1810 provides for the administration to recommend alternative goals if they believe the S. 1810 goal to be inadequate. Presumably, alternate goals would be adopted for at least all the materials cited in the first section. This would lead to a hodgepodge of goals, some established using the existing FPA methodology, some using import dependencies. Simplicity would not be achieved in this fashion.

While the existing FPA methodology cannot be described as simple, it is an unbiased, highly-rational analytical technique endorsed by raw material experts in the interagency community. Furthermore, it has undergone the thorough scrutiny of a special task force established by the Institute of Defense Analysis. In a review of the methodology published in *Metals Week*, a respected industry

trade publication, it was stated that "the modeling done by FPA [is] . . . more advanced than that generally found in either industry or other government agencies."

In order to assess the stability of S. 1810 stockpile goals relative to actual FPA goals, the goals for 15 important materials were calculated for the period 1944 to 1976. For each of the goals, the coefficient of variation, a statistical measure of relative stability, was calculated; the number of times a material changed import classes and the number of times the stockpile goal for each material changed, were counted. These results are summarized in the following table:

Material	Coefficient of variation		Class changes	Goal changes	
	FPA	S. 1810		FPA	S. 1810
Aluminum family	0.83	0.89	1	13	22
Chromium family	.49	.44	2	12	18
Cobalt	.69	.62	2	10	18
Copper	.71	.90	1	10	20
Acid grade fluorspar	.75	1.03	4	8	26
Metallurgical grade fluorspar	.68	.88	2	8	14
Lead	.63	.23	3	8	13
Manganese family	.34	.23	0	9	13
Nickel	.90	.26	2	9	14
Rubber	.76	.27	2	11	7
Silver	.64	.55	4	4	9
Tin	.38	.24	4	12	12
Titanium	1.47	1.21	4	6	15
Tungsten family	.74	1.15	2	12	23
Zinc	.68	.47	3	9	15

As can be seen in the table, the coefficients of variation are roughly equal for five materials while the FPA goals are more unstable for six materials and the S. 1810 goal more unstable for four materials. In all but two cases, S. 1810 goals would have changed more frequently than the actual FPA goals. This is not to say that changing goals are not desirable: They are. This illustrates the point, however, that S. 1810 goals are not markedly more stable than past stockpile goals were as alleged by proponents of S. 1810.

Included as an appendix, are the historical goals for each of the 15 materials.

APPENDIX I

BACKGROUND

A bill introduced in the Senate by Senator McClure (R-Idaho) proposes a method by which stockpile goals would be calculated using past import trends. The bill defines three classes of materials—A, B and C—based upon the degree of import dependency. "Class A materials are those materials . . . primarily obtained from foreign sources. Class B materials are those materials . . . obtained to a substantial extent from foreign sources. Class C materials are those materials . . . obtained to a lesser extent from foreign sources." The stockpile goal for class A materials would be equivalent to 3 years of adjusted net imports, for class B materials 2 years, and for class C materials, 1 year. The bill defines adjusted net imports to be the average of the most recent 5 years of imports minus exports for each material. This net import figure is adjusted, if necessary, to correct for the influence of stockpile acquisitions and disposals.

ANALYSIS

The attached tables are designed to allow one to make comparison between official stockpile goals and stockpile goals calculated using the McClure methodology. The tables show data from 1940 to the present in order to provide a historical perspective. The first column displays adjusted net imports, as defined in the bill, for each year. The 5-year averages of imports are displayed in the second column. The third column indicates the class in which each material falls.

As no formal analytical definition for classes is contained in the bill; one was designed to match the subjective definitions in the bill. An import dependence ratio was calculated by dividing adjusted net imports by industrial consumption. This was then averaged over a five year period. Class A materials were considered to be these materials with an import dependency ratio of 60 percent or

higher, Class C materials those lower than 20 percent with Class B falling in between the other two. It should be noted that other criteria could be used and that adjustments could be made for Canadian imports, etc.

The resultant S. 1810 goal (column 4) is the average annual adjusted imports multiplied by the corresponding class factor (1, 2, or 3 years). The bill specifies a review or recomputation of the stockpile goal for each material would occur at least every four years. In the attached charts, a goal was calculated annually. The bill also specifies, however, that the stockpile goal would not be changed unless there is a difference of at least 10 percent between the computed goal and the then current stockpile goal. An asterisk (*) is used on the charts to indicate when a change of 10 percent or greater occurred and, therefore, a new stockpile goal would be set for the material.

The actual strategic stockpile (FPA) objectives listed (column 5) have been flagged in the same manner when a change of goal occurred. The last column contains the sum of the adjusted net imports for the following 1, 3, or 5 years. The number of subsequent years is determined by the planning period philosophy in effect at that time. There were 5-years stockpile objectives before 1958, 3 years from 1958 to 1973; one year between 1973 and 1976; and 3 years in 1976 to present.

ALUMINUM FAMILY
THOUSAND SHORT TONS

YEAR	ADJUSTED NET IMPORTS	5-YEAR MOVING AVG. ADJUSTED NET IMPORTS	1810 CLASS	1810** GOAL	FPA GOAL	SUBSEQUENT IMPORT REQUIREMENTS**
1940	127	NA	NA	NA	0	1379
1941	249	NA	NA	NA	0	1340
1942	246	NA	NA	NA	0	1442
1943	352	NA	NA	NA	0	1637
1944	40	NA	NA	NA	1100*	2229
1945	492	202	B	404*	1100	1700
1946	310	275	B	550*	1100	1874
1947	318	288	B	550	1100	2409
1948	547	327	B	550	1100	2810
1949	632	377	B	650*	1350*	2734
1950	-37	445	B	650*	1872*	3740
1951	484	340	B	680*	1872*	550
1952	703	394	B	788*	2125*	6243
1953	948	481	B	982*	2125*	7031
1954	556	562	B	1124*	6350*	7429
1955	969	546	B	1124*	6350	7857
1956	1394	748	B	1496*	6350	8923
1957	1400	930	B	1860*	6350	8923
1958	1924	1053	B	2106*	2115*	4533
1959	1344	1248	A	3744*	3450*	5655
1960	1367	1406	A	4218*	3450	6721
1961	1822	1485	A	4218	3450	7450
1962	2493	1771	A	4713*	3450	8057
1963	2493	1771	A	4713*	3450	8057
1964	2531	1888	A	5352*	2700*	9278
1965	3073	2127	A	5352*	3023*	10193
1966	3654	2469	A	7407*	3023*	10816
1967	3466	2835	A	7407*	3023*	10816
1968	3696	3035	A	8505*	3023*	10844
1969	3682	3288	A	8505*	3023*	12010
1970	3912	3514	A	8505*	3023*	12010
1971	4424	3682	A	9864*	363	12995
1972	4659	3836	A	9864*	363	14518
1973	5435	4074	A	11046*	363	16023
1974	5929	4422	A	12222*	363	15901
1975	4587	4871	A	14613*	1160	5929
1976	4582	4996	A	14613	1160	4537
					6128*	4982
						NA

**1810 CLASS BOUNDARIES
(US IMPORT/CONSUMPTION RATIO)

CLASS A: .5 - 1.00
CLASS B: .59 - 1.2
CLASS C: 0 - .15

**LENGTH OF PLANNING PERIODS:

BEFORE 1958: 5 YEARS
1958-1972: 3 YEARS
1973-1975: 1 YEAR
1976: 3 YEARS

* INDICATES CHANGE IN GOAL

METAL CHROME FAMILY
(THOUSAND SHORT DRY TONS)

YEAR	ADJUSTED NET IMPORTS	5-YEAR MOVING AVG. ADJUSTED NET IMPORTS	S1810 CLASS	S1810** GOAL	FPA GOAL	SUBSEQUENT IMPORT REQUIREMENTS**
1940	357	NA	NA	NA	0	2409
1941	454	NA	NA	NA	0	2258
1942	530	NA	NA	NA	0	2242
1943	476	NA	NA	NA	0	2745
1944	427	NA	NA	NA	2352*	3049
1945	522	448	A	1344*	2352	1526
1946	303	481	A	1344	2352	1769
1947	514	451	A	1344	2352	2032
1948	979	448	A	1344	2352	1809
1949	721	549	A	1627*	2352*	1809
1950	-1001	509	A	1915*	3584	3703
1951	745	355	A	1059*	3584	4002
1952	727	355	A	1059*	3584	4349
1953	953	406	A	1218*	3360	2740
1954	634	401	A	1218*	3360	2740
1955	793	381	A	1218	6160*	2755
1956	845	740	A	1218	6160	2350
1957	1124	800	A	2220*	6160	1789
1958	-656	869	A	2220	6160	1148
1959	649	548	A	2607*	3416*	1321
1960	388	551	B	1096*	2700*	1155
1961	284	470	B	940*	2700	1358
1962	483	357	B	714*	2700	1311
1963	591	229	B	459*	2700*	2430
1964	837	479	B	1457*	2700*	2374
1965	1013	216	A	1923*	2370	2766
1966	1180	921	A	1923*	2370	2540
1967	851	860	A	2460*	2370	2844
1968	1288	923	A	2460*	1122*	3176
1969	954	946	A	2769*	1122	3409
1970	1085	961	A	2769	3650*	3261
1971	1137	952	A	2769	3101*	3162
1972	1187	952	A	2769	3101	3819
1973	937	1033	A	3099*	473*	1038
1974	1038	1060	A	3099	473	1844
1975	1844	1076	A	3099	473	1280
1976	-1280	1228	A	3684*	3584*	NA

**S1810 CLASS BOUNDARIES
(US IMPORT/CONSUMPTION RATIO)
CLASS A: 0 - 1.00
CLASS B: .59 - 1.2
CLASS C: 0 - .19

LENGTH OF PLANNING PERIODS:
BEFORE 1958: 5 YEARS
1958-1972: 3 YEARS
1973-1975: 1 YEAR
1976: 3 YEARS

* INDICATES CHANGE IN GOAL

COBALT
(THOUSAND POUNDS)

YEAR	ADJUSTED NET IMPORTS	5-YEAR MOVING AVG. ADJUSTED NET IMPORTS	S1810 CLASS	S1810** GOAL	FPA GOAL	SUBSEQUENT IMPORT REQUIREMENTS**
1940	4166	NA	NA	NA	0	21485
1941	4294	NA	NA	NA	0	20625
1942	4161	NA	NA	NA	0	24669
1943	5183	NA	NA	NA	0	28172
1944	3217	NA	NA	NA	0	21593
1945	4530	4224	A	12672*	0	22201
1946	3834	4297	A	12672	0	25726
1947	8205	4125	A	14799*	0	29758
1948	8686	4933	A	16902*	40000*	32785
1949	-3182	5634	A	12854*	71000*	3702
1950	2859	4318	A	12934	71000	28619
1951	1237	5115	A	17853*	71000	12442
1952	1237	5931	A	17853	95710*	12826
1953	6691	5552	A	19571*	129000*	2973
1954	1760	5552	A	19571	129000	2738
1955	4055	6557	A	11446*	129000	3171
1956	3876	6340	B	8976*	81400*	2083
1957	6060	5723	B	5578*	19000*	22879
1958	-1805	4488	B	9130*	19000	29348
1959	10643	2789	B	9130	19000	34171
1960	4205	4565	B	16401*	19000	39025
1961	8235	4595	A	19029*	42000*	47836
1962	10439	5467	A	26517*	42000	48935
1963	10674	6343	A	34617*	42000	46243
1964	13058	8839	A	41367*	42000	44179
1965	15293	9322	A	41367	42000	46123
1966	19485	11539	A	41367	42000	45752
1967	14157	13789	A	41367	38200*	5506
1968	17291	14538	A	47373*	38200	5908
1969	16101	15791	A	47373	38200	63145
1970	12230	15953	A	47373	38200	60764
1971	12230	15953	A	47373	38200	60764
1972	18567	14502	A	47373	11945*	23170
1973	26408	15384	A	47373	11945	11186
1974	23170	18145	A	54435*	11945	20775
1975	11186	19295	A	54435	85415*	NA
1976	20775	18312	A	54435	85415*	NA

**S1810 CLASS BOUNDARIES
(US IMPORT/CONSUMPTION RATIO)

CLASS A: .6 - 1.00
CLASS B: .59 - .12
CLASS C: 0 - .13

**LENGTH OF PLANNING PERIODS:

BEFORE 1956: 5 YEARS
1956-1972: 3 YEARS
1972-1975: 1 YEAR
1975-1976: 3 YEARS

* INDICATES CHANGE IN GOAL

COPPER
(TH ST)

YEAR	ADJUSTED NET IMPORTS	5-YEAR MOVING AVG. ADJUSTED NET IMPORTS	S1810 CLASS	S1810** GOAL	FPA GOAL	SUBSEQUENT FPA REQUIREMENTS**
1940	113	NA	NA	NA	0	3298
1941	618	NA	NA	NA	0	3019
1942	630	NA	NA	NA	0	2777
1943	537	NA	NA	NA	0	2577
1944	715	NA	NA	NA	1250*	2015
1945	798	522	B	1044*	1250	1675
1946	339	659	B	1318*	1250	1619
1947	388	603	B	1318	1250	1735
1948	337	555	B	1110*	1250	1787
1949	153	515	B	1110	1250	1693
1950	458	403	B	906*	2100*	1334
1951	504	333	C	335	2100	1800
1952	389	347	C	335	1000*	1773
1953	389	347	C	335	1000	619
1954	49	357	C	335	1600*	948
1955	309	336	C	335	3500*	595
1956	259	306	C	335	3500	260
1957	67	302	C	335	3500	310
1958	-65	214	C	214*	1900*	258
1959	378	123	C	123*	1000*	-3
1960	-44	189	C	189*	1000	345
1961	-76	119	C	119*	1000	627
1962	117	52	C	52*	1000	818
1963	304	62	C	62*	775*	1229
1964	206	135	C	135*	775	1268
1965	308	101	C	101*	775	1385
1966	171	171	C	171*	775	1800
1967	555	330	C	330*	775	1900
1968	315	417	C	417*	775	249
1969	160	419	C	417	775	232
1970	15	410	C	417	775	511
1971	74	352	C	352*	775	789
1972	143	223	C	223*	775	655
1973	294	141	C	141*	0*	352
1974	352	137	C	141	0	9
1975	9	175	C	175*	0	187
1976	187	174	C	175	1299*	NA

**S1810 CLASS BOUNDARIES
(US IMPORT/CONSUMPTION RATIO)
CLASS A: .59 - 1.00
CLASS B: .59 - 1.00
CLASS C: 0 - .15

++LENGTH OF PLANNING PERIODS:
BEFORE 1958: 5 YEARS
1958-1972: 1 YEAR
1973-1975: 3 YEARS
1976: 1 YEAR

* INDICATES CHANGE IN GOAL

FLUORSPAR - ACID GRADE
(THOUSAND SHORT DRY TONS)

YEAR	ADJUSTED NET IMPORTS	5-YEAR MOVING AVG. ADJUSTED NET IMPORTS	S1810 CLASS	S1810** GOAL	FPA GOAL	SUBSEQUENT IMPORT REQUIREMENTS**
1940	6	NA	NA	NA	0	8
1941	-4	NA	NA	NA	0	18
1942	-3	NA	NA	NA	0	36
1943	NA	NA	NA	NA	0	56
1944	5	NA	NA	NA	0	71
1945	10	NA	C	NA	0	98
1946	16	1	C	1*	0	108
1947	15	3	C	3*	0	180
1948	20	7	C	7*	0	262
1949	20	11	C	11*	0	313
1950	27	14	C	14*	250	373
1951	16	18	C	19*	250	458
1952	87	21	C	21*	250	821
1953	102	26	B	71*	250	821
1954	71	52	B	104*	250	952
1955	97	62	B	124*	220	952
1956	101	74	B	148*	220	1019
1957	450	91	B	182*	505	1161
1958	-54	164	B	328*	505	951
1959	261	133	B	266*	292*	765
1960	261	171	B	342*	280*	744
1961	243	203	A	609*	280	844
1962	240	232	A	696*	280	993
1963	361	190	B	696*	280	1245
1964	482	273	A	380*	540*	1416
1965	432	295	A	819*	540	1416
1966	532	325	A	103*	540	1765
1967	604	403	A	1203*	540	1878
1968	629	476	A	1428*	540	2011
1969	645	529	A	1587*	540	2141
1970	637	580	A	1587*	540	2219
1971	762	609	A	1827*	540	2299
1972	742	655	A	1827*	540	2265
1973	715	683	A	2049*	0*	842
1974	842	700	A	2049	0	708
1975	708	739	A	2049	0	589
1976	589	753	A	2259*	1594*	NA

**S1810 CLASS BOUNDARIES
(US IMPORT/CONSUMPTION RATIO)

CLASS A: .6 - 1.00
CLASS B: .59 - .2
CLASS C: 0 - .19

**LENGTH OF PLANNING PERIODS:

BEFORE 1958: 5 YEARS
1959-1972: 3 YEARS
1973-1975: 1 YEAR
1976: 3 YEARS

* INDICATES CHANGE IN GOAL

FLUORESPAR - METAL
(THOUSAND SHORT DRY TONS)

YEAR	ADJUSTED NET IMPORTS	5-YEAR MOVING AVG. ADJUSTED NET IMPORTS	S1810 CLASS	S1810** GOAL	PFA GOAL	SUBSEQUENT IMPORT REQUIREMENTS**
1940	4	NA	NA	NA	0	185
1941	2	NA	NA	NA	0	206
1942	-3	NA	NA	NA	0	272
1943	40	NA	NA	NA	0	323
1944	74	NA	NA	NA	0	324
1945	72	23	C	23*	0	289
1946	23	37	C	37*	0	304
1947	61	41	C	41*	0	439
1948	91	24	B	108*	0	485
1949	75	64	B	128*	0	485
1950	37	64	B	128*	0	628
1951	38	57	B	114*	150*	788
1952	198	60	B	114*	130*	751
1953	137	87	B	174*	130	653
1954	97	97	B	194*	700*	678
1955	158	101	B	194	700	646
1956	198	125	B	250*	700	600
1957	161	157	B	314*	700	643
1958	39	150	B	314	430*	400
1959	122	130	B	260*	375*	482
1960	126	135	B	260	375	551
1961	152	129	B	260	375	587
1962	195	120	B	260	372	995
1963	195	120	B	260	372	941
1964	288	158	A	477*	850*	941
1965	312	193	A	579*	850	1048
1966	341	230	A	590*	850	1158
1967	308	268	A	804*	850	1252
1968	399	288	A	804	850	1258
1969	451	329	A	987*	850	1275
1970	402	362	A	1086*	850	1377
1971	405	380	A	1086	850	1459
1972	468	393	A	1086	850	1341
1973	504	425	A	1275*	159*	487
1974	487	446	A	1275	159	350
1975	350	453	A	1275	159	303
1976	303	442	A	1275	1914*	NA

**S1810 CLASS BOUNDARIES
(US IMPORT/CONSUMPTION RATIO)
CLASS A: 1.00
CLASS B: .59 - .2
CLASS C: 0 - .15

++LENGTH OF PLANNING PERIODS:
BEFORE 1958: 5 YEARS
1958-1972: 3 YEARS
1973-1975: 1 YEAR
1976: 3 YEARS

* INDICATES CHANGE IN GOAL

FLUORSPAR - ACID GRADE
(THOUSAND SHORT DRY TONS)

YEAR	ADJUSTED NET IMPORTS	5-YEAR MOVING AVG. ADJUSTED NET IMPORTS	S1810 CLASS	S1810** GOAL	FPA GOAL	SUBSEQUENT IMPORT REQUIREMENTS**
1940	6	NA	NA	NA	0	8
1941	-4	NA	NA	NA	0	18
1942	-3	NA	NA	NA	0	36
1943	NA	NA	NA	NA	0	56
1944	5	NA	NA	NA	0	71
1945	10	NA	C	NA	0	98
1946	6	1	C	1*	0	108
1947	15	3	C	3*	0	180
1948	20	7	C	7*	0	262
1949	20	11	C	11*	0	313
1950	37	14	C	14*	250*	373
1951	16	19	C	19*	250	458
1952	87	21	C	21*	250	821
1953	102	56	B	72*	250	865
1954	91	62	B	104*	220*	895
1955	91	74	B	128*	220*	1035
1956	101	91	B	185*	505*	1161
1957	450	164	B	328*	292*	891
1958	-54	164	B	265*	280*	765
1959	261	133	B	348*	280*	744
1960	261	171	B	348*	280	844
1961	243	203	A	603*	280	993
1962	240	232	A	696*	280	1245
1963	361	190	B	380*	540*	1416
1964	392	273	A	819*	540	1628
1965	492	299	A	819	540	1765
1966	532	345	A	1035*	540	1878
1967	604	403	A	1203*	540	1911
1968	629	476	A	1428*	540	2044
1969	645	529	A	1581*	540	2141
1970	762	589	A	1851*	540	2219
1971	762	655	A	1827*	540	2229
1972	742	685	A	2046*	0*	2340
1973	715	683	A	2049	0	842
1974	842	700	A	2049	0	708
1975	708	739	A	2049	0	589
1976	589	753	A	2259*	1594*	NA

**S1810 CLASS BOUNDARIES
(US IMPORT/CONSUMPTION RATIO)
CLASS A: .6 - 1.00
CLASS B: .59 - .2
CLASS C: 0 - .19

++LENGTH OF PLANNING PERIODS:
BEFORE 1958: 5 YEARS
1958-1972: 3 YEARS
1973-1975: 1 YEAR
1976: 3 YEARS

* INDICATES CHANGE IN GOAL

LEAD
(THOUSAND SHORT TONS)

YEAR	ADJUSTED NET IMPORTS	MOVING AVG. ADJUSTED NET IMPORTS	5-YEAR ADJUSTED NET IMPORTS	S1810 CLASS	S1810** GOAL	FPA GOAL	SUBSEQUENT IMPORT REQUIREMENTS**
1940	258	NA	NA	NA	NA	0	1705
1941	326	NA	NA	NA	NA	0	1538
1942	322	NA	NA	NA	NA	0	1495
1943	370	NA	NA	NA	NA	0	1445
1944	471	NA	NA	NA	NA	1100*	1144
1945	295	315	315	B	666*	1100	1059
1946	159	341	341	B	666	1100	1127
1947	209	307	307	B	666	1100	1333
1948	310	299	299	B	598*	1100	1500
1949	170	289	289	B	598	1100	1702
1950	211	228	228	B	456*	700*	1851
1951	227	211	211	C	211*	700	2399
1952	415	225	225	C	211	700	2399
1953	477	266	266	B	532*	700	1849
1954	372	300	300	B	600*	1130*	1820
1955	360	340	340	B	680*	1130	1810
1956	374	370	370	B	680	1154*	1816
1957	394	399	399	B	798*	1154	1735
1958	394	415	415	B	798	286*	1073
1959	343	389	389	B	798	286	1043
1960	350	382	382	B	798	286	1076
1961	380	382	382	B	798	286	1064
1962	313	383	383	B	798	286	1139
1963	393	347	347	B	798	286	1246
1964	368	353	353	B	694*	286	1388
1965	388	358	358	B	694	286	1452
1966	490	366	366	B	694	286	1577
1967	510	388	388	B	776*	286	1601
1968	452	427	427	B	854*	530*	955
1969	395	441	441	B	854	530	975
1970	357	447	447	B	854	530	1084
1971	449	440	440	B	854	530	865
1972	249	392	392	B	854	530	358
1973	377	380	380	B	720*	65*	130
1974	358	348	348	B	720	65	176
1975	130	338	338	B	720	65	176
1976	176	292	292	C	252*	865*	NA

**S1810 CLASS BOUNDARIES
(US IMPORT/CONSUMPTION RATIO)
CLASS A: 1.0
CLASS B: .59 - 1.0
CLASS C: 0 - .19

++LENGTH OF PLANNING PERIODS:
BEFORE 1958: 5 YEARS
1958-1972: 3 YEARS
1973-1975: 1 YEAR
1976: 3 YEARS

* INDICATES CHANGE IN GOAL

MANGANESE FAMILY
(THOUSAND SHORT DRY TONS - ORE EQUIVALENTS)

YEAR	ADJUSTED NET IMPORTS	5-YEAR MOVING AVG. ADJUSTED NET IMPORTS	SI810 CLASS	SI810** GOAL	FPA GOAL	SUBSEQUENT IMPORT REQUIREMENTS**
1940	1408	NA	NA	NA	0	6802
1941	1522	NA	NA	NA	0	7102
1942	1320	NA	NA	NA	0	7346
1943	1413	NA	NA	NA	0	7247
1944	1108	NA	NA	NA	0	7772
1945	1439	1354	A	4062*	5264*	5264*
1946	1796	1360	A	4062	5264	5952
1947	1590	1415	A	4062	5264	5844
1948	1314	1469	A	4062	5264	7155
1949	1583	1449	A	4062	5264	8021
1950	-331	1544	A	4632*	5600*	7703
1951	1688	1190	A	3570*	5600	9789
1952	2901	1168	A	3570*	5600	10031
1953	1280	1231	A	4293*	5600	10325
1954	1256	1412	A	4812*	5600	7789
1955	1785	1546	A	5817*	8848	8252
1956	1930	1577	A	5817*	8848	9418
1957	3195	2006	A	5811	8848	8612
1958	-356	2065	A	5811	5376*	5376*
1959	1728	1557	A	4671*	6800*	4850
1960	1921	1650	A	4671	6800	4405
1961	1131	1683	A	4671	6800	5334
1962	1498	1523	A	4671	6800	7390
1963	1776	1184	A	3552*	6800	7150
1964	2060	1610	A	4830*	7900*	7376
1965	3534	1677	A	4830	7900	5962
1966	1536	2003	A	6009*	7900	7046
1967	2286	2084	A	6009	7900	7157
1968	2140	2242	A	6726*	4000*	7509
1969	2620	2315	A	6726	4000	7489
1970	2387	2427	A	6726	4000	7644
1971	2482	2135	A	6726	4000	8727
1972	282	2386	A	6726	4000	9304
1973	2592	2340	A	7562*	4000	3375
1974	3575	2532	A	7562*	2129*	2129*
1975	3177	2723	A	7596	2129	2331
1976	2331	2879	A	8637*	3312*	NA

**SI810 CLASS BOUNDARIES
(US IMPORT/CONSUMPTION RATIO)
CLASS A: 6 - 1.00
CLASS B: .59 - .2
CLASS C: 0 - .19

**LENGTH OF PLANNING PERIODS:
BEFORE 1958: 5 YEARS
1958-1972: 3 YEARS
1973-1975: 1 YEAR
1976: 3 YEARS

* INDICATES CHANGE IN GOAL

NICKEL
(THOUSANT SHORT TONS)

YEAR	ADJUSTED NET IMPORTS	5-YEAR MOVING AVG. ADJUSTED NET IMPORTS	S1810 CLASS	S1810** GOAL	FPA GOAL	SUBSEQUENT IMPORT REQUIREMENTS**
1940	80	NA	NA	NA	0	532
1941	99	NA	NA	NA	0	496
1942	107	NA	NA	NA	0	457
1943	113	NA	NA	NA	0	428
1944	110	NA	NA	NA	118*	398
1945	103	101	A	303*	118/	371
1946	63	106	A	303	118	388
1947	68	99	A	303	118	414
1948	84	91	A	303	118	422
1949	80	85	A	255*	118	426
1950	76	79	A	255	290*	436
1951	80	74	A	222*	230	439
1952	94	77	A	222	450*	458
1953	92	82	A	246*	450	399
1954	84	85	A	246	338*	389
1955	83	87	A	246	338	383
1956	113	87	A	246	338	343
1957	33	91	A	273*	162*	218
1958	74	79	A	237*	162	236
1959	60	77	A	237	162	237
1960	84	72	A	237	162	216
1961	92	72	A	237	162	332
1962	61	68	A	204*	162	332
1963	63	74	A	204	50*	440
1964	208	72	B	144*	50	511
1965	169	101	A	303*	50	416
1966	134	118	A	354*	50	511
1967	113	127	A	354	50	335
1968	96	137	A	411*	55*	343
1969	126	144	A	411	55	410
1970	151	151	A	411	0*	455
1971	151	151	A	360*	0	457
1972	171	123	A	360	0	497
1973	195	135	A	405*	0	195
1974	131	155	A	465*	0	131
1975	140	156	A	465	204*	140
1976						NA

**S1810 CLASS BOUNDARIES
(US IMPORT/CONSUMPTION RATIO)
CLASS A: .6 - 1.00
CLASS B: .59 - .2
CLASS C: 0 - .19

++LENGTH OF PLANNING PERIODS:
BEFORE 1958: 5 YEARS
1958-1972: 3 YEARS
1973-1975: 1 YEAR
1976: 3 YEARS

* INDICATES CHANGE IN GOAL

RUBBER
(THOUSAND LONG DRY TONS)

YEAR	ADJUSTED NET IMPORTS	5-YEAR MOVING AVG. ADJUSTED NET IMPORTS	S1810 CLASS	S1810** GOAL	FPA GOAL	SUBSEQUENT IMPORT REQUIREMENTS**
1941	1024	NA	NA	NA	0	679
1942	17	NA	NA	NA	0	1144
1943	37	NA	NA	NA	0	1634
1944	104	NA	NA	NA	0	2185
1945	184	NA	NA	NA	0	2751
1946	339	NA	NA	NA	0	2798
1947	482	264	A	792*	600*	2834
1948	527	335	B	270*	488*	2881
1949	655	328	A	634*	584*	2776
1950	705	437	A	1379*	1230*	2716
1951	429	550	A	1550*	1230*	2832
1952	518	559	A	1550	1230	2748
1953	574	566	A	1550	1230	2748
1954	550	576	A	1650	1230	2753
1955	645	555	A	1650	1230	2593
1956	565	543	A	1650	1230	2445
1957	527	570	A	1650	1230	2386
1958	461	572	A	1650	600*	1457
1959	555	549	A	1650	750*	1370
1960	485	550	A	1650	750	1366
1961	417	518	A	1650	750	1457
1962	488	489	A	1467*	750	1511
1963	581	477	A	1467	750	1570
1964	522	491	A	1467	130*	1594
1965	532	473	A	1467	130	2311
1966	540	473	A	1467	130	2382
1967	532	503	A	1467	130	2407
1968	1239	516	A	2004*	385*	1775
1969	611	668	A	2004	200*	1978
1970	557	688	A	2004	200	2043
1971	607	695	A	2004	200	2058
1972	630	709	A	2004	0*	732
1973	681	728	A	2004	0	645
1974	732	617	A	2004	0	688
1975	645	641	A	2004	0	688
1976	688	659	A	2004	513*	NA

**S1810 CLASS BOUNDARIES
(US IMPORT/CONSUMPTION RATIO)

CLASS A: .6 - 1.00

CLASS B: .59 - .2

CLASS C: 0 - .19

***LENGTH OF PLANNING PERIODS:

BEFORE 1958: 3 YEARS

1958-1971: 3 YEARS

1971-1975: 1 YEAR

1975-1976: 3 YEARS

* INDICATES CHANGE IN GOAL

SILVER
(MILLION TROY OUNCES)

YEAR	ADJUSTED NET IMPORTS	5-YEAR MOVING AVG. ADJUSTED NET IMPORTS	S1810 CLASS	S1810** GOAL	PPA GOAL	SUBSEQUENT IMPORT REQUIREMENTS**
1951	99	NA	NA	NA	0	459
1952	102	NA	NA	NA	0	519
1953	95	NA	NA	NA	0	494
1954	71	NA	NA	NA	0	532
1955	105	NA	NA	NA	0	549
1956	106	90	A	270*	0	583
1957	182	91	A	270	0	579
1958	70	103	A	309*	0	351
1959	109	98	A	309	0	400
1960	102	106	A	309	0	509
1961	140	109	A	309	0	677
1962	158	116	A	348*	0	828
1963	211	115	A	348	0	828
1964	308	144	A	432*	0	761
1965	429	183	A	549*	165*	121
1966	187	249	A	747*	139	139
1967	145	258	A	747	165	7
1968	-209	256	A	747	165	253
1969	103	172	A	516*	140*	236
1970	117	131	A	393*	140	266
1971	27	97	B	134*	140	340
1972	66	97	B	74*	140	361
1973	143	26	C	26*	22*	111
1974	111	98	A	288*	22	107
1975	107	98	A	288	22	9
1976	9	96	B	192*	0*	NA

+-LENGTH OF PLANNING PERIODS:

BEFORE 1958: 5 YEARS
1958-1972: 3 YEARS
1973-1975: 1 YEAR
1976: 3 YEARS

* INDICATES CHANGE IN GOAL

**S1810 CLASS BOUNDARIES
(US IMPORT/CONSUMPTION RATIO)
CLASS A: .89 - 1.0
CLASS B: .59 - .89
CLASS C: 0 - .59

TIN
(THOUSAND LONG TONS)

YEAR	ADJUSTED NET IMPORTS	5-YEAR MOVING AVG. ADJUSTED NET IMPORTS	SI810 CLASS	SI810** GOAL	FPA GOAL	SUBSEQUENT IMPORT REQUIREMENTS**
1940	106	NA	NA	NA	0	365
1941	138	NA	NA	NA	0	272
1942	46	NA	NA	NA	0	284
1943	40	NA	NA	NA	0	311
1944	100	NA	NA	NA	210*	255
1945	41	86	A	258*	210	287
1946	45	73	A	219*	210	249
1947	58	54	A	162*	210	249
1948	67	56	A	162	210	228
1949	44	62	A	186*	260*	217
1950	73	51	A	153*	350*	203
1951	7	57	A	171*	245*	257
1952	58	49	B	98*	245	252
1953	46	49	B	98	245	254
1954	33	45	B	98	308*	281
1955	59	43	B	86*	341*	270
1956	61	40	B	86	341	260
1957	53	51	A	153*	198*	139
1958	48	50	B	100*	188*	159
1959	60	56	A	150*	188*	159
1960	48	51	A	168*	188*	163
1961	51	52	A	168	195	180
1962	49	52	A	168	200*	186
1963	23	52	A	168	200	184
1964	62	52	A	168	200	177
1965	59	56	A	168	200	172
1966	59	57	A	168	200	167
1967	59	59	A	168	200	157
1968	59	60	A	168	232*	159
1969	54	59	A	168	232	164
1970	54	55	A	168	232	182
1971	49	57	A	168	232	173
1972	56	55	A	168	41*	67
1973	59	54	A	168	41	47
1974	67	54	A	168	41	54
1975	47	57	A	168	32*	NA
1976	54	55	A	168		

**SI810 CLASS BOUNDARIES
(US IMPORT/CONSUMPTION RATIO)

CLASS A: .59-1.00
CLASS B: .59-1.00
CLASS C: 0-.19

++LENGTH OF PLANNING PERIODS:

BEFORE 1958: 5 YEARS
1958-1972: 3 YEARS
1973-1975: 1 YEAR
1976: 3 YEARS

* INDICATES CHANGE IN GOAL

TITANIUM SPONGE
(SHORT TONS)

YEAR	ADJUSTED NET IMPORTS	5-YEAR MOVING AVG. ADJUSTED NET IMPORTS	S1810 CLASS	S1810** GOAL	PPA GOAL	SUBSEQUENT IMPORT REQUIREMENTS**
1954	-2558	NA	NA	NA	25000*	-10676
1955	-3343	NA	NA	NA	25000	5696
1956	-1764	NA	NA	NA	25000	9077
1957	-5958	NA	NA	NA	0*	35835
1958	-4648	NA	NA	NA	0	19683
1959	5037	NA	NA	NA	0	35446
1960	13029	-3655	C	<0	0	22709
1961	1817	-2136	C	<0	0	21389
1962	20808	1132	C	3139*	0	1291
1963	20392	1132	B	21601*	0	1291
1964	297	7147	A	24465*	0	10377
1965	1002	8155	A	21621*	20500*	10377
1966	3328	7207	A	21621*	20500	10377
1967	6507	4801	B	9602*	37500*	9718
1968	687	5143	B	9602	37500	1973
1969	2524	2285	C	2285*	37500	2377
1970	-1238	2364	C	2285	33500*	-696
1971	1091	2809	C	2809*	33500	316
1972	-549	2361	C	2361*	33500	6493
1973	-226	1914	C	1914*	33500	6548
1974	7268	503	C	503*	0*	7268
1975	-494	320	C	320*	0	-494
1976	-2796	1269	C	1269*	0	-2796
		1418	C	1418*	131503*	NA

**S1810 CLASS BOUNDARIES
(US IMPORT/CONSUMPTION RATIO)
CLASS A: .6 - 1.00
CLASS B: .39 - .2
CLASS C: 0 - .13

++LENGTH OF PLANNING PERIODS:

1954-1956: 3 YEARS
1957-1972: 3 YEARS
1973-1975: 1 YEAR
1976: 3 YEARS

* INDICATES CHANGE IN GOAL

TUNGSTEN FAMILY
(THOUSAND POUNDS)

YEAR	ADJUSTED NET IMPORTS	5-YEAR MOVING AVG. ADJUSTED NET IMPORTS	SI810 CLASS	SI810** GOAL	FPA GOAL	SUBSEQUENT IMPORT REQUIREMENTS**
1940	9428	NA	NA	NA	0	67911
1941	12957	NA	NA	NA	0	61370
1942	14981	NA	NA	NA	0	54864
1943	17281	NA	NA	NA	0	45347
1944	15304	NA	NA	NA	36000*	36495
1945	7388	13990	A	41970*	36000	2328
1946	6416	13582	A	41970	36000	-7640
1947	8475	12274	A	36822*	36000	-6123
1948	7764	10972	A	32916*	36000	6923
1949	6452	9069	A	27207*	85000*	-43129
1950	-26779	7299	A	21897*	146000*	3858
1951	-3552	465	C	465*	146000	3154
1952	8992	-1528	C	<0*	146000*	-59326
1953	20810	-1225	C	1384*	94000*	-12695
1954	20810	1194	C	1384*	94000*	-12695
1955	-20208	-8226	C	771*	94000	-36031
1956	-4256	771	C	771*	94000	-35187
1957	13568	630	C	630*	94000	5587
1958	-45246	1346	C	1346*	49200*	7028
1959	3031	-11866	C	<0*	50000*	8561
1960	1744	-2339	C	<0	50000	10533
1961	812	-6232	C	<0	50000	10459
1962	4472	-5219	C	<0	50000	17682
1963	3277	-7038	C	<0	44000*	22877
1964	2784	2667	B	5334*	44000	22440
1965	4398	2617	B	5334	44000	21195
1966	10500	3148	B	6296*	44000	22097
1967	1979	5086	B	10172*	2500*	24097
1968	3251	5086	B	11574*	2500	24420
1969	9251	5086	B	11574*	2500	22633
1970	8881	7218	B	11416*	6200*	14008
1971	8284	8115	B	16230*	60000	32860
1972	7468	7272	B	14544*	60000	24483
1973	11591	7169	B	14544	4234*	13801
1974	13801	8695	B	17390*	4234	-909
1975	-909	9605	B	19210*	4234	4251
1976	4251	7647	B	15294*	47681*	NA

**SI810 CLASS BOUNDARIES
(US IMPORT/CONSUMPTION RATIO)

CLASS A: .6 - 1.00

CLASS B: .59 - .2

CLASS C: 0 - .19

**LENGTH OF PLANNING PERIODS:
BEFORE 1958: 5 YEARS

1958-1972: 3 YEARS

1972-1975: 1 YEAR

1975-1976: 3 YEARS

* INDICATES CHANGE IN GOAL

ZINC
(THOUSAND SHORT TONS)

YEAR	ADJUSTED NET IMPORTS	5-YEAR MOVING AVG. ADJUSTED NET IMPORTS	S1810 CLASS	S1810** GOAL	FPA GOAL	SUBSEQUENT IMPORT REQUIREMENTS**
1940	91	NA	NA	NA	0	1637
1941	191	NA	NA	NA	0	1735
1942	174	NA	NA	NA	0	1687
1943	320	NA	NA	NA	0	1414
1944	539	NA	NA	NA	1500*	938
1945	413	263	B	526*	1500*	759
1946	289	327	B	654*	1500	743
1947	126	347	B	654	1500	1034
1948	47	337	B	654	1500	1617
1949	63	282	B	564*	1500	1966
1950	234	187	B	564*	1500	2213
1951	273	151	C	151*	740*	2416
1952	417	148	C	151	740	2808
1953	410	325	C	206*	1100*	2446
1954	412	323	B	786*	1100*	2274
1955	481	393	B	884*	1250*	2248
1956	476	442	B	884	1250	2266
1957	809	483	B	884	1250	2266
1958	268	561	B	1122*	1256*	1471
1959	559	489	B	978*	1256	1439
1960	462	518	B	978	1256	1461
1961	450	514	B	978	1256	1534
1962	527	509	B	978	1256	1781
1963	484	453	B	978	0*	2144
1964	523	496	B	978	0	2374
1965	774	489	B	978	0	2398
1966	847	551	B	1102*	0	2426
1967	753	631	B	1262*	0	2416
1968	776	716	B	1262	0	2237
1969	978	776	B	1262*	560*	2239
1970	743	809	B	1478*	560	2239
1971	619	803	B	1478	560	2231
1972	337	757	B	1478	560	975
1973	1046	794	B	1478	203*	510
1974	975	844	B	1688*	203	510
1975	510	864	B	1688	203	798
1976	798	817	B	1688	1313*	NA

**S1810 CLASS BOUNDARIES
(US IMPORT/CONSUMPTION RATIO)
CLASS A: .6 - 1.00
CLASS B: .59 - .2
CLASS C: 0 - .19

++LENGTH OF PLANNING PERIODS:
BEFORE 1958: 5 YEARS
1958-1972: 3 YEARS
1973-1975: 1 YEAR
1976: 3 YEARS

* INDICATES CHANGE IN GOAL

APPENDIX II

COMMENTARY ON SELECTED SECTIONS OF S. 1810

"Section 2(a) of the Strategic and Critical Materials Stock Piling Act (50 U.S.C. 98h(a)) is amended to read as follows:

(a) To effectuate the policy set forth in the first section of this Act, determinations shall be made from time to time, as provided in this section, regarding which materials are strategic and critical to the United States and the quantities of such materials that should be stockpiled under this Act.

(b) (1) The President shall appoint an interagency committee composed of representatives from appropriate departments and agencies of the Government to determine which materials are to be acquired under this Act and what classification such materials shall be assigned under paragraph (2)."

Comment

An interagency committee exists to recommend to the Director, FPA, the materials to be classified as strategic and/or critical and determines, based on wartime contingencies, which priority classification these materials should have. The final determination of materials to be included or excluded from the stockpile should continue to rest with the President or official to whom this responsibility is delegated.

"(2) Materials selected to be stockpiled under this Act shall be classified by the interagency advisory committee provided for in paragraph (1) as being one of the three classes prescribed below, as appropriate:

(A) Class A materials are those materials not produced in the United States or produced in the United States in limited quantities, are necessary for the security of the United States, are essential to the economy of the United States, and are primarily obtained from foreign sources.

(B) Class B materials are those materials produced in the United States but are not available in sufficient quantities in the United States to offer the potential for meeting total domestic needs, are necessary to the security of the United States, are essential to the economy of the United States, and are obtained to a substantial extent from foreign sources.

(C) Class C materials are those materials produced in substantial quantities in the United States, are available in sufficient quantities to meet total domestic requirements, are necessary to the security of the United States, are essential to the economy of the United States, and are obtained to a lesser extent from foreign sources."

Comment

These are arbitrary classifications. Unless a liberal invocation of the phrases—"... necessary to the security ... essential to the economy of the United States ..."—were incorporated into the analysis and calculations, it is difficult to envision—except fortuitously—stockpile goals of materials which meet the requirements of a wartime economy based on this rationale. No guidance is provided as to what degree of input dependency places a material in class A, B or C—rather, the sponsors of the bill want the Executive Branch to define it. It would seem that if the sponsors cannot offer criteria, the bill is fundamentally deficient. Further, even if suitable criteria could be developed, a material's classification (and hence, its goal) can vary considerably as the import share varies over the business cycle. In some materials, such as tin, the share varies little; in other materials, such as copper, the share varies more widely.

This classification system appears to assume stability of import market shares of commodities. The economy typically expands in an emergency, and the pattern of materials usage is significantly restructured by war-induced requirements which could be expected to shift "Class" designations markedly after the fact. For example, the World War II requirements for aluminum were almost 5 times the pre-war level; for copper, the requirements doubled. These classifications do not take advantage of the gains to be realized in implementing policies directed toward conservation, substitution, and civilian austerity. In an emergency, the supply of materials can be expanded by exploiting existing capacity (e.g., three shifts) and developing new capacity (albeit uneconomic in peacetime), but even so, "desired" import shares as opposed to peacetime shares could be expected to shift suddenly and markedly.

"(3) The quantity of any material to be acquired under this Act (stockpile objective) shall be determined as follows:

(A) The stockpile objective for any material designated as a class A material shall be a quantity equal to three years' domestic net imports of such material.

(B) The stockpile objective for any material designated as a class B material shall be a quantity equal to two years' domestic net imports of such material.

(C) The stockpile objective for any material designated as a class C material shall be a quantity equal to one year's net imports of such material."

Comment

Again, these are arbitrary, ill-defined priority levels which may or may not be in accord with the material needs of a wartime restructured and expanded economy. It would provide the same treatment to materials for which we are more or less 100 percent foreign source dependent imported from Canada or Mexico (e.g., Asbestos) as to those from Africa or Southeast Asia (e.g., Chromite). This is unrealistic given reasonable assumptions regarding the future war zone, shipping losses, the political reliability of foreign countries, the possibilities of substitution and austerity, and the obviously variable effects these factors would have on imported strategic materials.

Since 1944, there have been numerous evaluations of a "supply-based" stockpile methodology, including examinations of a methodology based on import levels. More recently, in "Phase I" of the major interagency study of the stockpile completed in 1976, an "import-dependency system" approach was considered. Because peacetime patterns reflect neither wartime demand and supply patterns nor the materials-savings potential in the economy under wartime conditions (even when imports are extrapolated ahead), the import-dependency approach was rejected as unsuitable.

"(4) Subject to appropriate adjustments under paragraph (5), a year's domestic net imports of any material for purposes of clause (A), (B), or (C) of paragraph (3) shall be a quantity of the material equal to the average annual imports of such material during the five calendar years immediately preceding the calendar year in which the determination for the stockpile objective is being made (base period), plus the average annual sales or minus the average annual purchases of such material made from the stockpile during such five-year base period, reduced by the average annual exports of such material during such five year base period."

Comment

This is an unsuitable base period procedure. Mathematically, an averaging technique "centers" the data at the middle year. For example, a five-year average covering the period 1970 through 1975 would be centered on 1973. Thus, in planning for a war that would take place in the late 1970's or early 1980's supply estimates based on this approach would be 6 or more years behind the times. In addition, although a moving average tends to reduce fluctuations in proportion to its length, the business cycle is still present, and trade fluctuations in materials with tight markets can be expected to occur in excess of the ten percent interval proposed in the legislation.

We should also point out that the Chairman of the Subcommittee on Seapower and Strategic and Critical Materials, Mr. Charles E. Bennett, is an advocate of a three-year planning guidance for direct and indirect defense requirements. There is no guarantee that one-, two- or even a three-year import dependency goal would cover three years of defense requirements.

"(5) In determining the quantity under paragraph (4) of any material to be acquired for the stockpile appropriate adjustments shall be made in the computations made under such paragraph in the case of any material which is acquired in both its crude form and in its refined or processed form so as to avoid duplicate calculations with respect to the same material."

Comment

The question of stockpiling raw material and/or an upgraded form requires considerably more analysis than is indicated by this proviso.

The proposed approach for raw materials and upgraded forms does not take into account an in-depth analysis of the pros and cons of this methodology. Whenever possible, stockpile materials are kept in their basic forms. However, to the extent that the United States actually imports upgraded forms from reliable sources, these forms in ore "equivalents" are considered in the supply estimates. A team of interagency experts approved this approach in a recent review of stockpile goals. Failure to do so understates available supplies, and thus overstates stockpile goals, and thereby incurs an unnecessary expense to the taxpayers.

Stockpiling upgraded forms of materials may be necessary, however, for two reasons:

There may be insufficient smelting and refining capacity, even though enough raw materials are available; and

Other domestic bottlenecks due to transportation, energy, and labor shortages may occur.

An advantage of stockpiling the upgraded material is that the labor, transportation, and energy necessary to process the raw material into the upgraded form are also in effect stockpiled. On the other hand, significant penalties and risks are inherent in stockpiling upgraded forms:

Higher initial cost and possible higher storage costs—

Possible limitation to specific end product uses—

Susceptibility to obsolescence because of changing technology—

Susceptibility in some cases to physical deterioration—

Possible multiplicity of upgraded forms of each raw material and the increased attendant administrative costs—

In spite of these cost risks, national security considerations predominate. When the domestic capacity to process the raw material into upgraded forms is less than wartime requirements, a combination of raw and upgraded forms should be stockpiled to avoid a processing bottleneck.

"(6) The stockpile objective for any material acquired for the stockpile under this Act shall be reviewed once every four years by the interagency committee referred to in paragraph (1). A revised objective for such material shall be established only if the average annual quantity of imports of such material during the five calendar years immediately preceding the current calendar year increased or decreased by more than 10 per centum of the average annual quantity of such material imported during the base period applicable to such material at the time of the preceding mandatory review under this paragraph."

Comment

As indicated before, there already exists an interagency process for reviewing stockpile goals and the potential domestic defense, economic and international impacts of any proposed commodity actions. With all these factors constantly changing, it is difficult to accept a rationale that would review these changes only every four years. It was from the impact on recent revisions of stockpile "objectives" that the need for a more flexible concept which we now call "goals" arose. The national security will not be served by merely reducing the variability of a statistical indicator. Indeed, we believe the opposite.

"(7) Nothing in paragraph (6) shall be construed to prohibit the head of the agency and the advisory committee referred to in paragraph (2) from conducting a review of the stockpile objective for any material at any time other than that prescribed by paragraph (6); but in any case in which such committee determines that the stockpile objective for any material should be computed in a manner other than that prescribed in paragraph (3), the head of the agency shall notify the Congress in writing of that determination and set forth the proposed new formula for computing the stockpile objective for such material. The new formula shall become effective with respect to such material unless, within a period of ninety days after the day on which the Congress was notified by the head of the agency, either House of the Congress agrees to a resolution disapproving such formula."

Comment

The suggestion that exceptions to the "net-import" approach could be handled by asking for a review by the Congress is impractical because of the special expertise required to adequately review goals. Goals are not simply the result of hundreds of thousands of computer calculations—the computer is merely a starting point. The proposed goals and their related parts, supplies and requirements, are reviewed on a material-by-material basis at several levels. This is a detailed and time consuming process that, unfortunately would take more time to review than any Congressional Committee is likely to be able to spare. Further, our methodology is under constant scrutiny by Congress's investigatory arm, the GAO. We should also point out that after the last goals were established—the first under the new policy guidance—stacks of data compilations about six inches high revealing the intimate details of the stockpile goals were provided to each of the staffs of the Subcommittees concerned with stockpiling for review, comment, or other useful purpose.

The exception procedure suggested would necessitate an appeal to the Armed Services Committees of the Congress, because of the variables noted, for practically the entire list of strategic and critical materials—hence, it is impractical. From a stockpile management standpoint, it does not seem reasonable to deliberately provide for an “exception” procedure for contingencies or variables affecting the stockpile materials in view of the experiences learned from WW II and Korea and the thoroughly researched judgments which have been made concerning the effects of future wars on the supplies of and the demands for strategic and critical materials. The Annual Materials Plan provides a mechanism for the presentation of the results of this analysis along with the rationale underlying the specific list of materials proposed for acquisition and disposal.

Senator HART. I have a couple of final specific questions.

It is my understanding that in Paris this April, Secretary of State Vance offered to the international tin buffer stocks some 3,500 to 5,000 tons of tin from our strategic stockpile. It is my understanding that that action would require authority by the Congress to be enacted.

Are you aware of any legislative proposals in that regard to carry that out?

Mr. ROYAL. I would like to ask Mr. Zabrowski and Mr. Gionfriddo to respond to that.

Mr. GIONFRIDDO. Draft legislation is being circulated throughout the Government for comments.

Senator HART. Do you have any timetable for that? Do you know when that will be?

Mr. GIONFRIDDO. I would estimate in the near future, say perhaps within the next 30 days.

Senator HART. What can we expect within the fiscal 1979 budget regarding stockpiles? Will there be, as far as you know, any requests for acquisitions or disposals?

Mr. ROYAL. The Federal Preparedness Agency has included an amount for acquisitions in its budget request submitted to the General Services Administration central budget office. I am under the impression that General Services will forward that on to the Office of Management and Budget.

I suspect that what they do with it will depend on the results of the NSC review, which I feel surely will be available by the time OMB takes action on that.

Senator HART. Mr. Royal, we want to thank you for your testimony and your answers here this morning. We appreciate your taking the time to come down.

We think your remarks have been very helpful to us, and we encourage you to encourage the administration to the degree that you can to expedite its study and policy planning and communications with us.

Mr. ROYAL. We are very anxious to do that, too, Senator.

Senator HART. Thank you. Gentlemen, thank you all.

At this point, I would like to submit a brief statement on behalf of Senator Bartlett, who was unable to be with us this morning for the stockpile hearing.

[The prepared statement of Senator Dewey Bartlett follows:]

STATEMENT BY SENATOR BARTLETT ON STRATEGIC STOCKPILES

Mr. Chairman, I want to join with you in welcoming Congressman Bennett as well as Mr. Royal and Mr. Strauss. I am sorry that Senator McClure could not

be here to testify. Also, Mr. Chairman, I would like to commend you for holding these oversight hearings on our stockpiles of strategic materials. Although it is unlikely that any legislation will be enacted this year, our present stockpiles of strategic materials are woefully in need of attention from Congress.

The Strategic and Critical Materials Stockpiling Act has directed that the President maintain supplies of critical materials such as aluminum, copper, opium, industrial diamonds, rubber, shellac, feathers and down, silver, and the like so that in times of national emergency our Nation will not be dangerously dependent upon foreign sources.

The law provides that the President set objectives based upon strategic needs. Yet our inventories seldom match the objectives set because of difficulty in getting authorization for acquisition or disposal. The law provides that the stockpiles are for defense purposes. Still, sales are frequently justified on the grounds that they may aid the economy, balance the budget, and reduce inflation. The law provides that sales shall be conducted in a manner such that the market price is not significantly impacted. However, past history, economic theory, and the opposite positions taken by the lobbyists for users and producers show that stockpile purchases and sales do influence prices. The law provides that buying and selling for the stockpiles shall be conducted in a manner that will minimize cost to the United States Government. Yet, the need to purchase materials when they are scarce—and the price is high, and the need to sell these materials when supplies are not dangerously low—and the price is low—make it difficult for the United States to implement that guidance.

I hope we can get at some of these issues today.

Senator HART. I have some questions for the record, Mr. Royal, on which we would appreciate your written responses for this record.

I thank you and I thank your colleagues.

Mr. ROYAL. Thank you for the opportunity to appear before this subcommittee.

Senator HART. Not at all.

[The following questions from Senator Hart and Senator Bartlett submitted to Mr. Royal for his written response:]

QUESTIONS SUBMITTED BY SENATOR GARY HART

(The following additional questions for the record were submitted by Senator Gary Hart.)

Question. With the moratorium in effect, have you continued any stockpile activity? Specifically, are you continuing to dispose of materials previously authorized to be disposed of by law?

Answer. The disposal of stockpile excesses has continued under the moratorium. Listed below are the materials authorized for disposal as of September 1, 1977.

Material	Quantity ¹	Value ¹
Asbestos—Amosite (short tons).....	72	\$31,255
Diamond bort (karats).....	2,600,975	5,990,733
Manganese battery gr. syn. dio. (short dry tons).....	72,016	1,807,744
Manganese—Metallurgical (short dry tons).....	71,906	229,747
Mica—Mus. film (pounds).....	970,564	608,430
Mica—Mus. splittings (pounds).....	217,091	136,027
Mica—Phlog. splittings (pounds).....	59,063	710,614
Quartz crystals (pounds).....	3	725
Talc—Steatite block (short tons).....	22,000	49,500
Thorium (pounds).....	1,643	17,867,769
Tin (long tons).....	3,463,480	30,925,391
Tungsten—Ores and concentrate (pounds).....		
Vegetable tannin:		
Chestnut (long tons).....	1,376	469,26
Quebracho (long tons).....	2,552	1,202,076

¹ Disposals between Oct. 1, 1976, and Aug. 31, 1977.

Question. Are you disposing of stockpile materials at the present time that would have to be reacquired if the Ford "goals" are adopted? (Provide details for the record.)

Answer. Acquisition of the following materials would be considered if the Ford "goals" were adopted. These materials were sold but not delivered prior to the October 1, 1976, change in stockpile goals.

Bauxite—Surinam.
Chromite—Refractory.
Manganese—Chemical.
Mica—Muscovite Block.
Rubber.
Silicon Carbide.

Question. I am aware of the efforts underway by OMB at the direction of the President to look at possible organizational changes within the Executive Branch. Certainly one of the most confusing areas is the federal handling of national disasters with responsibility spread over several Departments and Agencies. Can you tell us if the Federal Preparedness Agency in GSA is apt to be reorganized or consumed by some other agency and what effect, if any, this may have on GSA's management of the strategic stockpiles?

Answer. Given the bills currently introduced in the Congress (H.R. 8907 and S. 1209) to reorganize and improve the total federal emergency preparedness effort and the President's recent memorandum of August 25, 1977 to all Departments and agencies with respect to the same subject area, we presume that the FPA will be reorganized. If this is so, the form of the reorganization will depend on the recommendations of the Administration's reorganization teams and agency reactions. Briefly, the thrust of the Congressional bills would set up an independent agency and combine all existing federal emergency preparedness programs; to include the Federal Preparedness Agency, the Federal Disaster Assistance Administration (HUD) and the Defense Civil Preparedness Agency (DOD).

Assuming the Congressional recommendation for a unified emergency preparedness organization is adopted, it is likely that the stockpile "policy" unit would be subsumed in the new organization. Whether other operational stockpile-related units—Stockpile Disposal Office (FPA/GSA), Office of Property Management (FSS), or Office of Finance (GSA)—would be included in the amalgamation is not clear. The effect of this arrangement, or some variant thereof, would be negligible in terms of current and past policies and procedures with respect to the management of the strategic stockpiles. In the recent past, the strategic stockpile program was similarly managed. Prior to 1973, the "Office of Emergency Preparedness" (OEP) implemented the stockpile policy of the President and the NSC; the OEP transmitted the policy decisions into operating instructions for those elements of the GSA concerned with the sales, acquisition, storage, maintenance, inspection and rotation of the strategic stockpiles.

QUESTIONS SUBMITTED BY SENATOR DEWEY BARTLETT

Question. Do you believe that strategic materials stockpiled under the "Strategic and Critical Materials Stock Piling Act" as amended can, or should, be used to balance the budget, fight inflation, or "pump" the economy? Do you believe that this has been attempted in the past?

Answer. We do not believe that the Strategic and Critical Materials Stock Piling Act, as amended, permits the stockpiling of materials to balance the budget, fight inflation, or "pump" the economy. The specific statements in the Act referring to stockpiling for purposes of "national emergency" and the release of materials for purposes of the "common defense," clearly establish the intent of Congress with respect to the use of the stockpile. In addition, the exhortation to avoid market disruptions in disposals and acquisitions establishes a Congressional intent of neutral impact upon the economy to the maximum extent possible.

We do not believe that the stockpile should be used for economic purposes. We think that a separate stockpile for economic purposes should be considered on its own merit. Certainly were the defense and economic stockpiling functions

combined by amending existing legislation or passage of new laws, the quantities stockpiled for defense purposes would have to be the minimum held in such a stockpile, with "economic" purposes served by selling and buying quantities beyond those minimum levels. For example, we believe that even under existing legislation, the President could utilize materials excess to national security requirements for economic purposes, providing that the Congress has authorized disposal of the material. Efforts to combine these two functions—defense and economic—could jeopardize our defense capability because of potential conflicts between those two sometimes-competing goals. For example, severe problems could arise if the two stockpiles desired to buy or sell materials concurrently.

It is possible that economic considerations were the basis for some stockpile decisions in the past. The sharp drop in lead and zinc prices after the Korean conflict, together with large surpluses of these materials, was followed by establishment of new long-term stockpile goals for minerals in 1954. Non-mineral materials were excluded thus creating a two-level objective system which was to be implemented over a period time through purchases confined to "newly mined metals and minerals of domestic origin." These new goals were then justified by adopting pessimistic assumptions regarding supply available in wartime and by introducing a need to reduce bulk shipments in wartime. It has also been suggested that economic considerations predominated in the 1973 goal change when the planning period was reduced from a 3-year to a 1-year war, but this is uncertain.

In any event, the interagency Annual Materials Plan process now in effect precludes the occurrence of abuse in the future.

Question. Do you believe that present law permits the stockpiling of materials in order to reduce the adverse price effects of foreign producer cartels and embargoes? At what point do you believe that economic difficulties brought about by such actions by foreign producers would constitute "economic warfare" and therefore be a matter of national defense?

Answer. Our interpretation of the Strategic and Critical Materials Stock Piling Act as presently written is that it does not permit stockpiling to reduce adverse price effects of foreign producers or cartels.

The Strategic and Critical Materials Stocks Piling Act states that it is the intent of Congress to "... decrease and prevent wherever possible a dangerous and costly dependence of the United States upon foreign nations for supplies of these [strategic and critical] materials in times of national emergency." Releases of stockpiled materials under Section 5 are authorized "(a) on order of the President at any time when in his judgment such release is required for purposes of the common defense, or (b) in time of war or during a national emergency with respect to common defense proclaimed by the President, on order of such agency as may be designated by the President."

Economic warfare could in our opinion become a matter of national defense if producers for the Department of Defense could not meet production schedules and/or if the health, morale, safety or productivity of the economy were significantly impaired. Under present law the President would determine the point at which "a national emergency with respect to the common defense ..." has been created by action of foreign cartels or producers.

Question. Do you believe that our present procedures for buying and selling materials has an adverse effect on producers and users? Do you know of any instances where so-called "special interests" benefited greatly from stockpiles activity?

Answer. Stockpile disposal programs are conducted under legislative mandates which require that the programs be carried out in such a manner so as to protect producers, processors, and consumers against avoidable disruption of their usual markets and to protect the United States against avoidable loss on the disposals. Although the legislation is more lenient with respect to acquisition it is a GSA policy to conduct acquisitions with the same degree of market safeguards as used with disposals. This charge is complied with through consultations with U.S. industry and Government agencies affected by planned stockpile actions. The legislative requirements and corresponding procedures are sufficiently flexible to allow the implementation of programs for each material which protect the interest of producers, processors, and consumers against adverse impacts.

Our judgment that special interests have not unduly benefited from stockpile activity is concurred in by Mr. Simon D. Strauss of the American Mining Congress who said "... I would like to associate myself with what Congressman

Bennett said with regard to the technical performance of the General Services Administration. I believe that it has made a very conscientious effort at all times to minimize [market] disruptions."

Question. Are you aware of any stockpiles activity that has been directly linked to diplomatic considerations other than the need of the United States to stockpile strategic materials in accordance with present law? In particular, could you comment on any diplomatic considerations which may have influenced recent dealings in industrial diamonds, copper, and tin?

Answer. From July 1974 through May 1975, the United States worked with Israel on ways to improve the Israeli economy. In July 1974 the U.S.-Israel Joint Committee for Investment and Trade, co-chaired by the U.S. Secretary of the Treasury and Israel's Finance Minister, was established to identify ways to strengthen Israel's economic base in nonsecurity areas. Four subcommittees were set up to define ways to increase exports, improve capital investments, promote research and development, and increase supplies of raw materials. In October 1974, the subcommittee on raw materials recommended that a procedure be developed to facilitate Israel's access to the excess stockpile material on the most favorable terms of credit, maturity, and interest and on the basis of negotiated prices.

On May 23, 1975, an operating agreement was reached between the two countries. It provided that the United States would make available to Israel raw materials in the custody of the General Services Administration which are excess to U.S. stockpiling requirements when such material is available for export and when its disposal is authorized by law. The agreement stated that the sale of the material was to be negotiated and that the specific terms would be set forth in separate subsidiary agreements for each increment.

Tungsten and industrial diamond stones, excess to national security requirements were subsequently sold to the Government of Israel.

Although allegations appeared in the media suggesting that the previous Administration had undertaken negotiations regarding copper, we are not aware of any stockpile activities linked to diplomatic considerations with respect to copper.

A transfer of approximately 5,000 tons of tin to the International Tin Council buffer stock is being contemplated by the Administration. The tin is well in excess of national security requirements. Any transfer of tin will of course be subject to Congressional approval.

Question. Over the years, without considering the national security benefits gained, how much has the stockpiles cost the United States in real dollars?

Answer. The net cost of the national stockpile is reached by subtracting from the current value of the inventory the costs of its acquisition, maintenance, and administration and with adjustments for sales of stockpile materials. From 1946 through 1976, in 1967 constant dollars, the net cost of the national stockpile program has been \$3.54 billion.

This figure must be qualified, however. The index numbers used to convert current dollars to "real" dollars were obtained from the portion of the Bureau of Labor Statistics Wholesale Price Index dealing with metals and metal products. Many of the stockpile materials are not included in the index and a number of the materials do not trade in markets where prices are quoted frequently. Thus, the index numbers may not adequately reflect the "real" value of stockpile transactions.

It should be further stated that the stockpile program was never intended to be a profit-making enterprise. Rather, it is (a) insurance against shortfalls of industrial materials in time of emergency, (b) insurance against errors in more optimistic war planning, and (c) a deterrent to potential aggressors. While due care is exercised to prevent the Government from suffering an undue loss of value, sales are proposed when materials are found to be excess to national security requirements, as required by legislative mandate.

Question. Do you believe that the stockpiles are a good hedge against inflation? Do you see them as a government investment? If so, have they been a wise investment?

Answer. Yes. The stockpiles have been acquired over the years for reasons of their criticality and strategicness in relation to the national defense. It is fortuitous that they have been a hedge against inflation.

The following table depicts the current value of the stockpile less the costs for the past 30 years, and illustrates the appreciation in asset values:

	<i>Cost (billions)</i>
National stockpile-----	\$5.4
Supplemental -----	1.6
DPA -----	1.9
Total -----	8.9
Storage costs-----	.6
Personnel costs-----	.2
Total cost of program-----	9.7
Sales -----	-7.2
Net expenditures-----	2.5
Value of current inventory-----	8.6
Increase in value of assets-----	6.1

In the very restricted sense that the government has invested in the stockpiles for the national defense of the nation, it can be stated that they are a wise investment.

Question. What do you believe the stockpiles have cost the United States in terms of higher prices for materials over the years?

Answer. We do not believe the stockpiles have cost the United States significantly higher prices for materials over the years. When stockpile acquisition actions have taken place over the years, they have typically been conducted in a manner that assisted in stabilizing the market place. In concert with the statutory mandate of the Strategic and Critical Materials Stock Piling Act not to disrupt markets, acquisition actions are phased so that buying takes place when markets are falling. The GSA has a good reputation for conducting stockpile activities in market operations over the years, as noted by Representative Bennett and Mr. Strauss of the American Mining Congress cited above.

In the pre-WW II days, stockpile appropriations totaled less than \$70 million. Subsequent to WW II, a number of materials were transferred to stockpile from Reconstruction Finance Corporation, but a considerable amount went back into the economy to satisfy pent-up civilian demand. As a result, at the outbreak of the Korean War, the stockpile was only 40% complete. Stockpile acquisitions in the early 1950's probably placed some upward pressure on materials prices.

In 1954, the Supplemental Stockpile was created through the Agricultural Trade and Development Assistance Act, and the program acquired \$1.6 billion of stockpile materials in return for barter of surplus agricultural materials. Thus, price effects here are at best indirect.

Active acquisition programs continued through 1959, then tailed off. Since then, major activities have been in disposals, which typically place downward pressure on prices.

While the Strategic and Critical Materials Stock Piling Act does not specifically prohibit the sharp run-up of prices, it clearly was the intent of Congress to avoid this if possible. To quote from Sec. 3a, "... purchases ... shall be made, so far as practicable, from supplies of materials in excess of current industrial demand ..." Existing GSA policy in this regard is to treat pending purchases in exactly the same manner as disposals, i.e., to spread purchases out over a period of time to avoid undue disruption of the markets of producers, processors, and consumers of these materials.

Question. If the United States tried to sell all of its strategic stockpiles over the long time necessary to complete the sales without disrupting the price according to present law, how long would it take?

Answer. A disposal program for the entire stockpile subject to present legal mandates would take approximately 15 to 20 years to carry out.

Question. Do you believe that the effect of our present stockpiles policy will be to "stick" the U.S. Government with large amounts of obsolete materials which it cannot sell without great loss? Could you name some of the materials in our stockpiles for which demand has been dropping and is expected to continue to drop.

Answer. The effect of the current stockpile policy would be to dispose of roughly 40 percent of the existing inventories over a long-term period, approximately 20 years. Technological obsolescence constitutes the principal reason why these

materials are no longer suitable to support our industrial and defense sectors in a national emergency.

Whether the U.S. Government is going to be "stuck" with obsolete materials which it cannot sell without great loss is a value judgment and difficult to project for the next 20 years. Current stockpile goal-estimation procedures include reviews of current and anticipated trends in technology. While these reviews cannot be expected to predict obsolescence with 100 percent accuracy, they are expected to minimize the degree to which the Government will find itself holding unsaleable inventories.

Some of the materials for which demand is expected to decline are: Feathers and Down, Asbestos Amosite, Quartz, and Diamond Dies.

Senator HART. Our final witness in these hearings this morning will be Mr. Simon Strauss, vice chairman of Asarco, Inc. He will be testifying in behalf of the American Mining Congress.

Mr. Strauss, we welcome you here today.

**STATEMENT OF SIMON D. STRAUSS, VICE CHAIRMAN, ASARCO, INC.,
APPEARING ON BEHALF OF THE AMERICAN MINING CONGRESS,
WASHINGTON, D.C.**

Mr. STRAUSS. Thank you, Mr. Chairman.

I believe that you were a fellow student of my son, Peter, at Yale Law School, if I may be permitted a personal comment.

Senator HART. Yes; you are absolutely right. I did not immediately make that connection.

We are very happy to have you with us, sir.

Mr. STRAUSS. Thank you.

Mr. Chairman, you have already identified me and my post, so I will proceed with the balance of my statement.

The stockpile of strategic and critical materials, intended to assure adequacy of supplies for the security of the United States, is authorized by legislation enacted by the Congress in 1946. Its history actually antedates that legislation. An earlier bill had been enacted by the Congress in 1940, prior to U.S. involvement in World War II.

During World War II, the U.S. Government was the sole importer of critical and strategic materials under wartime regulations. Large quantities of such materials remained on hand following the end of World War II in 1945. These materials were subsequently incorporated into the stockpile.

The amounts of materials to be stockpiled have been variously defined as goals, targets, or objectives in the ensuing years. Throughout the period of 31 years since the 1946 legislation, the amounts for individual commodities have been determined by the executive branch. Initially, this was the Army-Navy Munitions Board, but subsequently other agencies of the Government, including the Office of Emergency Management and, more recently, the Federal Preparedness Agency, have had the prime responsibility for establishing stockpile objectives. However, this work has been done in consultation with other Departments of the U.S. Government, including, notably, State, Treasury, Interior, Commerce—and I see I inadvertently omitted Defense—and, where agricultural commodities are involved, Agriculture.

Until 1962, the stockpile objectives were classified information. The public, including the producers and consumers of these materials, were

unaware both of the objectives and of the actual holdings in the stockpile.

In 1962, President Kennedy expressed the opinion that the stockpiles were excessive and requested an investigation of the methods of stockpile procurement and of the adequacy of the objectives. An intensive investigation under the chairmanship of Senator Stuart Symington lasted more than 2 years. As a consequence, stockpile objectives became a matter of public record for the first time. Not only were the current objectives announced, but the various previous changes in stockpile objectives were detailed.

Since 1963, further changes in stockpile objectives have been frequent and expensive.

In previous testimony before the Joint Defense Committee of the Congress, the American Mining Congress has tabulated changes in stockpile objectives that have occurred from the inception of the program through October 1976, the date of the most recent revision, for many of the major metals and minerals. These account for the bulk of the sums expended in stockpile acquisition. In the interest of time, I will not repeat this information, but the tabulation is attached and should be entered into the record of these hearings.

To cite a single example, there have been 10 different stockpile objectives for copper ranging from a minimum of zero to a maximum of 3.5 million tons. The original copper objective was 1,250,000 tons. The maximum objective, established in August 1954 was 3.5 million tons. The zero objective was set in the spring of 1973. The current objective of 1,299,000 tons was set in October 1976.

Later on, if you deem it appropriate, I would be pleased to comment further on this in view of Mr. Royal's testimony in regard to copper.

Comparable changes in equal magnitude have occurred for most other major stockpile materials.

Undoubtedly the perceptions of security requirements for strategic materials will change from time to time. Those responsible for the military protection of this country anticipate developments in the nature of warfare, the theaters in which future military activities may occur, the likelihood that access to imported sources will vary, and the duration of any conflict. Businessmen, perhaps, should not express opinions as to these military matters. However, it seems relevant to make the comment that all these estimates are assumptions, and frequently assumptions or perceptions prove to be wrong.

Those of us who are concerned with the provision of the basic raw materials on which both the security and the economy of the country depend believe that regardless of the nature, duration or location of future military activities, a constant flow of basic raw materials remains essential to the Nation's well-being.

Furthermore, as the bulk of the stockpile consists of minerals which are exhaustible natural resources, it seems pertinent to observe that stockpiles of such materials do not deteriorate. Over a period of time, such stockpiles will enhance in value. Therefore, businessmen tend to question the wisdom of frequent changes in stockpile objectives based on unproven assumptions as to the nature of future military conflicts.

Under the law, the Congress must approve the disposal of surplus materials from the stockpile when the executive branch determines

that the quantities held are in excess of the amounts required for the Nation's security.

Since 1962, Congress has been asked by succeeding administrations to approve disposal of such materials. In each case, the relevant committees of the House and Senate have been assured that after a careful study of the stockpile objectives, the material to be sold has been deemed surplus to the Nation's needs.

Let me cite three examples of such sales.

At the end of 1963, the stockpile actually held 1,980,805 tons of aluminum metal; 1,121,691 tons of refined copper; and 228,361 tons of nickel—this was actually in the stockpile. Based on assurances from the executive branch to the Congress that these materials were not needed, Congress authorized the sale of the entire holdings of these three metals. Currently, there is no aluminum metal, refined copper or nickel in the stockpile.

During World War II, and again during the Korean war, the basic allocation system established by the War Production Board and its successor agencies was based on the distribution of three metals—steel, aluminum, and copper. Most of the nickel used in this country is consumed either as an alloy of steel or as an alloy of copper. There can be no question, therefore, that these three items are vital both to the national defense and to the basic economy of the country. Nevertheless, the stockpiles of all three were entirely liquidated, based on assurance from the executive branch that they were not needed.

New stockpile objectives were established in October, 1976, by the Ford administration. In testimony before congressional committees, the Federal Preparedness Agency then assured the committee members that these new objectives represented realistic goals for the country's future defense needs.

Under the 1976 program the stockpile goal for copper was set at 1,299,000 tons, slightly in excess of the amount actually held at the end of 1963, but subsequently liquidated on assurances that it was no longer needed. The new stockpile goal for nickel was set at 204,000 tons, which compares with the 228,361 tons that were held at the end of 1963—all subsequently sold on the assurance that they were not needed for the defense effort.

There is no new stockpile program for aluminum metal. However, the October 1976 program set forth a stockpile goal of 11,532,000 tons of alumina. Alumina is a fine, powdery material which represents the intermediary step in the reduction of bauxite ore to aluminum metal. Approximately two tons of alumina are required to produce one ton of aluminum.

The October 1976 objective for alumina was the first such objective ever established under the stockpile program. The quantity of alumina is equivalent to 5,750,000 tons of aluminum. This compares with the 1,980,805 tons of aluminum metal which the Government held at the end of 1963, all of which was subsequently sold because Congress was assured that it was unneeded.

There is a strong feeling in industry that alumina is not a suitable material to stockpile. If desired, I will be glad to provide details.

The mining industry believes that this record clearly shows that there has been a fundamental problem in the method of determining stockpile objectives. The purchase and sale of vast quantities of mate-

rials tends to be disruptive to the markets and therefore inconvenient both for the producers and consumers of these commodities. Moreover, given the trend of inflation, the exercise has been a costly one for the taxpayer.

It is our belief that a proper stockpile objective should be based on the country's proven dependence on imports of those materials which it either does not produce at all, or which it produces in quantities insufficient to meet domestic needs.

The argument is sometimes made that this yardstick may be different in wartime than in peacetime. My own observations over a period of many years, including three wars, is that the volume of consumption of materials does not vary greatly between war and peacetime. The uses to which the materials are put may change drastically. The limitations on the quantities of materials that can be successfully used in wartime are based on fabricating and manufacturing capacity, transportation facilities, and, above all, on the availability of manpower.

Looking at the record of frequent changes in stockpile objectives, the mining industry has the impression that considerations other than national security have at times dictated the revision of these objectives. Both President Johnson and President Nixon publicly stated that stockpile materials were being sold to control prices or combat inflation. The Nixon program of 1973 for stockpile liquidation likewise seemed related to a desire to balance the budget and perhaps to improve foreign exchange balances.

These are matters with which the administration and the Congress may rightly concern themselves. Yet the stockpile was authorized by Congress to bolster national security and therefore should be used only in connection with that purpose.

The mining industry therefore strongly supports the proposals introduced by Representative Bennett of Florida and by Senator McClure of Idaho. The Bennett bill provides that any funds obtained from stockpile sales be earmarked to pay for future stockpile purchases. This would greatly reduce the temptation to manipulate stockpile objectives for the purpose of raising funds from the sale of strategic materials as a means of balancing the budget or controlling prices.

If Congress believes that the Government should engage in commodity trading as a means of making profits or controlling prices, then it should authorize legislation clearly setting forth those objectives. The stockpile legislation now on the books obviously encompasses neither of these aims.

As for the McClure bill, Senator McClure in his statement before the Senate on June 30, 1977, explained the rationale by which stockpile objectives would be related to the proven degree of U.S. dependence on imports. The McClure bill is not set in concrete. It provides an orderly procedure for evaluation by the executive branch of situations where the proposed formula does not fit a particular circumstance. Admittedly, there are some commodities of great strategic importance but of relatively small volume for which a formula based strictly on imports might yield a result that would be unsatisfactory in terms of defense needs. Under the McClure bill, the executive branch would have the right to establish an objective differing from the formula, but

would have to explain its reasons for departing from the formula to the Congress and give the Congress adequate time to consider the matter.

In the same way the McClure bill provides that strategic commodities should be segregated into three major classifications of relative priority. In certain cases where the degree of import dependency is relatively high but the sources of imports are judged by the executive branch to be relatively secure—for example, Canada—Executive discretion would permit the classification of the material in a category of a somewhat lower order of priority.

Mr. Chairman, the American Mining Congress endorses both the Bennett and McClure bills. We believe that enactment of these measures would result in a more stable, less expensive, and more sensible stockpile program. The bills would eliminate the erratic performance which has increasingly characterized stockpile activities in recent years. They would remove some of the uncertainties that concern those foreign governments which are sources of the materials required for the stockpile. Furthermore, the proposals should result in substantial savings of taxpayer dollars.

Thank you very much for this opportunity to present the mining industry's views.

Senator HART. Thank you very much, Mr. Strauss. There is no question, based on your statement here this morning and your background and experience, that you are indeed an expert witness. We welcome your comments. We think they are extremely helpful to us.

Since you represent producers in minerals, it would seem that you would naturally support larger stockpiles. Yet, evidently your principal concern is the stability of the stockpiles, not their size.

Would you account for that?

Mr. STRAUSS. Yes, sir.

Curiously enough, Congressman Bennett asked me virtually the same question when I appeared before him to testify on his bill.

Speaking both as a private citizen and as an executive of a mining company, I believe it is a disservice to the Nation to tie up large sums of money in materials for which we are relatively secure. The press has spoken of the mining industry as lobbying for passage of this legislation in order to dispose of unneeded surpluses of materials.

The present situation in the market is such that it would be extremely convenient to the copper industry to sell 1,299,000 tons of copper to the Government. You may have read recently that there has been serious curtailment of copper production with very large stocks in existence.

However, our experiences in the last 31 years shows that that remedy, if it were a remedy, and if it proved excessive could only result later on in serious criticism. The existence of the large stockpiles which were not truly needed would constitute a great temptation to future administrations to realize sums of money.

So, frankly, given its druthers, the mining industry would just as soon not have a stockpile at all. But, on the other hand, as a private citizen and someone who was in Washington working for the Government during World War II, the value of the stockpile was undoubtedly proven in World War II, particularly in terms of the saving of manpower and transportation facilities.

We do believe that the Government should have a stockpile; but we believe the stockpile should be related to some kind of order of priority of dependence.

The 1976 objectives to which Mr. Royal referred as being essential would involve expenditures of huge sums of money for the acquisition of copper and alumina in amounts which seem to us not really required. The McClure formula with respect to copper would result in a stockpile of something like 400,000 tons.

It is interesting—and this is why I wanted to comment on Mr. Royal's remarks about how the consumption of copper has increased so dramatically in each of the three wars that have occurred—it is interesting to observe that in spite of that fact, prior reviews resulted in 1962 in a stockpile objective of 775,000 tons, and in 1973 in a stockpile objective of zero.

It is this kind of constant changing about in approach to what is a proper stockpile on the part of succeeding administrations that has convinced the mining industry that Congress must play a larger role than it has in the past. It has played no role whatever in the setting of stockpile objectives. It has had a sort of indirect role in that it has had to appropriate money. But the money has never been earmarked for particular commodities.

So, in effect, the Congress has had no voice in the setting of stockpile objectives.

The OPEC oil experience concerns really the entire public about our vulnerability to adverse actions from abroad. This feeling is now so deep seated that it seemed to us that the approach of import dependency was one which would merit public support not just currently but over a period of many years.

We are concerned, for example, that the Ford program greatly reduced the stockpile objective on tin, a commodity which is not produced at all in this country. It established a substantial stockpile objective for copper, a commodity in which we are 85 to 90 percent self-sufficient. It would have involved huge expenditures of funds, if required, and would have had, in time, an adverse reaction.

So, we believe that a sensible approach is a matter of import dependency.

However, the McClure bill does provide this definite out, to which Mr. Royal did not refer in his criticism of the McClure bill, which is that in any case where the administrative agencies feel strongly that the formula results in the wrong figure, they have the right to come to Congress and say that it is the wrong figure and this is what it should be. Congress has 90 days under which to consider it in the McClure bill. If Congress does not raise any objection, then the administration formula takes over.

So, it is not entirely as Mr. Royal described it. The executive branch has a very considerable degree of jurisdiction.

Let me now comment on the figures that Mr. Royal cited about the increases in copper consumption during World War II, Korea, and Vietnam.

Those increases in consumption in each case immediately followed a period of reduced economic activity. Actually, World War II came on the heels of the Great Depression.

The McClure bill provides that the import level not be determined on the basis of the most recent year, but on the average of the 5 previous years. This is in order to mitigate the effects of economic swings that may or may not be occurring. In my judgment, if you wanted to take a longer period of time, that, too, would be adequate. But at least we would get away from this ridiculous performance that is shown by the tabulation attached to my statement. We would not go from zero to 3.5 million tons in copper. Nickel is a commodity which is produced in large quantity in Canada but barely produced at all in the United States. Here the objective has been as high as 450,000 tons and as low as zero. For metallurgical manganese, on which our steel industry completely depends, the objective has been as high as almost 8 million tons and as low as 750,000 tons.

This kind of erratic pattern is what causes us to feel that the Congress ought to supply some guidelines, because this pattern has existed under the procedures for establishing stockpile goals that have been carried on for 30 years.

I heard nothing in Mr. Royal's statement about any plans to modify that procedure at all. So, since that procedure has created erratic results in the past, I have to believe that it will create erratic results in the future.

Senator HART. That leads to the other question that I asked the other witnesses, on which I believe you have commented somewhat already. That is, what is the effect, on purpose or by accident, of the stockpile program on our domestic economy and what steps can be taken or should be taken to prevent the economic spinoffs or ripples from the maintenance of stockpiles?

Do you have any additional thoughts on that?

Mr. STRAUSS. Yes, I would like to comment on that future.

First, I would like to associate myself with what Congressman Bennett said with regard to the technical performances of the General Services Administration.

I believe that it has made a very conscientious effort at all times to minimize disruptions. But every purchase affects the market; every sale affects the market. Obviously the timing of purchases and sales is enormously significant. If one had unlimited funds, this would be a splendid time to buy materials for the stockpile because prices for most of these commodities are low in relation to costs of production. In many cases purchases would represent a real saving to the taxpayer rather than if you had a planned purchase for so many tons every year, you would sometimes buy when the prices were very high.

I want to say that I think GSA has done a very good job. The people who have made the contracts for the Government in the General Services Administration have performed in exemplary fashion and in spite of the lengthy investigation by Senator Symington at that time, he uncovered no evidence of any kind of impropriety of which I am aware. None has been alleged since then, too. So, I think that this is a record of which the Government can be proud.

I do, however, point out that undoubtedly purchases and sales are going to affect the market. President Johnson made no secret of the fact when he directed that certain quantities of copper and aluminum be sold during the Vietnamese war that it was for the purpose of affecting prices.

In 1973, when we were in a period of price control under the Nixon administration, the General Services Administration was authorized to sell 250,000 tons of copper at public auction. It sold the copper at prices as high as \$1 per pound when the domestic producers were being held at 68 cents a pound and were required by directive from the Commerce Department to set aside some of that 68 cents copper for defense requirements.

It was hard for us to understand why, if we were trying to control inflation by holding down the price of copper, that did not also apply to the Government; or, if the defense needs were important, on the other hand, and this were a defense stockpile, why the stockpile copper was not used to meet the defense requirement. Nevertheless, that is what happened. Senator Goldwater made a rather eloquent statement about this at the time on the floor of the Senate.

So, there is no way of making an omelet without breaking eggs. In any stockpile, activity—either purchase or sale—is going to affect the market.

I want to repeat that I think a conscientious effort has been made to avoid the market effects to the maximum extent possible.

Senator HART. Do you think the so-called "undue disruption" provision in disposal law is adequate?

Mr. STRAUSS. Yes. I don't know how you can improve on that. I think that is the guideline and it is up to the officials in charge to pay attention to it. They will have pressures, of course, both from producers who are sellers and from consumers who are buyers—from opposite directions—and that tends to help keep them honest.

Senator HART. Do you have any comments on the barter provision in Congressman Bennett's bill and how that would work?

Mr. STRAUSS. I believe the barter provision is useful, but I believe the opportunities for it currently are very limited.

The barter provisions were of real significance at a time when we held huge surpluses of agricultural commodities which were available for barter. Currently those surpluses don't exist, or are relatively small.

So, I suspect that it is not a major feature of the legislation.

We do very much endorse the principle of segregating the funds. The interesting question that you raised with the Congressman in regard to the fiscal year aspect of it, of course, would be very difficult to apply because it might be that the funds would be flowing into the segregated fund toward the end of the fiscal year and commitments to disburse it could not be made before the June 30 deadline.

I can quite well understand why it would be difficult to put it on an annual basis, much as it might be desirable from a budgetary standpoint.

Senator HART. You mentioned that you thought you would recommend both the bills on the grounds that they encouraged congressional involvement. How far should the Congress go in getting involved in these matters?

How specific should the guidelines be?

Mr. STRAUSS. I think that the McClure bill provides very specific guidelines, but with sufficient room in the bill for administrative discretion. I think that it is up to Congress to be more specific than the original 1946 act was. This simply said that this was a problem, that

there should be a stockpile, and you fellows should figure out how much, which commodities, and so forth.

The McClure bill, for example, leaves the determination of what commodities shall be classified as strategic and critical still entirely in administration hands, which is where it belongs, because they are the people who know.

You made an interesting comment in your introductory remarks about the fact that with our technological developments, undoubtedly material requirements change substantially. I thoroughly agree with that.

Of course, these technological developments do affect the level of imports as they occur. If, for example, as has been widely reported in the press, the communications industry goes to glass optic fibers in place of copper, that eventually is going to show up in the statistics of the imports. That is another advantage of the McClure bill, which I think needs to be very much considered. By the periodic updating of the imports, when we develop increased sources within our own borders, imports will gradually diminish.

The Director of the Geological Survey in a very recent statement said that a new deposit in Montana has the potential of being a major source of platinum. At present, this country produces none.

Well, if that happens, our imports will drop and therefore the stockpile objectives requirement would gradually, under the McClure formula, be reduced.

By the same token, if we faced a situation in one of the strategic minerals comparable with that in oil, and our degree of domestic self-sufficiency should begin to diminish, our imports will increase. That is what has been happening in the case of zinc, for example. The objective will gradually rise, too. But the rise would be an orderly and a gradual one.

Therefore we feel that, in the first place, it would be less disruptive to the economy, both for producers and consumers, and in the second place, less expensive to the taxpayers than the erratic bouncing back and forth between zero and 3.5 million tons that we have done in the case of copper.

Senator HART. Mr. Strauss, thank you very much for your statement. It was an excellent statement and I think your comments have been extremely helpful to us.

We will keep the record of this hearing open for 7 days for interested parties to submit information for consideration. It will be included in the printed record.

We thank you again for your participation, sir. It is a pleasure to meet you. Your son, who is my law school classmate, has made an outstanding record both in law school and as a public servant as General Counsel to the Nuclear Regulatory Commission.

Mr. STRAUSS. He just went back to Columbia, as you may know.

Senator HART. So I do understand.

Mr. Strauss, thank you very much.

We do have written submissions for the record from Senators McClure and Chiles, Congressman McDonald, Mr. Frankland of the Silver Users Association and a letter from the General Accounting Office.

Those submissions will be included in our hearing record and incorporated for deliberations by the subcommittee.

[The information follows:]

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
Washington, D.C., September 8, 1977.

Senator GARY HART,
Chairman, Military Construction and Stockpile Subcommittee,
Washington, D.C.

DEAR SENATOR HART: I am disappointed that a long standing commitment requires me to be unable to appear before your committee's hearing on stockpile policy September 9th. I know that not only my bill S. 1810 will be a topic of discussion and comment but the realm of stockpile policy as a whole. For this reason I am particularly frustrated that I will be unable to participate for these matters are of great importance to me. Regardless, I am grateful to you for beginning the hearing process on this issue.

In my absence I respectfully request that the attached statement setting forth my views on stockpiling be included in your hearing record on September 9th. Further I would be happy to answer any questions you may have about my bill.

Best regards.
Sincerely,

JAMES A. MCCLURE,
U.S. Senator.

Enclosure.

PREPARED STATEMENT OF SENATOR JAMES A. MCCLURE

Mr Chairman, I appreciate very much the opportunity of presenting to your committee my feelings regarding this Nation's strategic stockpile and I regret not being able to come before your committee personally. My absence is certainly not by choice nor does it reflect in any way on my active interest in what I feel is a long overdue look at the manner in which our stockpile has been managed.

The subject of our Nation's strategic stockpile does not often receive the highest priority here in Congress. It is a little like insurance. Many of us don't like thinking about tragedy touching our lives but commonsense tells us we must protect ourselves and our families in the event of an emergency. So to is the need to provide this Nation with insurance against the reduction or possible elimination of vital mineral resources in a time of war or national emergency. We must face this need squarely and do everything in our power to protect ourselves. This takes a commitment of will and tax dollars—dollars that are recognizably difficult to allocate for the maintenance of a viable stockpile when there are so many other pressing needs. However, I feel few will argue with the wisdom of providing a hedge against the unknown. For this reason I am very pleased your committee is beginning the process of hearings into stockpile policy and I commend you for it.

Last June, I introduced what I feel is a fairly comprehensive bill dealing with the way levels of commodities within the stockpile are established and maintained. This bill, S.1810, which is before your Committee provides you with a viable alternative to the way stockpile goals have been set in the past. The bill is based on the belief that the amount of a specific commodity or mineral within the stockpile should be directly related to our dependency on foreign sources for that specific material. Because we are dependent on foreign sources for so many of our raw materials I feel it is vital that we structure our stockpile on the extent that we are dependent on imports for our needs. If the level of individual commodities within our stockpile cannot supply us with at least that amount of material which we normally must import, then we leave ourselves far too vulnerable. Thus my bill offers specific guidance with respect to the quantity of material which should be maintained in this country's stockpile by setting forth goals directly related to the degree of this country's import dependence for each of the critical materials in our strategic stockpile.

My bill provides that the executive branch should continue to designate the materials that are needed for the stockpile. But, the bill recognizes that an order of priority exists with respect to the quantity of each material stockpiled

and that fundamental to that priority is the dependency this Nation has on imports to meet raw material needs.

The United States is obviously most vulnerable to supply difficulties with respect to commodities which it does not produce in any significant quantities. In the bill these materials are designated as class A. A second group of commodities, those designated as class B, represent materials of which the United States has some production but is unlikely to achieve self-sufficiency even with severe rationing or substitution in time of national emergency. Finally the bill designates as class C materials those commodities which this country produces in substantial quantities but for which it has some import dependence. Thus, the bill proposes that the stockpile objectives be equal to 3 years worth of net imports for those materials assigned to class A, 2 years of net imports for class B materials, and 1 year of net imports for class C materials.

The executive branch is authorized to designate the classification of the individual commodities under the terms of the bill and in so doing will be expected to calculate average annual U.S. net imports of each. These calculations will be based on the 5 calendar years immediately preceding and the calculations will be made at least once in each Presidential term.

It is clear, of course, that when the stockpile is buying imports will tend to rise; when the stockpile is selling imports will tend to fall. Thus, for example, when the tin stockpile was being acquired tin imports were far above normal. When the Treasury was selling silver in the late sixties, the United States became a exporter for a time even though domestic production is inadequate to meet domestic demand.

Therefore, in calculating net imports the bill requires that stockpile purchases be deducted and that stockpile sales be added to arrive at figures not influenced by stockpile activities.

The bill further recognizes that in some special cases the formula outlined may not yield a proper result. In such cases the executive branch has the right to propose a different objective, explaining the circumstances to the Congress, and the exception shall be permitted unless the Congress denies it within 90 days of submission.

Additionally this bill embodies requirements that funds appropriated for the acquisition of strategic and critical materials be specifically authorized by law. The bill establishes a separate fund within the Treasury to be known as the strategic and critical materials procurement fund and proposes within the General Services Administration a program to acquire strategic and critical stockpile materials through barter with foreign countries. These specific provisions are identical to those found in Congressman Bennett's bill, H.R. 4895, which passed the House on March 31, 1977. I included the provisions of Congressman Bennett's bill because I felt that the aim of his legislation and of mine complement one another in purpose and practice by bringing a more direct involvement of Congress in the setting of stockpile goals and by establishing the ability to readily acquire critical materials when needed through a fund specifically for that purpose.

To explain my reason for introducing this legislation we must look back over the history of our stockpile. The concept of a stockpile was initiated in 1944 when it became clear that World War II was winding to a close and that large amounts of critical and strategic commodities, procured by the U.S. Government to insure adequate raw materials for the war effort, would be in the Government's possession at war's end.

Experience in World War II clearly showed that reserves of these materials were not only essential to the production of military weapons and ammunition—but that they also would constitute important reservoirs of manpower, transportation, and energy that would mitigate wartime shortages. Thus in 1948 a bill (50 U.S.C. 98h(a)) authorizing the stockpiling of critical and strategic materials, was passed with no real opposition and has remained on the books ever since.

Under terms of the original legislation, both the designation of the materials to be acquired and the amounts to be held have been determined by the executive branch. Individual agencies have been designated from time to time to coordinate this work, but a large number of departments and agencies have been involved in the actual implementation of stockpile objectives.

Congress' role has been limited to providing the funds for purchase of the materials, to holding hearings from time to time on the direction of the program, and to authorizing disposals of materials when the executive branch certifies that a surplus is on hand and should be sold.

Until 1962, neither Congress as a whole nor the public was informed as to the amounts of the stockpile objectives for individual commodities. When President Kennedy expressed the view that the amounts held in the stockpiles appeared excessive, congressional investigations began and the objectives for the first time became public knowledge. It became apparent that frequent changes in objectives had in fact occurred between 1944 and 1962. In the 15 years since 1962, still more changes have been made.

All of us recognize that conditions do change—that thinking as to the nature of future military and defense problems is certain to be affected by technological and political developments. But as one looks at the pattern of the changes in stockpile objectives for individual commodities over the last 33 years—since 1944—it is hard to escape the impression that considerations other than the national security have influenced the setting of the objectives. These considerations appear to include the purchase of materials to improve U.S. relations with other countries; the sale of commodities in an effort to control prices or reduce inflation; and the sale of commodities to help balance the national budget, since proceeds from sales revert directly to the general funds of the Treasury.

Each of these considerations may be of merit—but they are not authorized by the existing legislation and they may run counter to the avowed purpose of the program—which is the national security. The policy statement of the 1947 act was to decrease and prevent a “dangerous and costly dependence” on foreign nations for raw materials in case of war. Specifically the policy statement of the 1946 act read as follows:

That the natural resources of the United States in certain strategic and critical materials being deficient or insufficiently developed to supply the industrial, military, and naval needs of the country for common defense, it is the policy of the Congress and the purpose and intent of this Act to provide for the acquisition and retention of stocks of these materials and to encourage the conservation and development of sources of these materials within the United States, and thereby decrease and prevent wherever possible a dangerous and costly dependence of the United States upon foreign nations of supplies of these materials in times of national emergency.

In reviewing the erratic history of the stockpile objectives, however, it is difficult to conclude that we have followed the original intent of the stockpile. Instead we see a pattern of stockpile goals that have proved costly and disruptive. Let me state a few examples.

Aluminum is obviously a commodity of the highest military significance—essential to the aircraft industry and of great importance for Army and Navy purposes. The United States is the world's largest producer of aluminum but 90 percent of its production is dependent on the import of bauxite or of the immediate product—alumina—made from bauxite; 4 tons of bauxite will produce 2 tons of alumina which will produce 1 ton of aluminum. Stockpile expense can be minimized by stockpiling bauxite—currently 4 tons of bauxite would cost, landed, about \$100. On the other hand, stockpiling of alumina would have the advantage of conserving processing time, chemicals, and energy. Two tons of alumina would cost about \$300. Alumina is more difficult to stockpile since it is a fine powdery material that readily absorbs moisture and hence must be stored indoors. Stockpiling aluminum metal would have the advantage that one would be stockpiling manpower and energy—both in short supply in terms of national emergencies—but it would be expensive. One ton of aluminum at today's market would cost \$1,000—more than three times the cost of 2 tons of alumina and about 10 times the cost of 4 tons of bauxite.

What has been the record of the stockpile targets for these three related materials? In 1944 the objective for Surinam bauxite was 4,400,000 long tons—equal to 1,100,000 tons of aluminum. This objective was reduced early in 1950 to 3,250,000 tons and then after the Korean war broke out it was raised to 3,900,000 tons and a year later to 5,000,000 tons. By 1954 it reached 12,500,000 tons—equal to more than 3,000,000 tons of aluminum. Reductions made in 1958, 1959, and 1964 dropped the goal to 5,300,000 tons. In 1973 this objective was completely eliminated. The stockpile contains 5,300,000 tons of Surinam bauxite, all now considered surplus.

Another type of bauxite, produced in Jamaica, was first classified as strategic and critical in 1954—when an objective of 2,800,000 tons—equal to 700,000 tons of aluminum—was established. This rose by stages to a maximum of 5,000,000 tons or 1,250,000 tons of metal in 1964, was cut modestly in 1973, and sharply dropped in 1976 to 523,000 tons equal to 25,000 tons of aluminum. The stockpile holds 8,590,000 tons of Jamaica bauxite equal to about 2,100,000 tons of aluminum.

No stockpile objective existed for alumina until October 1, 1976. After being at zero for 32 years it was in 1976 suddenly established at 11,532,000 tons—equivalent to about 5,750,000 tons of aluminum metal.

The first objective for aluminum metal was a modest 250,000 tons established in 1949. This rose to 700,000 tons in 1950, 2,000,000 tons in 1952, and 2,500,000 tons in 1954. It then started to recede—down to 290,000 tons in 1954, but being restored to 1,290,000 tons in 1959, dropping once again to 450,000 tons in 1963, and being completely eliminated in 1972. The actual stockpile holdings—once over 1,500,000 tons—have all been sold.

To summarize—if one adds the aluminum content of bauxite and alumina objectives to the objectives for the metal—the combined program for these materials began with a target equal to 1,100,000 tons aluminum; by 1954 it reached a peak equal to 6,350,000 tons of aluminum; by 1964 it was down to 3,000,000 tons equivalent; in 1973 it was only 1,150,000 tons—all in Jamaica bauxite; and in 1976 it climbed back to 5,875,000 tons—largely to be stocked in the form of alumina—a material that most industry experts consider unsuitable for stockpiling.

Copper is another defense essential but the United States is more self-sufficient in copper supply than it is in aluminum. At the end of World War II net imports amounted to one-quarter to one-third of U.S. requirements. Thanks to the development of added mining capacity in the United States, this has now been reduced to less than 10 percent.

Yet the history of copper stockpile objectives is as erratic as the history of the aluminum objectives. In 1944 the copper objective was set at 1,250,000 tons; in 1950 it was raised to 2,100,000 tons; in 1952 it was reduced to 1,100,000 tons; in August 1954 it was increased to 1,600,000 tons and then the next month more than doubled to 3,500,000 tons. In 1958 this figure was dropped to 1,900,000 tons and in 1959 to 1,000,000 tons. Following President Kennedy's conclusion that stockpile objectives were excessive the figure was again cut to 775,000 tons in 1963 and remained there until 1973, when under the Nixon version the objective was completely eliminated. But in the October 1976 review a new figure of 1,299,000 tons was picked as the copper objective—just 49,000 tons more than the original 1944 target. Yet in the intervening period the figure has been as high as 3,500,000 tons—which at current market would be worth \$5 billion—and as low as zero.

The actual maximum amount of copper held in the stockpile was about 1,250,000 tons. Most of this was sold during the Vietnam war or transferred to the mint for coinage. The last quarter million tons was auctioned off in early 1974 at prices far in excess of the 68-cent ceiling then imposed on domestic producers under price controls. Senator Goldwater will recall his own eloquent comments at that time on the double standard which the Government was following in this transaction. So there is no copper in the stockpile now.

A third example of shifting objectives is that for metallurgical chrome ore—an essential for the production of stainless steel. The United States has no domestic production. As the Senate well knows from debates on the Byrd amendment the principal sources of this material are Russia, Rhodesia, South Africa, and Turkey—all countries physically remote from us and replete with political problems. The metallurgical chrome objective was originally 2,352,000 tons in 1944, rose to a high of 6,160,000 tons in 1954, underwent six changes in the next 19 years, most of them downward, dropping to a figure of 2,910,650 tons before being slashed to 444,710 tons in 1976. Present holdings are 2,504,000 tons.

The history of lead, manganese, nickel, platinum, tin, tungsten, and zinc is similar to the three materials cited. These 10 basic metals and minerals accounted for more than two-thirds of the aggregate value contained in the stockpile when the congressional investigations of 1963–64 were undertaken. In each one there is a pattern of frequent and violent shifts in objectives.

A considerable share of the present value of the stockpile is represented by an 11th commodity—silver. There was no objective established for silver when the stockpile program began despite the numerous important military and essential civilian uses of this versatile metal. The reason for the omission was obvious—the U.S. Treasury then held huge reserves of silver, accumulated during the thirties under the terms of the Silver Purchase Act of 1933.

But by the mid-60's the Treasury's reserves had been drastically cut as world consumption of silver has consistently exceeded new mine production, and the gap was met largely by drawing on Government stocks—not only of the United States but also of other countries.

In 1965 during the Johnson administration, an initial silver objective of 165,000,000 ounces was established. This was reduced to 139,500,000 ounces in 1970, to 21,665,000 ounces in 1973, and to zero in 1976. This despite the fact that the U.S. mine production of silver is equivalent to only one-quarter of this country's industrial needs with another quarter being obtained through recycling of old silver scrap. Currently about half the country's silver requirements are imported.

Although the public tends to think of silver as an ornamental metal used for silverware, jewelry, and these days—limited coinage, the fact is that the greatest part of the demand for silver is industrial—for films, electrical contacts, brazing alloys, batteries, mirrors and a myriad of other applications.

During World War II, in addition to lend-leasing silver to our Allies in order to shore up confidence in their currencies, enormous quantities of silver—several hundred million ounces—were taken from Treasury stocks for direct war applications. Every military aircraft, for example, was so equipped that action films were taken whenever the guns were fired. Silver alone made possible the hundreds of millions of feet of film of actual combat which not only provided a permanent record of the action but also gave our military leaders an invaluable insight into the strengths and weaknesses of enemy equipment.

In the interests of time I will not elaborate on all the other military uses of silver but I will cite one additional example of silver's vital wartime role. Every lifeboat on U.S. naval craft and in the merchant marine was equipped with desalting kits to enable conversion of sea water into potable water. Silver chemicals made this possible and many millions of ounces of silver were required.

The Treasury today has minimal stocks of silver. The Congress in late 1976 wisely defeated a bill to authorize sale of the strategic stock—which is actually 139,500,000 ounces—in spite of the administration request to do so.

As the examples I have cited indicate, the frequent and violent shifts in stockpile objectives—occurring for reasons having little or nothing to do with defense—cannot help but bring me to the conclusion that not only have we failed in providing a viable balanced stockpile but that the wide variance in stockpile objectives have proved costly to the taxpayer and extremely disruptive to industry where planning for expansion has been frequently deferred when the stockpile became an active seller; and on occasion the nonrecurring stockpile demand stimulated expansion that was not needed.

A final and most vivid example of this can be seen under the October 1976 stockpile goals. Here the taxpayer is being asked to reacquire at higher prices vast quantities of materials once in the stockpile but released when Congress was assured by the executive branch that they were no longer needed. I refer specifically to the critical metals: aluminum, copper, nickel, and zinc as four such items.

At the end of 1963 the stockpile actually held 1,980,805 tons of aluminum metal, 121,691 tons of refined copper, 228,361 tons of nickel and 1,581,000 tons of zinc. Since that date all of the aluminum, copper, and nickel has been sold by the U.S. Government. Of the zinc all but 347,000 tons has been sold. Now, under the October 1976 program, we are told that the stockpile needs to acquire 11,532 tons of aluminum, equivalent to 5,750,000 tons of aluminum. The objective for nickel was set at 204,000 tons and the objective for zinc has been set at 1,313,000 tons.

Thus the taxpayer is now confronted with buying quantities either equal to or in excess of the amounts previously held.

At the same time we were told we can safely dispose of large quantities of tin and all the silver in our stockpile—despite this country's proven dependence on both. How many years down the road will it be before we are advised of the need to reacquire silver and tin?

It seems to me that Congress should set the guidelines for the stockpile program and my bill embodies that concept. The provisions of my bill and the procedures proposed I feel will reduce if not eliminate the chaos of the past and will introduce stability into stockpile objectives.

Two additional factors must be explained about this bill. Because the bill calls for stockpile objectives based on import dependency the question may well be asked why net imports in peacetime should be considered an appropriate measure of wartime needs. Is it not a fact that wartime economy is a very different proposition from a peacetime economy? The answer to that question is of course in the affirmative. In war the country turns its efforts to military equipment and installations, to ammunition and military uniforms. It cuts back sharply on the production of automobiles, household goods, residential construction—and may even prohibit entirely the output of certain items.

Yet while basic materials may be used for different purposes the volume of basic materials used changes less drastically. The reason for this is clear when one considers the bottlenecks of manpower, transport, energy and fabricating capacity that inevitably introduce restraints on wartime demand for materials.

In recent correspondence an official of the Federal Preparedness Agency justified the proposed 11,532,000-ton objective for alumina because he said the wartime need for aluminum would be 10,000,000 tons annually as against 7,000,000 tons in peacetime. One must question these figures. How would 10,000,000 tons of aluminum be consumed when present fabricating capacities are fully occupied? How would the possession of a large aluminum stockpile enable the country to produce additional aluminum when the reduction plants now in existence are working to capacity? How could the construction of energy-intensive additional aluminum reduction capacity be justified in wartime in view of the call for energy conservation?

Stockpiles are insurance against supply interruptions in times of national emergency. No one can insure against every conceivable emergency. A sound insurance plan is one that insures against probable risks at reasonable—but not excessive costs.

Calculations have been made as to the probable financial cost of implementing the bill I have introduced. Taking 15 of the most important commodities; including the 11 I have already mentioned, and assuming that the three proposed classifications are applied on the basis of present U.S. dependence, the cost of this proposal should prove to be less—at today's prices—than the cost of carrying out the program embodying the objectives announced in October of last year.

The following tabulation compares the costs for certain of the key materials which are involved in the stockpile program under two alternatives. The first alternative is the program announced on October 1, 1976 by the Federal Preparedness Agency. The second alternative is embodied in the legislative proposal I am introducing today.

Not all of the materials in the stockpile have been included in this analysis. However, the items included represent the largest part of the value of the present stockpile holdings or the proposed holdings under either the October 1, 1976 program or my proposal. Prices of these materials are constantly changing. The tabulation is based on prices prevailing as of February 25, 1977, based on information published in the trade press.

The October 1, 1976 Federal Preparedness Agency program called for very large purchases of alumina, copper, nickel and for substantial disposals of tin, silver, ferrochrome, and bauxite. The net effect of this program would have been—for the materials studied—a net cost of \$1,475,000,000 assuming prices remained unchanged. However, in effect selling and buying the large quantities proposed would have been certain to have affected the market. Sales would have depressed prices and purchases would have increased prices so that in all probability the net cost would have been substantially greater.

Under my proposed legislation the quantities to be bought and sold would be substantially smaller and therefore the market effects would be considerably less disruptive.

My bill calls for classification of materials into three categories—"A," "B," and "C". These classifications are to be made by the executive branch.

If the executive branch adopts the classifications shown in the tabulation, the net cost of the program would be comparable with that of the FPA program. However, since the quantities to be bought and sold are substantially smaller, the market disruption would be less and the estimate, therefore, can be considered a more realistic one.

Three commodities—nickel, zinc, and silver—are shown in this tabulation as "B" categories. This classification is open to some question. The United States is heavily dependent on imports of these three materials but the chief source of imports is from North American neighbors. In the case of nickel Canada is by far the largest supplier. In the case of zinc and silver Mexico, as well as Canada, is a substantial supplier.

Therefore the executive branch in considering these three materials might well classify them as "C" items rather than "B" items.

The result under my proposal would be as follows if these three materials are classed in the "C" category:

	Quantity	Value
Zinc (short tons).....	289,894	\$215,662,000
Nickel (short tons).....	110,666	533,406,000
Silver (thousand ounces).....	(50,274)	(232,015,000)
Total.....		749,030,000

Thus the net cost for these three materials would amount to only \$517,015,000. When classed as "B" materials the cost for these three materials would total \$1,947,592,000. Thus there is a difference of \$1,430,577,000 depending on how the Executive Department classifies the three items. If nickel, zinc and silver are classified as "C" items my legislation would require no appropriation of new funds.

Mr. Chairman, the procedures proposed in this bill will introduce stability into stockpile goals. If U.S. productive potential for a commodity increases, imports will decline and an orderly but gradual decrease in the objective will occur. If, on the other hand, domestic resources are depleted and production declines, imports will rise and the objective will also increase. To mitigate against frequent minor tinkering with objectives the bill proposes that objectives will be changed only when import levels of individual commodities as determined each 4 years have increased by more than 10 percent.

I believe the method of determining stockpile objectives that has been employed over the last 33 years has yielded an erratic pattern that could undermine national security; it has been expensive for the taxpayer; and it has been disruptive to industry. The proposal I am putting before you will avoid frequent changes in the stockpile program, will prove less expensive in the long run, will enable industry to plan more intelligently, and will, most important of all, insure a sensible level of protection for national needs.

COMPARATIVE STOCKPILE COSTS

Material	To reach October 1, 1976 objective			To reach targets under proposal		
	Purchase (sale)	Revenue (thousands)	Expenditure (thousands)	Purchase (sale)	Revenue (thousands)	Expenditure (thousands)
A materials:						
Tin (long tons).....	(171,626)	\$1,977,379		(71,396)	\$822,585	
Chrome ore (thousand short dry tons).....	129		\$17,341	(2,003)	268,326	
Ferro chrome (short tons).....	(361,857)	470,640		(304,747)	429,969	
Platinum (thousand troy ounces).....	861		141,262	1,200		\$196,858
Palladium (troy ounces).....	1,195,006		69,908	169,006		9,887
Industrial diamonds (thousand karats).....	(14,441)	173,292		2,663		31,956
B materials:						
Antimony (short tons).....	(20,584)	58,870		987		2,822
Bauxite (thousand long dry tons).....	(11,726)	328,328		10,387		303,436
Zinc (short tons).....	938,170		694,246	1,016,595		752,280
Nickel (short tons).....	204,335		984,895	221,331		1,066,815
Silver (thousand troy ounces).....	(139,500)	643,793		27,843		128,497
C materials:						
Alumina (thousand short tons).....	11,532		1,307,729			
Aluminum (short tons).....	(5,704)	5,476		318,319		305,586
Copper (thousand short tons).....	1,297		1,764,336	312		425,274
Lead (short tons).....	263,940		153,085	(421,821)	244,656	
Total.....		3,657,778	5,132,802		1,765,536	3,223,411
Net cost (thousands).....			1,475,024			1,457,875

Note: All prices as of Feb. 25, 1977.

U.S. SENATE,
COMMITTEE ON GOVERNMENTAL AFFAIRS,
Washington, D.C., September 19, 1977.

HON. GARY HART,
Chairman, Subcommittee on Military Construction and Stockpiles, Washington, D.C.

DEAR MR. CHAIRMAN: I introduced S. 1198, a bill to establish the authority and procedures to maintain an adequate supply of critical materials for our national security.

I appreciated your invitation to testify during the recent hearings you held regarding S. 1198. Since I was unable to appear in person, I would ask that you allow me to submit this statement for the record.

Thank you once again.

With best regards, I am

Sincerely,

LAWTON CHILES, *Chairman.*

Enclosure.

PREPARED STATEMENT OF SENATOR LAWTON CHILES

Mr. Chairman, I would like to thank you for the opportunity to submit testimony for the record on S. 1198, a bill to establish the authority and procedures necessary to maintain an adequate supply of critical materials for your national security.

This bill is a companion measure to H.R. 4895, which was introduced earlier this year by my distinguished friend, Mr. Bennett, the chairman of the House Armed Services Subcommittee on Seapower and Strategic and Critical Materials. H.R. 4895 already passed the House on March 31st of this year by a 373 to 24 vote. This bill also closely parallels S. 1810, a bill introduced by my distinguished colleague from Idaho, Senator McClure.

Congress established the authority to maintain these stockpiles almost 30 years ago to further the fundamental goal of protecting our national security. Some have asserted that, in the past, the government has changed stockpile policies in order to meet other goals—such as fighting inflation, or to balance the federal budget. These goals in themselves are laudable, but we need to closely examine whether using our national stockpiles is an appropriate means to reach those goals.

This legislation seeks to clarify the role Congress intends these stockpiles to play in protecting our national security as well as to provide the government with more effective tools to realize that goal.

The National Security Council has completed a study of our national stockpile system. That study revealed an imbalance in our stockpiles. Many items currently in the stockpile are simply not needed for our national defense, while other items of great importance to our national security needs are not in these stockpiles at all.

The solution to this problem will require the acquisition of substantial amounts of additional stockpile materials, and the cost of that acquisition may run into the billions of dollars. This legislation is designed to provide the need without placing an undue burden upon the taxpayers of this country. It is consistent with my determination to provide a strong national defense in an efficient, cost-effective manner.

This bill would provide the government with three mechanisms which will work together to go a long way toward correcting our stockpile imbalance in a cost-effective manner.

First: It would establish a special strategic and critical materials procurement fund, which would use the revenues from stockpiles in the future. Currently, such proceeds return to the General Treasury fund. The money in this special fund would be subject to the normal congressional authorization and appropriation processes.

Second: It would provide for the authorization of appropriations for the acquisition, transportation, and processing of materials for the strategic stockpiles. The lack of such authority in the present stockpile law would hinder our ability to correct the imbalance in our stockpiles. This bill would also authorize the transfer of excess stockpile materials at fair market values as payment for the expenses of acquisition, refining, or processing of needed materials. That way, we can exchange our excess material to acquire, refine, and process those materials we need.

Third: It would require the establishment of a coordinated government program to barter or exchange excess goods owned by the government to foreign countries for strategic materials. The authority to do so exists today and has been used in the past to exchange excess American agricultural commodities for strategic materials from foreign countries. This bill contains provisions to assure the active cooperation and participation of every appropriate department or agency and also requires each agency to submit a detailed report on its efforts to participate in the program.

S. 1810 contains these three mechanisms as well as a mechanism which relies on import dependencies to set stockpile objectives for each material. This mechanism relies on current consumption patterns as the basis for determining further requirements.

While such a determination should form the basis for setting stockpile goals for specific materials, other important considerations must be included in the formulation of an objective. For this reason, I would recommend that the Committee give due consideration to the concerns raised by the Administration.

Current stockpile policies represent the results of an interagency review conducted in 1975 and 1976 designed to modernize and streamline stockpile management. I understand that the current administration is assessing those policies, and I hope that the Administration acts quickly to make results of that assessment available to the Committee as it continues its deliberations in this area. In the final analysis, I feel confident that the Congress and the Administration will soon reach a consensus on how to proceed from here—never forgetting the important role these stockpiles play in protecting our national security.

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, D.C., September 8, 1977.

Hon. GARY HART,
Chairman, Subcommittee on Military Construction and Stockpiles, U.S. Senate,
Washington, D.C.

DEAR MR. CHAIRMAN: Attached is written testimony on the issue of stockpiling submitted by Mr. Scott D. Dial, a Silver Specialist for the Frazier Division of Clayton Brokerage Company.

A staff member of your Subcommittee, Mr. Jim Smith, informed me that personal testimony was not now being accepted, however a written testimony by Mr. Dial would be welcomed. Due to Mr. Dial's expertise in this field, I would appreciate it if his written testimony would be included in the permanent record of hearings on stockpiling to be held by your Subcommittee on September 9, 1977.

Sincerely,

LARRY P. McDONALD.

Enclosure.

CLAYTON BROKERAGE CO.,
September 9, 1977.

Hon. GARY HART,
Chairman, Subcommittee on Military Construction and Stockpiles, U.S. Senate,
Washington, D.C.

DEAR MR. CHAIRMAN: I am writing to request that my enclosed paper, regarding silver in the Strategic Stockpile, be made part of the permanent hearings record. As a Silver Specialist for the Frazier Division of Clayton Brokerage Company, I deal exclusively in silver, both for an investment clientele as well as commercial interests.

My paper briefly outlines the major points that cry for an increase in the silver component of the stockpile and suggests the dangers of any release of silver. In short, silver is absolutely vital to our defense needs and the increasing demand, critical supply situation and heavy import reliance, are all irrefutable reasons to increase silver's level in the stockpile.

Having been involved almost exclusively in silver throughout my career, I have traveled to India (at the request of The Bombay Bullion Association) as well as hosted the World Silver Seminar II in Chicago in April 1977. I am extensively involved in silver and welcome this opportunity to present written testimony before your Subcommittee on S. 1810. Additionally I would welcome the opportunity to talk with you or any of your colleagues on silver at any time.

Sincerely,

SCOTT D. DIAL.

SILVER—A NEEDED INCREASE IN THE STRATEGIC STOCKPILE

(A) Summary of Conclusions:

1. Silver is absolutely vital for the national defense.
2. Current and Future supplies of silver are assuredly tight or critical.

3. Proposed new weapons systems alone could consume far more silver than currently exists in the strategic stockpile.

4. The United States is heavily dependent upon imports from very few foreign suppliers.

5. Chronic opposition to an adequate amount of silver in the strategic stockpile emanates almost solely from one special interest group: The Silver Users Association.

(B) Background of Conclusions: 1. Silver—Vital for the National Defense: (a) Total United States silver usage in World War II (consumption and allied material loans) totaled 900 million ounces, and requirements for a modern war would be at least 300 million ounces per year.¹

(b) "Silver has unique properties: high electrical and thermal conductivity accompanied by unusually high resistance to corrosion and extreme photosensitivity. In most of its uses, there is no real substitute."²

2. Future Supplies, Tight or Critical—"Existing stocks are low."³ "Among significant minerals, the only ones whose reserves are assuredly tight or critical are silver and tin."⁴

3. Proposed New Weapon Systems:

(a) Indicated silver requirements for the following proposed weapons systems are: Cruise Missile: 68 million oz. thru 1986.⁵ MX Missile: 163 million oz. thru mid 1980s.⁶ Trident Submarine: 205 million oz. thru late 1980s.⁷

The total indicated requirement, 436 million ounces is more than twice the current, entire United States Government holdings of silver.

(b) Energy is critical to defense. Alternatively energy research (precipitated by the petroleum embargo with our heavy dependence on imports from a limited number of foreign suppliers) indicates solar energy as a promising candidate for energy relief.

"The major active uses of solar energy . . . are based on direct collection of the sun's heat . . . (accomplished by) . . . mirrors. These use a silver backing . . . silver seems to have the field to itself as far as mirrors are concerned."⁸

(c) The most recent itemization of United States import reliance of various commodities for 1976 shows:⁹

Net Import (percent/consumption) :

Silver	-----	47
Petroleum	-----	41

Number of major foreign suppliers :

Silver	-----	3
Petroleum	-----	4

4. Heavy Import Dependence—Few Major Foreign Suppliers:

(a) Since 1970, United States net silver imports have averaged over 65 million ounces per year, or more than 45 percent of consumption.¹⁰

(b) The United States is primarily dependent upon Mexico, Peru, and Canada for virtually all imports.¹¹

Heavy import reliance coupled with so few foreign suppliers seems untenable from the standpoint of national security.

5. Chronic Opposition—The Silver Users Association—Since its inception in the 1960s, the Silver Users Association has (understandably) geared its efforts primarily toward the following three areas, all as part of an endeavor to assure their members of adequate supplies of inexpensive silver:

(a) Release of all silver from government stockpiles.

¹ Hon. John R. Rarick of Louisiana, "Congressional Record", Appendix A 1161, March 9, 1967.

² Joseph Hilmy, "Silver: Supply and Demand Dimensions", The World Bank Commodity Paper, No. 22, July, 1976, rev., April, 1977, Summary.

³ Ibid., pp. 11.

⁴ Rex Basson and Benison Varon, "The Mining Industry and the Developing Countries", A World Bank Research publication, pp. 59, June, 1977.

⁵ Sheldon Wesson, "American Metal Market", July, 1977.

⁶ Vincent Tolino, Director, DOD Precious Metal Scrap Recovery Program, "American Metal Market", May 26, 1977.

⁷ "Green's Commodity Market Comments", July, 1977.

⁸ Sheldon Wesson, "American Metal Market", September 2, 1977.

⁹ Bureau of Mines, U.S. Dept. of Interior, "Metals and Materials/A Monthly Survey", pp. 6, August, 1977.

¹⁰ Ibid., pp. 41.

¹¹ Ibid., pp. 6.

(b) Downplaying silver demand and emphasizing adequate supply.

In particular, their major lobbying efforts, through Representative Silvio Conte of Massachusetts have resulted in perennial bills calling for the release of silver from the Strategic Stockpile. In a pamphlet, "Questions and Answers on Current Silver Situation," regarding his bill, HR 257, lists both the Silver Users Association's "position" as well as "views" on the subject of silver's release, without attempting any presentation of an opposing viewpoint.¹²

Finally, a major contradiction in the position of the Silver User's position has just now come to light. In the widely read "Green's Commodity Market Comments" of September 7, (copy to be sent separately), the efforts of the Silver Users Association to discourage the Air Force to use less efficient nickel-based batteries rather than silver/zinc batteries for the MX Missile are outlined. The SUA's main argument that insufficient silver is available is in direct contradiction to their established public position of alleged enormous available supply. Clearly they wish only to depress the price.

(C) Overview: The vital need for silver for national defense, added to current and future supplies in critical shape; new weapon systems and alternative energy sources and heavy import dependence from a few foreign suppliers—all this all leads to one conclusion:

The Strategic Stockpile criteria for silver needs to be increased; release is not supportable. It is strongly recommended that a favorable report by the Subcommittee on Military Construction and Stockpiles on S. 1810.

Submitted by,

SCOTT D. DIAL.

SILVER USERS ASSOCIATION,
Washington, D.C., September 8, 1977.

Hon. GARY HART,
Chairman, Subcommittee on Military Construction and Stockpiles, U.S. Senate Armed Services Committee, Washington, D.C.

DEAR SENATOR HART: After being denied a request to appear before your subcommittee, the Executive Committee of the Silver Users Association has authorized the stockpile statement which this letter forwards.

Although the members of the Association are primarily concerned with only one commodity in the strategic stockpile, the Executive Committee has developed a position which has application to many other commodities. The major thrust of our suggestion is that when stockpile objectives are to be determined solely on the basis of import dependency, these imports should be analyzed in a manner which gives appropriate consideration to the proximity and accessibility of the different commodities. More specifically, we believe it is unrealistic to establish large objectives for a commodity which is plentiful in the Western Hemisphere, especially in Canada and Mexico. Such is the case for silver. Other commodities in this category would be lead, nickel and zinc to name only three.

Many variables make up the past methods of determining the size of the stockpile of a particular commodity. If all of these planning factors are stripped away and only import-dependency is left as the major ingredient, then proximity and accessibility of the import must be factored in to avoid an unreasonable cost to the taxpayer.

We would ask that the full statement along with this letter be made a part of the record of these hearings.

Sincerely,

WALTER L. FRANKLAND, Jr.,
Executive Vice President.

Enclosure.

PREPARED STATEMENT OF SILVER USERS ASSOCIATION, INC.

The proposals contained in S. 1810 would mean an important departure from past practices used to determine the size of stockpiles for the many commodities deemed essential for strategic purposes. Due to the sensitivity of many of these wartime factors and assumptions, the Silver Users Association as one of the

¹² Hon. Silvio Conte, "Questions and Answers on Current Silver Situation", Fall, 1976.

affected publics in this legislative area has not had the information necessary to critique past practices. It still does not have that information and does not now criticize the methodology so developed. For that reason, in the past, SUA has never tried to advocate a particular level of the stockpile for silver. Its position has been to advocate disposal of that portion of the stockpile determined surplus after the application of what one can easily understand to be a very complex procedure.

With the development of the import-dependency concept for determining stockpile objectives, now embodied in S. 1810, the Executive Committee of SUA has studied the proposal. It finds that when relying upon import-dependency with no consideration of proximity and accessibility of the imports, stockpile levels appear distorted, unrealistic and too costly to the taxpayer.

Although silver is the commodity which has clearly demonstrated what one could label as a weakness in the concept, many other commodities are also available from the Western Hemisphere, especially Canada and Mexico.

It can be argued, perhaps, that the responsibility for determining in which category a particular commodity is classified permits the interagency committee some flexibility in this regard. However, just such subjective judgment is of the type which the bill was designed to eliminate.

Accordingly, the SUA Executive Committee would urge the Subcommittee members to incorporate in the procedure for determining import-dependency a factor which acknowledges the accessibility of commodities largely available from the Western Hemisphere, especially Canada and Mexico. To clarify this point, let us use silver as an example:

Following a strict interpretation of the proposal contained in S. 1810, the annual gross import deficit in silver is 81 million ounces. On the average, the net annual imports from Canada are 33 million ounces and from Mexico we receive some 28 million ounces per year. Using the imports from our two neighbors as an offset to the gross annual import deficit, we see that the more reasonable deficit level would be 20 million ounces, rather than 81 million ounces per year.

Put in percentage terms, we see that 75 percent of the deficit is represented by the silver which flows across our borders from our neighbors while another 22 percent arrives from other countries in the Western Hemisphere.

Again referring to S. 1810, silver, if deemed a strategic commodity by the interagency committee, by strict definition would fall into Category B—or a two-year level of stocks based on net import-dependency. Without considering Western Hemisphere availability of the white metal, the stockpile level would be 162 million ounces. When a more realistic approach of using Western Hemisphere silver as an offset is considered, the stockpile level is reduced to 4 million ounces. It rises to 40 million ounces if the offset is restricted to the silver received from Canada and Mexico. It is still higher, at 96 million ounces when only the silver from Canada offsets the gross deficit for the two-year category.

The SUA Executive Committee firmly believes that applying the amount of any commodity available from the Western Hemisphere, especially Canada and Mexico, as an offset to the gross import deficit to determine the stockpile level is a logical and acceptable procedure should the Congress choose to depart from the methodology adopted by the present interagency stockpile committee. SUA is ready to discuss further with committee members this suggested change to the proposal in S. 1810 and to assist in developing additional material for needed clarification.

Silver statistics relating to the stockpile

	Ounces (millions)
Current supply held in strategic stockpile.....	140
Stockpile objective (October 1976).....	None
Annual average net (import deficit).....	81
Annual average offset from Western Hemisphere.....	79
Annual average offset from Canada.....	33
Annual average offset from Mexico.....	28
S. 1810 (Senator McClure) silver stockpile proposal—2-year objective of.....	162
Western Hemisphere offset—158, or a net objective of.....	(¹)
Canada and Mexico offset—122, or a net objective of.....	(²)

¹ 4 and a surplus of 136.

² 40 and a surplus of 100.

LETTER FROM MONTE CANFIELD, JR., DIRECTOR, ENERGY AND MINERALS DIVISION

U.S. GENERAL ACCOUNTING OFFICE,
Washington, D.C., September 9, 1977.

Hon. ZBIGNIEW BRZEZINSKI,

Assistant to the President for National Security Affairs, The White House

DEAR DR. BRZEZINSKI: We agreed in July 1977 to provide a written summary of matters discussed with the Director, National Security Council Security Analysis staff. This report contains the observations to date of our review of the strategic and critical materials stockpile.

In October 1976 the Ford administration announced a major policy change concerning the Nation's strategic and critical materials stockpile. The change culminated a year-long interagency study of stockpile policy, made at Presidential request, under the direction of the Federal Preparedness Agency (FPA)—the organization responsible for managing the stockpile. The new policy called for a stockpile capable of supporting U.S. defense requirements during a major war over a 3-year period, assuming large-scale industrial mobilization. It also provided for supporting a broad range of basic economic needs to insure the health, welfare, morale, and productivity of the civilian population during wartime.

The new stockpile goals based on these planning assumptions represented the difference between estimated material requirements and estimated available supply for the first 3 years of a war. This difference is valued at \$10.3 billion. The current inventory is estimated to contain material valued at \$6.8 billion—with \$3.5 billion applicable to the goals and \$3.3 billion excess to the goals (based on December 1975 market prices)—and is stored at 117 locations in the United States. Goals increased for 72 of the 93 stockpile materials. Goals for defense and essential and general civilian needs were calculated separately for each of the 3 years with relative priorities assigned to each.

The announcement of this change sparked much congressional interest in the size and cost of the contemplated stockpile, inclusion of civilian needs, whether it would be used for economic purposes, length of the war emergency period being provided for, and the effects acquisitions and disposals would have on the marketplace.

We testified on the stockpile policy change in November 1976 at the request of the Joint Committee on Defense Production. Our testimony focused essentially on our work on the 1973 stockpile policy change, which revised the war emergency planning period from 3 years to 1 year, and how the new policy fitted into the evolving national materials policy.

As a result of congressional interest in general stockpile matters, earlier this year we began a survey aimed at the Federal Preparedness Agency's procedures and practices for insuring the quality and quantity of stockpiled materials. We did not contemplate examining whether the right materials were being stored or whether stockpile goals were adequate.

We are aware that the President has directed a reevaluation of stockpile policy and that your staff plans to begin that task shortly. Although we have not completed our review, our work thus far has revealed the following matters that we believe should be considered during any subsequent evaluation of stockpile policies.

Current stockpile goals may not be met within a reasonable period of time.

Continued disposal of needed commodities could hinder attainment of current goals.

Offsetting shortages of some forms of materials with excesses of others may preclude availability in an emergency.

Stockpile materials have been transferred to other Federal agencies and Government contractors and may not be readily available in an emergency.

Transportation capabilities and other factors may need to be considered in planning storage of material to be acquired.

Alternative and complementary actions to stockpiling should be evaluated.

The purpose and uses of the new stockpile may need to be made more explicit in the governing legislation.

Details of these matters follow.

ATTAINING STOCKPILE GOALS

The purpose of our strategic and critical materials stockpile is to prevent a dangerous and costly dependence on foreign nations for these materials during a national emergency. Therefore, acquiring the needed commodities soon after their need is identified would seem prudent.

The total shortage of materials needed to meet current goals is valued at about \$6.8 billion. We realize that these goals will be changed somewhat in the future; however, unless they are reduced drastically, we believe they may not be attained within a reasonable period if FPA continues its cautious material acquisition policy and certain questionable management practices.

FPA's caution in acquiring materials stems from anticipated budgetary constraints and concern with international political effects and possible market disruptions that might be caused by its stockpile acquisitions. The questionable management practices that can hinder attaining goals involve (1) continuing to dispose of commodities under long-term sales contracts even though they are needed to satisfy revised stockpile goals, (2) offsetting shortages of various higher form materials with excesses of ores and other lower form (less refined) materials even though the industrial processing capacity may not be available to produce the higher forms of materials, and (3) loaning stockpile materials to other Government agencies or contractors.

ACQUISITION IS A LONG-TERM PROSPECT

The new goals, which became effective on October 1, 1976, increased for 72 of the 93 stockpile materials. Shortages currently exist for 46 materials, including 24 for which insufficient inventory is on hand to meet the highest defense and essential civilian needs. FPA, using December 1975 market prices, has identified 13 materials each of which has a shortage exceeding \$100 million.

Planned acquisitions of needed materials and disposals of unneeded materials will be presented to the Congress each year in the Annual Materials Plan (AMP). However, the AMP does not reflect long-range plans for meeting overall goals. FPA has indicated that acquisitions and disposals will be spread over a 10- to 15-year period and that the value of disposals will exceed the costs of acquisition for each of the first 5 years.

FPA's initial proposal for acquisitions and disposals for the first year was withdrawn when President Carter called for the current reevaluation of stockpile policy. Only materials that have shortages in the highest priority defense and essential civilian needs were planned to be acquired in the first year. FPA anticipated budgetary limitations on acquisitions even though other materials to satisfy lower priority needs could have been acquired without market disruption.

The proposed first-year acquisitions would have provided materials valued at only about 3 percent of the total current \$6.8 billion shortage. FPA projections indicate that after 5 years less than one-half of the total \$10.3 billion goal will have been attained. Currently, there are 24 commodities for which inventories are insufficient to meet highest priority defense and civilian needs. First-year planned acquisitions will eliminate these shortages for only 1 of the 24 commodities and will provide less than one-half of the material needed for 13 of these commodities. The inventory for three commodities, even after completion of the first-year planned acquisitions, would amount to less than 15 percent of the estimated first-year defense needs.

FPA plans no first-year procurement of five commodities although insufficient material is on hand to meet their highest priority defense and essential civilian needs. The decision not to procure these commodities in the first year, even though they meet FPA's general criteria for first-year acquisition, was attributed by FPA officials to anticipated budgetary constraints, international political considerations, or the possibility of market disruptions.

The reluctance to buy materials because of possible disruptions of the market, if continued, will have a significant impact on the time it will take to attain goals. FPA's "rule of thumb" is that market disruption could result from procurement of a stockpile commodity equal to 10 percent or more of the annual U.S. consumption. On this basis, the highest priority defense and essential civilian shortages for 16 commodities could not be satisfied in 1 year even if funds were available.

Iridium is an example of a stockpile material that will take many years to acquire in view of FPA's desire not to disrupt the market. Iridium is one of the platinum group metals used in a variety of applications, including industrial instrumentation and space vehicles. The current goal for iridium is 97,761 troy ounces; however, only about 17,000 ounces are in the inventory. Based on the 10-percent rule of thumb, about 900 ounces could be bought for the stockpile in any 1 year without disrupting the market. Therefore, if FPA continued to adhere

strictly to its policy of avoiding market disruptions, attaining the stockpile goal for iridium would require about 90 years.

It is important to have a clear policy, with congressional agreement on attaining stockpile goals. In formulating such a policy, we believe that the National Security Council (NSC) needs to carefully consider the advantages and disadvantages of FPA's cautious acquisition policy, including its reluctance to cause market disruptions. In addition, to provide the Congress with better oversight and a total perspective on stockpile management, our work to date indicates that FPA should (1) formulate a longer range plan for meeting goals and (2) give the Congress annual revisions to this plan, along with the Annual Materials Plan.

DISPOSALS OF NEEDED COMMODITIES HINDER ATTAINMENT OF GOALS

Stockpile goals for individual commodities change from time to time. When goals are raised, material formerly considered excess and committed or planned for sale can become needed to satisfy the new goals. In many instances, disposal of these needed commodities is being continued even though replacement commodities must be bought and attainment of stockpile goals will be hindered until replacements are received.

New stockpile goals became effective October 1, 1976, and many of these goals caused commodities formerly committed for sale as excess to be needed to satisfy shortages. FPA continued delivery of these commodities after it recognized that the new goals exceeded the material on hand. We were told that deliveries were continued to avoid economic hardships and disruptions to the buyers. Between October 1, 1976, and March 31, 1977, quantities of 17 stockpile commodities with goals that exceeded inventories were delivered to buyers under prior sales contracts. Some of these materials, which are now needed, remain in Government storage facilities but are still committed for sale.

The Annual Materials Plan indicates that FPA will buy 5 of the commodities during the first acquisition year because they are required to satisfy the highest priority defense and civilian needs. Eventually, all 17 of the commodities will have to be bought if their goals are to be satisfied.

Before July 1976 FPA had been selling cobalt from stockpile inventories because it was excess to the existing goals. For example, from January through June 1976 FPA sold more than 4.6 million pounds of cobalt, valued at \$18.2 million. It became known in July 1976 that the goal for cobalt would soon be raised and that the new goal would exceed the quantity in inventory. Nevertheless, from July 16 to August 19, 1976, FPA sold an additional 522,521 pounds of cobalt, valued at \$2.7 million. We were told that these sales were made to avoid abruptly cutting off a source of supply that buyers depended on.

On October 1, 1976, a new goal was established for cobalt and at June 30, 1977, a shortage of more than 44 million pounds existed for this commodity, including a substantial quantity needed to meet the highest defense and essential civilian needs.

As just discussed, the combination of changing stockpile goals, long-term disposal contracts, and FPA's desire not to cause supply disruptions or economic problems for buyers of stockpile materials has put the Government in the position of disposing of materials it needs. We believe the NSC will want to consider the advisability of FPA's continuing its use of long-term disposal contracts and provide policy guidance with respect to future disposal of needed materials. Also, the NSC might assist in finding a means, equitable to the Government and the buyers, of avoiding disposal of those onhand commodities that are needed but committed for sale.

OFFSETTING SHORTAGES OF SOME FORMS OF MATERIALS WITH EXCESSES OF OTHERS MAY PRECLUDE AVAILABILITY IN AN EMERGENCY

Stockpile goals are often developed for different forms of materials within families of related materials on the basis of estimated production capacity and industrial requirements. The goals for manganese, for example, require stockpiling it in varying forms ranging from ore to metal. Inventories of some forms of materials are less than goals; however, other forms of the same materials may be excess to goals. In these instances, FPA offsets the shortages with excesses of other forms of the same materials. For example, alumina, which is used to produce aluminum (a higher form material), is obtained from bauxite (a lower

form material). There is no alumina in the stockpile inventory. Consequently, FPA has used excess bauxite to offset about 66 percent of the alumina shortage.

Obviously, refining or other processing capacity would be needed to upgrade the excess lower form materials to higher forms. However, according to an FPA official, the needed capacity would not be available during wartime since the goal-setting process assumes full use of all such domestic capacity. In addition, FPA has no alternative plans to upgrade the lower form materials used as offsets. Therefore, the shortages for these materials are, in effect, understated because the required form of the material will not be available when needed unless a means can be found to perform the required processing. Currently, this situation pertains to six stockpile materials—alumina, beryllium, copper master alloy, manganese synthetic dioxide, ferromanganese, opium salts, and tungsten.

We believe the NSC will want to consider the reasonableness of FPA's practices relating to offsetting excess inventories of some materials against goals for others and provide policy guidance so that these practices, if continued, will not cause stockpile materials to be unavailable in the required form if needed in an emergency.

STOCKPILE MATERIALS LOANED TO GOVERNMENT AGENCIES AND CONTRACTORS MAY NOT BE AVAILABLE IN AN EMERGENCY

FPA has made loans, officially termed "custodial transfers," of several stockpile materials to Government agencies and contractors. Because of the way these loaned materials are being used, it is doubtful that they could be returned promptly in an emergency.

As of June 30, 1977, quantities of palladium, platinum, iridium, lead, quartz, and zinc valued at about \$5.3 million were on loan to various agencies and contractors. Although inventories of most of these commodities exceeded their goals at the time they were loaned, there are currently stockpile shortages for all but lead and quartz. About 41 percent of the iridium inventory is on loan even though the total inventory of this material, including the loaned amount, is not sufficient to meet the highest defense and essential civilian needs.

The loaned materials are generally used without being altered; however, in some instances, they are partially consumed or alloyed with other materials. In these cases, the borrowing activity is responsible for replacing the material. The agreements under which FPA allows commodities to be loaned indicate specific loan termination dates and also require that the material be returned on demand. However, some of these agreements have been extended several times, and some materials have been on loan for lengthy periods.

The practice of loaning stockpile materials to other organizations may not be consistent with having the commodities available in the event of a national emergency. The prompt return of replacements for those materials that have been altered may not be possible. Also, uses being made of the loaned materials may be considered so critical that they would have to be continued during a national emergency. If the return of these materials were delayed or if they could not be returned, unanticipated stockpile shortages would exist.

We believe the NSC will want to consider the possible impact of FPA's loaning practices and provide policy guidance to eliminate or minimize their adverse effects, if continued.

TRANSPORTATION CAPABILITIES AND OTHER FACTORS MAY NEED TO BE CONSIDERED IN PLANNING STORAGE OF MATERIALS TO BE ACQUIRED

FPA's policy is to stockpile materials at locations having the lowest storage costs. This policy does not fully consider other factors which could affect the prompt availability of materials in a national emergency.

When disposing of excess stockpile materials, FPA tries to retain the best quality materials. If materials stored at different locations are of equal quality, the material at the least costly location will be retained. Industrial consumption patterns and vulnerability of storage facilities are considered only if the material quality and storage costs are equal for the different locations. FPA officials stated that the same criteria will be used to select storage locations for future acquisitions.

In past years, stockpile storage criteria have been based on such things as proximity to wartime facilities where the materials would be consumed, avoid-

ance of seaports and transportation bottlenecks, and vulnerability to loss from enemy attack.

About 95 percent of the stockpile acquisitions occurred before fiscal year 1960, and many industrial consumption patterns have shifted since these materials were first stored. Further, almost 50 percent of the stockpile disposals took place during fiscal years 1972-76. These materials were shipped from various locations without regard to consumption patterns, transportation capabilities, or vulnerability of storage facilities. Thus, many stockpile materials are probably not being stored at the best locations to facilitate their use in an emergency.

During wartime, many demands would be made on the Nation's transportation industry to move personnel, equipment, and military and civilian supplies, as well as stockpile materials. However, FPA has not assessed the transportation industry's capability to move stockpile materials from storage to consumption points during this period of increased demand for transportation.

As additional materials are acquired to satisfy stockpile shortages, storage location criteria will become increasingly important. Cost will be an important consideration. We believe, however, that the NSC will want to consider whether cost should continue to be the controlling factor in the selection of storage sites. Alternatively, a more flexible policy could be adopted that would recognize other important factors, including the capability to transport materials to places where they will be used in an emergency.

ALTERNATIVE AND COMPLEMENTARY ACTIONS TO STOCKPILING SHOULD BE EVALUATED

We were told that the study preceding the 1976 stockpile policy change did not consider alternatives to physically stockpiling needed materials as a means of supporting requirements. Nor, as we understand it, were institutional options to the Government's holding stockpiled materials seriously considered. The Comptroller General's November 1976 testimony discussed these points.

"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 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 (for) 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 the options do exist and these should be explored as possibly more viable ways of fulfilling our national needs."

Amplifying on this testimony, we would point out that a range of possible complementary actions to stockpiling should be assessed. If, for example, the administration determines that rubber should be stockpiled, it could consider a program of cultivating guayule plants (a source of rubber) as was tried some years ago, so that eventually the United States might move away from complete dependence on foreign sources for its rubber needs. As another example, the administration might also consider developing domestic alumina clays and allunite resources as long-term alternatives to foreign bauxite.

To repeat, we have not examined all the options available to fulfill our national needs, but a study of future stockpile policy should consider them.

THE PURPOSES AND USES OF THE NEW STOCKPILE MAY NEED TO BE MADE MORE
EXPLICIT IN THE GOVERNING LEGISLATION

The Strategic and Critical Materials Stockpiling Act of 1946 provides for the acquisition and retention of materials to supply the industrial and military needs of the country for national emergency with respect to common defense.

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.

The Attorney General 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 act's language seems fairly clear regarding the release of stockpile materials for defense purposes. Past Government acquisition and disposal actions, however, have caused many people to conclude that for some time the United States has operated a defacto economic stockpile that bows to industry pressures to release stocks in times of tight supply and, at other times, threatens releases to bring down raw materials prices. Inclusion of civilian needs in the revised stockpile goals tends to reinforce that view. Moreover, public hearings in 1976 by the National Commission on Supplies and Shortages indicated that at that time many people believed the Government was, in fact, creating an economic stockpile that could be released for other than defense purposes.

Industry perceptions of Government intentions are critically important. Erroneous perceptions are likely to cause private sector responses entirely different than they otherwise would be. Industry, for example might choose to hold less in inventories if it perceives the Government intention to release stockpiled materials in the event of a shortage.

We believe that the purposes of the stockpile need to be made more explicit. If the administration intends to use a more liberal interpretation than the act's "common defense" criteria for release of stockpiled materials, then specific legislation should be introduced explicitly stating the purposes of the stockpile and conditions under which disposal actions can be made.

We plan to complete our review within the next few months. In the meantime, we would appreciate being advised of any actions taken or planned concerning these matters. Copies of this report are being sent to Senators Proxmire, McClure, and Hart; Congressmen Gialmo, Bennett, and Dicks because of their expressed interest in stockpile matters; and to the Director, Office of Management and Budget; and the Administrator of General Services. In view of their responsibilities in the Congress for stockpile matters, copies are also being sent to the Chairmen of the Senate Committees on Armed Services; Governmental Affairs; and Subcommittee on Treasury, Postal Service, General Government; the Chairmen, House Committees on Armed Services; Government Operations; and Appropriations.

Sincerely yours,

MONTE CANFIELD, Jr., *Director.*

Senator HART. This hearing is concluded.

[Whereupon, at 11:21 a.m., the subcommittee adjourned, to reconvene upon the call of the Chair.]

