NAVAL PETROLEUM RESERVE NUMBERED 1, ELK HILLS, CALIF.

HEARING

BEFORE THE

SUBCOMMITTEE ON NATIONAL STOCKPILE AND NAVAL PETROLEUM RESERVE

OF THE

COMMITTEE ON ARMED SERVICES
UNITED STATES SENATE

NINETY-THIRD CONGRESS

FIRST SESSION

ON

S.J. Res. 176

TO AUTHORIZE THE PRODUCTION OF PETROLEUM FROM NAVAL PETROLEUM RESERVE NUMBERED 1

DECEMBER 10 AND 11, 1973

Printed for the use of the Committee on Armed Services

U.S. GOVERNMENT PRINTING OFFICE
25-650 WASHINGTON : 1973

COMMITTEE ON ARMED SERVICES

JOHN C. STENNIS, Mississippi, *Chairman*

STUART SYMINGTON, Missouri
HENRY M. JACKSON, Washington
SAM J. ERVIN, JR., North Carolina
HOWARD W. CANNON, Nevada
THOMAS J. McINTYRE, New Hampshire
HARRY F. BYRD, JR., Virginia
HAROLD E. HUGHES, Iowa
SAM NUNN, Georgia

STROM THURMOND, South Carolina
JOHN TOWER, Texas
PETER H. DOMINICK, Colorado
BARRY GOLDWATER, Arizona
WILLIAM SAXBE, Ohio
WILLIAM L. SCOTT, Virginia

T. EDWARD BRASWELL, Jr., *Chief Counsel and Staff Director*
JOHN T. TICER, *Chief Clerk*

SUBCOMMITTEE ON NATIONAL STOCKPILE AND NAVAL PETROLEUM RESERVES

HOWARD W. CANNON, Nevada, *Chairman*

STUART SYMINGTON, Missouri
SAM J. ERVIN, JR., North Carolina
SAM NUNN, Georgia

WILLIAM L. SCOTT, Virginia
PETER H. DOMINICK, Colorado
BARRY GOLDWATER, Arizona

GORDON NEASE, *Professional Staff Member*

WITNESSES

NAVAL PETROLEUM RESERVE NO. 1

MONDAY, DECEMBER 10, 1973

U.S. SENATE,
SUBCOMMITTEE ON NATIONAL STOCKPILE
AND NAVAL PETROLEUM RESERVES OF THE
COMMITTEE ON ARMED SERVICES,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10 a.m., in room 1114, Dirksen Senate Office Building, Hon. Howard W. Cannon (chairman).

Present: Senators Cannon (presiding), Nunn, and Scott of Virginia.

Also present: Gordon A. Nease; and Robert O. Old, professional staff members.

Senator CANNON. The committee will come to order.

The purpose of the meeting this morning is to consider Senate Joint Resolution 176, which would authorize increased production of petroleum from the Elk Hills Naval Petroleum Reserve for national defense purposes and to provide for further exploration of the reserve.

I believe we have all been made adequately aware of the energy shortage facing the Nation. I, therefore, do not deem it necessary to belabor this issue at length, but feel we should proceed as quickly as possible to consider the merits of the joint resolution. Nevertheless, to place the matter in proper perspective, arrangements have been made to hear from Mr. Stephen A. Wakefield, Assistant Secretary of the Interior for Energy and Minerals. I might also state that some Members of the Congress have expressed a desire to be heard, and we will accommodate them as their schedule permits.

As a prerequisite to the approval or disapproval of this legislation, I feel it is essential to determine just what steps the Department of Defense has taken, and proposes to take, to conserve energy. Admittedly, Defense requirements as compared to the total requirements of the country, are relatively small, but, nonetheless, highly visible, particularly when it has been necessary to evoke the provisions of the Defense Production Act to provide for Defense requirements. I am sure this committee wishes to assure itself that the Department of Defense is abiding by good conservation practices, both in spirit and principle, before acting on the legislation before us.

As a matter of background, the Elk Hills Reserve, also known as Naval Petroleum Reserve No. 1, is located in Kern County, Calif. It was established by Executive order issued by President Taft on September 2, 1912. The limits of the reserve was enlarged to include the balance of the known geological structure of the Elk Hills Field by an Executive order signed by President Roosevelt on October 15, 1942.

The Standard Oil Co. of California is the only remaining private owner of lands inside the reserve. Following the enlargement of the reserve in 1942, a unit plan was entered into with the Standard Oil Co. for the cooperative exploration, development, and operation of all lands in the reserve.

By law, the operation and use of Elk Hills Reserve is limited to: (1) The protection, conservation, maintenance, and testing of those reserves; or (2) the production of petroleum whenever, and to the extent that the Secretary of the Navy, with the approval of the President, finds that it is needed for national defense, and the production is authorized by a joint resolution of Congress.

It is under this latter procedure that the joint resolution is before us for consideration. The Secretary of the Navy has made a determination that the armed services of the United States are unable to procure on the open market necessary petroleum products to maintain the desired military readiness posture, and that the production of Naval Petroleum Reserve No. 1 is needed for national defense.

Without objection, at this point, I will submit for the record a letter from the President of the United States to the President pro tempore of the Senate, transmitting the joint resolution and the secretarial determination of need with respect to reserve No. 1, and requesting early congressional action.

[The letter follows:]

THE WHITE HOUSE,
Washington, D.C., November 7, 1973.

Hon. JAMES O. EASTLAND,
President Pro Tempore of the Senate,
Washington, D.C.

DEAR MR. PRESIDENT: Enclosed is a letter from the Acting Secretary of the Navy which provides his finding of the need for increased production of petroleum from the Elk Hills Naval Petroleum Reserve for national defense purposes. I approve his findings and conclusions and urge adoption of the enclosed proposed joint resolution which would give the approval of the Congress as required by Chapter 641 of Title 10, United States Code.

I request that the Congress act upon this resolution at the earliest possible time.

Sincerely,

RICHARD NIXON.

DEPARTMENT OF THE NAVY,
Washington, D.C., November 6, 1973.

The PRESIDENT,
The White House.

DEAR MR. PRESIDENT: In accordance with the provisions of Chapter 641 of Title 10, United States Code, there is enclosed my finding that production of petroleum from the Elk Hills Naval Petroleum Reserve is needed for the National Defense, and a proposed joint resolution by which the Congress would give its approval so that production may begin.

I hereby request that you approve my finding and transmit the proposed joint resolution to the Congress.

Sincerely,

JACK L. BOWERS,
Acting Secretary of the Navy.

DEPARTMENT OF THE NAVY,
Washington, D.C.

SECRETARIAL DETERMINATION OF NEED WITH RESPECT TO NAVAL PETROLEUM RESERVE NO. 1

Whereas, chapter 641 of title 10, United States Code, authorizes the Secretary of the Navy to determine that the production of naval petroleum reserves is needed for national defense; and

Whereas, the Armed Services of the United States are currently unable to procure on the open market necessary petroleum products to maintain the desired military readiness posture. Present supplies of petroleum are not sufficient, even through mandatory allocation, to meet both the needs of military readiness and essential civilian needs, including those vital to defense. As a consequence, adequate petroleum to meet defense needs cannot be assured from normal sources of supply. In addition and contributing more seriously to the growing deficit in source of military petroleum supply, certain international events have led to reduced availability from sources outside of the domestic United States. Since the Armed Services normally procure 50% of their needs from these international sources, the military petroleum shortage is even more critical.

Now therefore, I find that the production of Naval Petroleum Reserve No. 1 is needed for national defense.

In order to authorize production of an amount which will help to insure that the needs of national defense are met, yet not seriously deplete the reserve, it is concluded that the production should be at a rate not to exceed maximum efficient rate in accordance with sound engineering and economic principles. Further, since it is anticipated that other Government agencies will be working aggressively to solve the current problems of energy shortage, the production should continue for a period of one year only. In order to provide for an initial period during which the full production rate can be established, the one year production span should commence 45 days following approval of this Determination of Need by the President and joint resolution of the Congress.

Noting that the Naval Petroleum Reserves are still not fully explored and developed, with the most valuable resources in Naval Petroleum Reserve Number Four almost wholly unexplored, it is further determined that it will be in the interest of the United States to take aggressive action toward such exploration. The Department of the Navy completed a plan in April of 1973 to guide such exploration and development and it is proposed that the first step in implementing this plan be taken concurrently with production of Naval Reserve Number One. To implement this action most directly, it is proposed that the Congress, by the same resolution with which it orders production, order that funds derived from the sale of Naval Petroleum Reserve Number One oil be made available for such exploration and development. All funds received would be applied to this purpose after having first provided for the operations at Naval Petroleum Reserve Number One during the one-year period and providing for facilities necessary to that production and delivery of oil. By this action the Congress can, without using other sources of funds, greatly enhance the capacity and readiness of the Naval Petroleum and Oil Shale Reserves to respond in the future.

JACK L. BOWERS,
Acting Secretary of the Navy.

Dated: November 6, 1973.

Senator CANNON. The joint resolution would authorize production at a rate to help insure that the needs of national defense are met, but not to exceed the maximum efficient rate in accordance with sound engineering and economic principles. Production would commence 45 days after the effective date of the resolution, and would continue not more than 1 year.

Proceeds from the production would go into a naval petroleum reserve account on the books of the Treasury, and could be used for the operation of the reserve, and for further exploration of the reserve.

Our principal Department of Defense witnesses are Assistant Secretary of Defense for Installations and Logistics the Honorable Arthur I. Mendolia, and Assistant Secretary of the Navy for Installations and Logistics, the Honorable Jack L. Bowers.

Since the Standard Oil Co. of California has a vested interest in the Elk Hills Reserve, they have been invited to participate in the hearings. Mr. J. E. Gosline, former vice chairman of the board, will be their principal witness.

I notice Senator Cranston from California is here at the present time and I am going to ask him if he has any comments he would care to make.

[S.J. Res. 176, 93d Cong., 1st sess.]

JOINT RESOLUTION To authorize the production of petroleum from Naval Petroleum Reserve Numbered 1

Whereas chapter 641 of title 10, United States Code, directs the Secretary of the Navy, among other things, to use and operate all properties within the naval petroleum reserves as are or may become subject to the control and use by the United States for production of petroleum whenever and to the extent the Secretary, with the approval of the President, finds such production required for the national defense: *Provided, however,* That no petroleum shall be produced pursuant to such a finding unless authorized by the Congress by joint resolution; and

Whereas such a finding of the necessity for such production to the extent authorized has been made by the Secretary of the Navy in his action dated November 6, 1973, which finding has been approved by the President: Therefore, be it

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled,

AUTHORITY FOR PRODUCTION

That the production of petroleum (including crude oil and associated gas and other hydrocarbons) from Naval Petroleum Reserve Numbered 1 is hereby authorized at a rate to help insure that the needs of national defense are met, but not to exceed the maximum efficient rate in accordance with sound engineering and economic principles. Such production (to the extent in excess of that otherwise authorized by chapter 641 of title 10, United States Code) is to commence within forty-five days after the effective date of this resolution, and to continue for a period of not more than one year after production commences.

DISPOSITION OF PRODUCTION

SEC. 2. The Secretary of the Navy shall dispose of the production herein authorized as provided in chapter 641 of title 10, United States Code, by means of sales, uses, or exchanges effected, determined, or agreed upon after the effective date of this resolution. As required by said United States Code, all sales shall be effected by competitive bid. The terms of the dispositions shall be so arranged as to give full and equal opportunity for acquisition of the oil by all interested companies, including major and independent oil refineries alike.

DISPOSITION OF RECEIPTS

SEC. 3. (a) There is hereby established on the books of the Treasury Department the Naval Petroleum Reserve Account. This account shall be administered by the Secretary of the Navy under such regulations as the Secretary of Defense may prescribe. Into such account there shall be transferred or credited during the period of increased production authorized by this Act or as may be hereafter authorized (1) unobligated balances of appropriations made available to the Department of the Navy for fiscal year 1974, for exploration, prospecting, conservation, development, use, and operation of the naval petroleum and oil shale reserves, (2) all proceeds realized (i) under chapter 641 of title 10, United States Code, from the sale of petroleum or refined products, oil and gas products, including royalty products, and (ii) the net proceeds realized from sales within the Department of Defense of refined products accruing to the benefit of the Department of Defense as the result of exchanges, and (3) such funds as may be appropriated for the Naval Petroleum Reserve Account, to remain available until expended.

(b) Funds available in the Naval Petroleum Reserve Account shall be available for the expenses of (1) production, including preparation for production, as authorized by this resolution and as may hereafter be authorized, (2) all capital costs necessary for facilities both within and outside the reserve incident to production and delivery of crude petroleum, and (3) exploration, prospecting, conservation, development, use, and operation of the naval petroleum and oil shale reserves as authorized by chapter 641 of title 100, United States Code.

STATEMENT OF HON. ALAN CRANSTON, U.S. SENATOR FROM CALIFORNIA

Senator CRANSTON. Thank you very much, Mr. Chairman. I do have some comments I would like to make. I will not say everything that I have prepared but ask that the entire statement will appear in the record.

Senator CANNON. It will appear in the record.

Senator CRANSTON. I am very grateful for this opportunity to comment on the question of authorizing production from Naval Petroleum Reserve No. 1—commonly referred to as Elk Hills.

The committee, in receiving testimony on Senate Joint Resolution 176, is tackling an issue which has strong sentiment on both sides and which has broad ramifications. Questions vital to our national defense, our economic well-being and the essential needs of our citizens are involved.

I believe that Elk Hills oil should be produced at the rate of at least 100,000 barrels per day (but not more than 160,000 barrels per day) for a period of 1 year in order to provide for emergency, short-term petroleum needs which are vital to our economy and to our defense capabilities. Should additional oil prove necessary, or if one year is not sufficient, Congress would have to enact additional legislation. I wish to make clear, however, that my support for producing from the Elk Hills reserve is conditioned upon a resolution in the public interest that is satisfactory to the Armed Services Committee of the contractual and legal questions involving Standard Oil Co. of California.

The Elk Hills reserve was established by Executive order in September 1912, for "the exclusive use or benefit of the U.S. Navy." Three additional Navy reserves were established by Executive order between 1912 and 1923. Because these reserves were established by Executive order, however, there was no effect on titles to lands within the boundaries of the reserves which had already been reduced to private ownership. As a result, about one-third of the lands within the Elk Hills reserve was privately owned. Since 1912, all of the lands within the reserve have come into the ownership of either the United States, which owns approximately 80 percent of the total, or of Standard Oil Co. of California which owns the balance.

In 1938, legislation was enacted to consolidate and protect the Elk Hills reserve. It authorized the Secretary of the Navy to enter into contracts and to acquire lands for the protection and conservation of the oil reserves.

In 1944, a unit plan contract negotiated between the Navy and Standard was approved, giving the Navy complete control over the development and production of the reserve and fixing a basis for division of any oil produced. Also in 1944, Congress authorized production at Elk Hills in order to satisfy wartime petroleum deficiencies of the armed services. Production was limited to 65,000 barrels per day for 18 months. Immediately after termination of hostilities in the Pacific in September 1945, Congress revoked authority for production at Elk Hills. Today production has stabilized at the rate of 3,000 barrels per day.

Presently, there are more than 1,100 wells in the Elk Hills reserve. It has been estimated that the reserve is capable of producing a maximum of 100,000 barrels per day within 60 days, but that limited pipe-

line capacity would be able to transport only 90,000 barrels per day to the boundaries of the reserve and only 12,000 barrels per day beyond.

According to the Office of Naval Petroleum and Oil Shale Reserves, the maximum efficient rate of production at Elk Hills with existing wells would approximate 267,400 barrels per day.

To attain that level, however, additional facilities costing some $69 million would be required. The total proven reserves at Elk Hills is approximately 1 billion barrels.

Mr. Chairman, on November 6, 1973, the Acting Secretary of the Navy transmitted a finding that production from Elk Hills at a rate "not to exceed the maximum efficient rate" was necessary to help insure that the petroleum needs of national defense are met. Simultaneously, he transmitted a proposed joint resolution to the Congress, which you have before you today—Senate Joint Resolution 176. Shortly after this, the Secretary of the Interior ordered that first priority in allocating scarce fuels would go to the military. And in November and December, estimates are that some 19.7 million barrels of oil from civilian stocks have been allocated for use by the military.

Mr. Chairman, I believe it is plain bad planning for the military to be given first priority in the allocation of scarce fuels while the oil reserves set aside for national defense sit unused. It amounts to robbing Peter to pay Paul, and it is leaving our cities and our industrial base short of lifeline supplies of fuel.

To illustrate my point, I would like to take a moment to describe just how serious the fuel shortages are in southern California, which is the hub of our defense-related industries.

In the Los Angeles area four of our cities are facing real and immediate shortages. Action is required within a few weeks or these cities will be in very deep trouble.

These are the cities of Los Angeles, with 3 million residents, and the suburban cities adjoining Los Angeles of Burbank, Glendale, and Pasadena. All four of these cities operate their own power departments. Other cities in southern California are served by investor-owned public utilities, which are facing shortages too, but which are not faced with immediate shortages as is Los Angeles.

Burbank, Pasadena, and Glendale are in the deepest trouble. Pasadena has announced it must cut back power before Christmas and rotating, neighborhood by neighborhood blackouts would come next month.

Burbank already has passed an ordinance requiring curtailment of business and industry and has warned that power will be cut off completely for those who fail to comply. Glendale also has a very limited supply of oil, especially low-sulfur oil, and will be forced to make mandatory cutbacks in electricity early next year, unless a variance is granted by the local air pollution control district or additional supplies of low-sulfur oil are found and made available.

The problem in the city of Los Angeles, while not immediately acute, is so huge, because of the large population and the concentration of industry, it is perhaps more dramatic. Let me discuss it in more detail.

The Los Angeles Department of Water and Power is almost totally dependent on fuel oil for generating electricity. About 5 percent of its electricity comes on transmission lines from the Pacific Northwest

during periods of excess supply in that area. And there have not been any surpluses there in months.

Until last summer the department used a combination of oil for fuel during the winter months and natural gas during the summer when the Los Angeles smog problem intensifies. But this summer, the natural gas shortage led to supplies being cut off and the system must now operate almost entirely with fuel oil.

Because of the California air pollution control standards, the oil Los Angeles burns must have a sulfur content of one-half of one percent (0.5) or less.

This type of oil is not generally available for domestic sources. It must be imported from the Middle East or north Africa, Indonesia, or Venezuela. The L.A. power system does not operate extensive storage facilities as many investor-owned utilities do. It has been buying its oil and its gas as it is needed and stores only for a few months.

And, until recently, supplies have been adequate. A year ago, for example, it asked for bids on 4.5 million barrels. It received offers of 32 million barrels. By last April the situation had completely changed. With only a 60-day oil supply on hand, the Department of Water and Power asked for bids for fuel oil and not a single oil company made an offer to supply the city.

The department has been scrambling for supplies ever since and was forced to enter the world market and deal directly with overseas suppliers. It was successful in contracting with both Indonesia and north African Arab States for oil supplies.

Recently it learned that 11 million barrels contracted for in north Africa had been placed under the Arab embargo. The city will not get that oil. This oil is nearly half of the 23 million barrels it needs to supply the city of Los Angeles and its 3 million citizens and all of the major industries which are not served by the private utilities.

As a result of the loss of Arab oil the department has an announced five-phase conservation plan for the city which could, if fully implemented, have a disastrous impact on the entire Los Angeles area.

This plan must be implemented within 3 or 4 months if the city is to survive at all.

Phases 1 and 2 of the plan call for conservation measures and voluntary curtailment of power use. These steps have already been taken.

Phase 3 is for mandatory curtailment of power use.

Phase 4 calls for burning high sulfur oil under a variance from the local air pollution control district's hearing board. The application for this variance has been filed.

Phase 5 would require so-called rolling blackouts—the complete shut-off of all power, neighborhood by neighborhood, on a rotating basis.

City ordinances already are being drawn up to put the plan into effect and we are already close to the need for phase 3—mandatory curtailment. This would be effected by, among other things, limiting business and industrial operations to 50 hours a week. This move alone could throw 100,000 to 200,000 men and women out of work immediately. The ripple effect of such massive layoffs could create social and economic chaos with many thousands more unemployed, and incredible hardships for workers, families, and businesses.

Phase 5 blackouts would be implemented if the phase 4 curtailments did not achieve the necessary fuel savings. These blackouts, a complete shutting off of electrical power, would be rotated through the city for periods of 2, 3, or 4 hours. Homes, business, hospitals, traffic lights, police stations—all would be cut off equally.

The outcome of these extreme measures is hard to imagine but they could be serious indeed, for the people of the Los Angeles area. And, on top of everything else, Los Angeles is suffering from the worst air pollution problem in the Nation. If now we must burn high sulfur oil—some 25 to 30 million barrels—the increase in smog could threaten the health and even the lives of thousands of persons, especially the elderly and those already suffering from lung and bronchial disorders.

Mr. Chairman, opening up production at Elk Hills at the rate of 100,000 to 160,000 barrels per day would not solve these serious fuel shortages. But by decreasing military demand on other fuel supplies, it might forestall the drastic job layoffs and rotating blackouts that Los Angeles is now forced to prepare for. I suggest that if these measures are implemented, many southern California industries vital to our national defense will be crippled.

Moreover, producing at the rates of 100,000 to 160,000 barrels per day for 1 year would deplete Elk Hills of less than 5 percent of its total of 1 billion barrels. That is not a very substantial impact, in my opinion.

An added benefit is that the oil at Elk Hills is considered to be low-sulfur, a consideration which is quite significant for Los Angeles, as I have indicated. I suggest that if this committee decides to authorize production from Elk Hills for national defense purposes, some arrangement should be sought that would allow a city like Los Angeles to trade its high sulfur fuel for the low-sulfur at Elk Hills.

In closing, Mr. Chairman, I wish to say that I am aware of the possible "windfall" which may accrue to Standard Oil Co. if Elk Hills is opened for production. Every effort must be made to avoid any possibility that Standard could chrage that the Government violated its agreement, thereby freeing them to go into full production on their share of the reserve. This would only serve to deplete the reserve through massive offset production on the part of the Navy.

These are publicly-owned reserves. The public's interest in them must be protected, and windfall profits made at the public's expense cannot be tolerated.

The contractual and legal relationship between the Navy and Standard at Elk Hills is extremely complicated. I would hope that this committee will make every effort to resolve these issues so that limited, but essential production can commence at Elk Hills. This outcome is essential to the continued economic well-being of the citizens of Los Angeles.

Senator CANNON. Thank you, Senator Cranston, for a very fine statement. You certainly addressed yourself to all of the basic issues that the committee is going to be considering in this matter. As you correctly pointed out, the Defense Department now has imposed on the civilian end of the economy a requirement under the Defense Production Act for about 300,000 barrels per day and this is having a very direct effect in your area, particularly, in the southern California

area. Furthermore, it does seem reasonable to consider whether, if we do have adequate reserves, whether or not the Defense Department could not properly use from those reserves to help relieve this particular situation that confronts us at the present time of the particular shortage.

You also correctly pointed out that we have, if we permit this type of production, 160,000 barrels a day for a period of a year, that will use less than 5 percent of the known reserves of Elk Hills how, plus the fact that the resolution, if it is carried out, would permit the further development in the Elk Hills Reserve to ascertain exactly what we do have. Some people believe that the reserves there are vastly in excess of the present estimates, and I think most people believe that they are somewhat in excess. So these certainly are valid points that we are going to be going into, and a number of the witnesses here who are coming on from, I have read their statements, do address themselves to these very points that you have raised, including the point of the contract with the private owner in the field, as to whether we cannot proceed in accordance with the contract or whether this would be a violation on the part of the United States so that they would have a free hand in going ahead and pumping all they desire to pump. So those are very serious questions and I certainly appreciate your calling them to the committee's attention so lucidly.

Senator Nunn.

Senator CRANSTON. Thank you very much, Mr. Chairman.

Senator NUNN. I do not have any questions, Mr. Chairman, I appreciate Senator Cranston's statement.

Senator CRANSTON. Thank you.

Senator CANNON. The next witness will be Hon. Stephen A. Wakefield, Assistant Secretary of the Interior for Energy and Minerals.

Mr. WAKEFIELD. Good morning, Mr. Chairman.

Senator CANNON. Good morning.

By the way, I have received a telegram from the chairman of the Public Utilities Commission of California, and I will make that, president of the Public Utilities Commission, and I will make that telegram a part of the record.

[The telegram follows:]

The California Public Utilities Commission (CPUC) wishes to express its firm and unequivocal support for appropriate action by Congress to allow limited emergency utilization of federal oil reserves in order to avoid disruption in electricity supply in California and in other States.

Since early last summer, the CPUC has conducted an extensive investigation into the adequacy and reliability of the energy and fuel requirements and supply of the electrical utilities in California. The record amassed in this proceeding shows clearly that curtailment of electric service is a distinct possibility for the utilities in this State before the end of 1974 and that such curtailment will have substantial adverse effects upon the national interest as well as upon the health, welfare and well being of the citizens of California. Presently indicated oil deficiencies for electric generation in California are thirty-three million barrels for 1974. Forty-nine million barrels for 1975 and fifty-two million barrels for 1976.

In response to the evidence received in its investigation, the commission has ordered the California electric utilities which it regulates to seek higher fuel priorities from federal agencies; convert facilities to utilize alternate fuels where feasible; contract for additional fuel; and to seek temporary relaxation of regulations limiting emissions from generating plants. It has now become clear, however, that merely securing higher fuel priorities for utilities will not over-

come the potential deficiencies. Limited emergency utilization of the federal oil reserves at Elk Hills is uniquely suited as a critical action to help meet the short-term electric power emergency in California. The commission has ordered its regulated utilities, where appropriate, to convert facilities for the direct use of crude oil. The availability of Elk Hills crude oil would also facilitate review of regulations limiting emissions from electric generating plants.

It should be emphasized that the CPUC was one of the first regulatory commissions in the country to direct its electric utilities to initiate specific programs to conserve and reduce the use of electric energy in the current shortage situation. The utilities are presently under orders of the CPUC to seek cuts in customer use by not less than 10 percent of usage for the same time last year additional hearings are presently taking place for the consideration of mandatory curtailment plans and programs for mutual assistance between the utilities. Thus, the shortage problem is being attacked vigorously by the CPUC on the demand side, but such action alone will not be enough equally vigorous action by Congress to make emergency supplies of oil available is going to be required in the current situation to avoid widespread public hardship and detriment to the national interest.

We appreciate the opportunity to present this information to you and the members of your subcommittee, and we respectfully urge your favorable consideration of the proposal before you to allow the limited emergency utilization of the Elk Hills Oil reserves.

Sincerely,

VERNON L. STURGEON,
President, Public Utilities Commission.

Senator CANNON. You may proceed, Mr. Wakefield.

STATEMENT OF HON. STEPHEN A. WAKEFIELD, ASSISTANT SECRETARY OF THE INTERIOR FOR ENERGY AND MINERALS

Mr. WAKEFIELD. Mr. Chairman, Senator Nunn, I am pleased to have this opportunity to describe our current and expected energy situation and to support enactment of the joint resolution proposed by the President which you are considering today. Although I am officially identified with the Department of the Interior, I am appearing with your concurrence on behalf of Mr. William A. Simon, who has been designated by the President to be the Director of the Federal Energy Office, and who is unable to appear this morning.

After reviewing our national energy situation, the President indicated on September 8, 1973, his view that we should proceed with the development of the Elk Hills Reserve and he directed that consultations begin with the Congress on this matter. Since that time, our national energy situation has become more critical, due primarily to the cutoff of oil from the Mideast. At the present time, we estimate that the actual amount of oil denied to the United States today as a result of Arab nation curtailments is about 2 million barrels a day.

Because demand for oil rises to a seasonal peak during the first quarter of each year, we estimate that the total shortfall occasioned by this denial may average as much as 3½ million barrels a day during the first 3 months of 1974. This is approximately 17 percent of projected total demand. We plan to meet this shortfall by a combination of measures, including curtailing demand by both mandatory and voluntary actions, shifting refinery yields, substituting coal for oil where this is feasible, and the encouragement of additional oil and gas production from domestic sources.

The passing of the winter will mitigate some of our acute problems with space heating requirements, but that is likely to be the extent of our relief. Even should the Arab nations see fit to resume shipments of oil at the levels of last September, if there are not significant produc-

tion increases, then the supply is unlikely to be enough to meet the demand for reestablishment of normal supply patterns, the rebuilding of strategic reserves, and above all, maintaining the Nation's economic strength which, in the final analysis, is so critically important to the security and defense of our Nation.

Let me digress for a moment to amplify my comment about growth. The consuming nations of the world are in great distress at the moment, presumably because of the recent cutbacks in Arab production which amount to about 5 million barrels a day. But the reality is that even at the current reduced levels of Arab production, the world is today receiving at least a million barrels a day more oil than it averaged during 1972. The straitened situation of the consuming nations in reality has been caused by a single year's growth in demand that was only partly matched by growth in supply. This growth in demand will continue, urged on by the competing economies of the major industrial nations. And despite the most resolute actions that may be taken to reduce demand, most of the unsatisfied requirements will remain, and will immediately present themselves as claims against any increases in world oil supply that may appear.

The clear prospect is for the world shortage of oil to continue, mitigated for a short period by whatever production increases the Arab nations may choose to permit, but eventually worsening as demand continues to grow faster than the incremental supply.

As I mentioned earlier, President Nixon is instituting a number of actions and has requested authority from the Congress for a number of others aimed at dealing with the immediate problems of the emerging fuel crisis. Earlier, in his energy messages of June 4, 1971, and April 28, 1973, and his energy statement of June 29, 1973, he laid out programs aimed at longer term results: the development of the great potential of our domestic energy resources. On November 7 and November 25, 1973, the President addressed the Nation on our energy emergency and outlined plans and actions for reducing the demand for energy, particularly petroleum; for substituting fuels wherever possible, for shifting refinery production; and where possible increasing domestic energy production. He has also outlined plans for moving the Nation toward demonstrating the potential for energy self-sufficiency in the years ahead through greatly increased efforts in research and development and other steps to increase domestic production. These latter actions will in time bear fruit, and we shall then no longer be vulnerable to the shocks and tremors of the world oil market.

But just now, and for the next several years, the problem is to make ends meet with what we have.

Senator CANNON. Mr. Wakefield, would you pull that microphone back a little closer? I am not sure they can hear you in the back of the room.

Mr. WAKEFIELD. Yes, sir.

One of the critical problems we face, which existed before the Mideast cutoff and would exist even if the embargo were lifted, is shortages of petroleum in particular regions, one of which is the west coast. Because the focus of these hearings is on the Elk Hills Naval Petroleum Reserve, I shall confine the remainder of my remarks to the energy problems of the west coast and of California.

District V, which comprises the three coastal States, plus Alaska, Hawaii, Nevada, and Arizona, is heavily dependent upon outside sources for its energy supply. Indigenous petroleum production accounts for only half of its needs, and an additional 5 percent is provided by sources east of the Rockies. The remaining 45 percent is supplied by foreign sources. The district produces barely one-fourth of its natural gas requirements, with the balance being supplied by sources in Canada and the United States, principally west Texas and New Mexico.

California is uniquely dependent upon oil and gas, which supply 90 percent of its needs. Its affinity for the automobile is also unique: in overwhelming measure, the basic mode of transport in California is the private automobile. The Bay Area Rapid Transit System (BART) will accommodate not more than 6 percent of the commuter traffic in its service area when it is fully developed. In Los Angeles there is no comparable system to BART for public transport, nor will there be one for several more years. Maintenance of adequate supplies of gasoline is, therefore, of critical importance to California's economy, which contributes substantially to the support of the large contingents of our Armed Forces based in that State. California refineries, moreover, supply most of the petroleum needs of Nevada and a large share of Arizona's requirements, so that difficulties in obtaining feedstocks for these refineries are reflected in product availability in the neighboring States.

During the first 7 months of 1973, district V imports from Arab nations, directly or indirectly, averaged 260,000 barrels a day, of which the largest part was landed in California. The gross figure approximates the size of the denial being experienced by district V refineries, and is approximately 12 percent of their runs.

Even before the cutoff, however, California had a crude oil deficiency estimated at 55,000 barrels a day in the San Joaquin Valley and Los Angeles producing areas, according to reports from the California Independent Refinery Association. This deficiency was expected to increase to 90,000 barrels a day by January 1, 1974. It is accordingly increased by the amount of the Arab curtailments that apply to California refineries.

In addition to the shortage of crude oil for refineries, California has a severe and rapidly worsening problem with the fuel requirements of its electric utilities. As recently as last year, some 550 billion cubic feet of gas was available for power generation, and supplied more than 80 percent of all fuel used in steam electric plants. This year only 400 billion cubic feet will be available. In 1974 the availability of gas for power generation is estimated to be not more than 160 billion cubic feet, and only 80 billion cubic feet in 1975. The deficit in gas must be made up by oil. The California Public Utility Commission, however, foresees a shortage of oil for this purpose of 33 million barrels in 1974, or approximately 23 percent of the total requirement.

Looking at the potential for supplying this demand, the only large known undeveloped reserve of crude oil in California is the Santa Ynez field in the Santa Barbara Channel. The final environmental impact statement is under preparation and will be submitted next spring. Field development will require at least 2 years after the permits are granted. The trans-Alaska pipeline will solve California's prob-

lem—as well as the rest of the Pacific coast—for a good many years to come, but the first increments cannot be expected before mid-1977.

The efficient way of making use of the oil from Elk Hills is through utilization in the California and west coast transportation, refinery, and distribution system with arrangements—which are common in the petroleum industry—for the Department of Defense to obtain comparable amounts of petroleum products throughout the world, depending upon where the needs exist and where the deliveries can be made most efficiently. The location of Elk Hills in California is particularly fortunate because of our regional shortage situation in the west coast.

I am gratified that your committee is proceeding with its prompt consideration of the joint resolution and I would like to convey Mr. Simon's strong support for its prompt enactment.

Thank you.

Senator CANNON. Thank you very much, Mr. Wakefield.

What is your present estimate now as to when the United States will become self-sufficient? We have heard so many different figures that it is hard to arrive precisely at one that many people can agree on.

Mr. WAKEFIELD. As you know, Mr. Chairman, the President has called upon us to strive to attain domestic self-sufficiency by 1980. Whether we can actually do this or not will require many things, including changes in legislation and a massive infusion of capital. Other estimates indicate that sometime during the decade of the eighties we can hope to achieve domestic self-sufficiency, but I think anyone would agree that the President's call for self-sufficiency by 1980 is perhaps, the earliest conceivable date that we could realistically hope to meet our demands for domestic energy sources.

The west coast, however, with the construction of the Alaskan pipeline, should be domestically self-sufficient by the time that is in full capacity in the latter part of this decade.

Senator CANNON. Has Mr. Simon's office reviewed with the Department of Defense its current requirements to attempt to determine whether the imposition of the figures under the Defense Production Act are, in fact, needed?

Mr. WAKEFIELD. Yes. We are looking at that very carefully, Mr. Chairman, to determine the extent to which only the very basic defense needs must be met. We are trying everything we can do, and the Defense Department has been very cooperative to conserve its use of energy and using it more efficiently.

Senator CANNON. Senator Scott.

Senator SCOTT. Thank you, Mr. Chairman.

I have just a very few questions and possibly it should be addressed to our Defense witnesses, but let me ask what is the extent of our reserves in Elk Hills?

Mr. WAKEFIELD. As I understand, our proved reserves are in the neighborhood of 1 billion barrels. Of course, the total resource would be somewhat higher than that.

Senator SCOTT. Is any of that being used at the present time?

Mr. WAKEFIELD. Only a very small amount, something over, slightly over, 2,000 barrels a day are being produced and this is to keep the wells in working condition, but it is a very nominal amount.

Senator SCOTT. With the consent of Congress, what would you propose to do?

Mr. WAKEFIELD. It should be not produced at more than the maximum efficient rate, which I believe under the existing state of development, can be possibly as high as 160,000 barrels a day after 60 days, 60 days after production is commenced.

Senator SCOTT. How long will the reserve last at that rate? Maybe that is a mathematical computation.

Mr. WAKEFIELD. It is a mathematical question, but it would, and perhaps the Defense witnesses can better address this, but it would certainly be well over a decade.

Senator SCOTT. Over a decade.

Senator CANNON. It figures a little over 20 years at that figure, based on the known reserves at the present time.

Senator SCOTT. Mr. Chairman, that is all I wanted to ask. My thinking was if the President's schedule of self-sufficiency of 10 years is met, then we do not have to be particularly concerned about this reserve.

Mr. WAKEFIELD. I think I should add, Senator Scott, that there are, of course, additional naval reserves not only there but on the North Slope of Alaska that could be developed, further developed, and made available in the future.

Senator SCOTT. Thank you very much.

Senator CANNON. Mr. Wakefield, in April the Department of the Navy submitted an exploration and development plan to the White House and recommended that it be forwarded to the Congress together with the request for funds. What is the status of that finding?

Mr. WAKEFIELD. I am not completely familiar with that, Mr. Chairman. I know it has been under review but I do not know the exact status at this time.

Senator CANNON. Would you not say that from April up to the present time for a review would be a rather long time in view of our present shortage of fuel requirements?

Mr. WAKEFIELD. Perhaps I could look into that and submit it for the record. I am just not familiar with it, Mr. Chairman.

Senator CANNON. All right, sir, if you will do that.

Senator Nunn.

[The information follows:]

The plan submitted by the Assistant Secretary of the Navy has been under review within the Executive Office of the President. The Joint Resolution transmitted to the Congress by the President on November 7, 1973, would provide the funds to pursue the goals authorized in that plan. The plan was developed by the Navy prior to the current energy emergency. I understand that the Secretary of the Navy will be asked to review the plan in the light of the current national energy situation, revise it if appropriate, and resubmit it to the President.

Senator NUNN. Mr. Wakefield, what is the—I suppose the underlying purpose of this resolution that we are considering is to accelerate the Elk Hills production for defense purposes only; is that right?

Mr. WAKEFIELD. I think broadly, the national—is to have sufficient supplies to meet the national defense. I think perhaps the most efficient way would be for the products to go to the, eventually to the national defense needs of the Department of Defense. They might not go directly to them but, for example, crude oil might be sold to a company in California that, in turn, would sell refinery products to the Defense Department perhaps somewhere else in the United States or somewhere else in the world but essentially defense needs; yes, sir.

Senator NUNN. What is the barrels per day you want to accelerate the production by?

Mr. WAKEFIELD. I understand that it can go within something like 60 days to the 160,000 barrels a day.

Senator NUNN. How much is the military short right now?

Mr. WAKEFIELD. I believe the figures they have submitted are somethink in the range of 300,000 barrels per day but I am sure the Defense Department witnesses can give you exact figures on that.

Senator NUNN. What role are you playing in this, is your Department playing in determining whether this is justified now? How closely do you examine the request?

Mr. WAKEFIELD. Specifically, the Federal Energy Administration is looking very carefully at the Defense Department's submission to make sure that there are no needs that are being requested that are not absolutely essential.

Senator NUNN. Are you checking to determine whether the Department of Defense has cut down on the use of fuel as much as possible?

Mr. WAKEFIELD. Yes, we are.

Senator NUNN. How are you going about that? Who is assigned to that task?

Mr. WAKEFIELD. The Office of Energy Conservation, which has been within the Department of the Interior and is now being transferred to the Federal Energy Office, has looked very carefully into this, and has worked with the Defense Department, and has money for what they are doing and they have cut down very considerably on the amount of energy that they use.

Senator NUNN. How much, to what extent, is the Defense Department now getting fuel under this emergency act?

Mr. WAKEFIELD. Under the Defense Production Act, when their stocks fall to a certain level they are entitled to come in and request a certain amount.

Senator NUNN. Do you know how much per day that is coming to now?

Mr. WAKEFIELD. I do not know exactly. I believe our projections for the first quarter are something in the neighborhood of 300,000 barrels per day, but the exact amounts that have been asked for November and December, I do not have with me.

Senator NUNN. Are you saying that the Elk Hills production, increased production, may not go directly to the Defense Department? It may go to someone else in turn who would swap petroleum back to the Defense Department, is that what you are saying?

Mr. WAKEFIELD. I believe that would be the most efficient way.

Senator NUNN. Is that already being done with the current production in Elk Hills or is it going directly to the Defense Department?

Mr. WAKEFIELD. No, the current production, which is very nominal, is being purchased by Shell Oil Co.

Senator NUNN. So, it is not being used for defense purposes now?

Mr. WAKEFIELD. It is not a requirement that their allocation be used for defense purposes, it just goes into Shell's system, I believe.

Senator NUNN. Is it being used for defense purposes?

Mr. WAKEFIELD. Not to my knowledge. Some of it may be but it is not required to be.

Senator NUNN. Are we bound that Shell gets that? How long a contract is that?

Mr. WAKEFIELD. The contract is cancelable with the proper finding by the Congress on 10 days notice. I do not know if there is a definite term and date beside that.

Senator NUNN. Why would we have invoked the emergency act and gotten civilian fuel for defense purposes if we are still using defense fuel under a Shell contract?

Mr. WAKEFIELD. The Shell contract is a general contract which, my understanding is, that the Defense Production Act by invoking it, would not override that contract. But that is a very nominal amount, it is only about 2,000 barrels a day, I believe.

Senator NUNN. It can be revoked at any time, is that right?

Mr. WAKEFIELD. If there is a proper finding by Congress, which would permit the opening up of the reserves for national defense, then the contract is cancelable on 10 days notice. Otherwise, it is terminable, I believe, on 6 months notice to Shell.

Senator NUNN. Is there anything in this Senate Joint Resolution 176 that would require that every bit of the accelerated production be utilized by the Department of Defense?

Mr. WAKEFIELD. Not to my knowledge. It would just permit it to be sold to refineries and—well, to major and independent refineries but, as I understand it, there would be consultations with this committee and the Armed Services Committee in the House, before any contracts are let.

Senator NUNN. We really are opening it up then not just for defense purposes. We are opening up Elk Hills for the emergency in general, is that right?

Mr. WAKEFIELD. That is correct.

Senator NUNN. One other question I had on that particular point. On that particular point, have you already appeared before the House Armed Services Committee on this?

Mr. WAKEFIELD. Yes; although it was 2 months ago, prior to the Arab embargo.

Senator NUNN. Do you know whether they have taken any official position either subcommittee or committeewise?

Mr. WAKEFIELD. I believe there is a report out but I am not certain on that. I am just not certain what the report is.

Senator NUNN. I suppose the Defense witnesses would know about that.

Mr. WAKEFIELD. Yes.

Senator NUNN. One point that is really off the point, but I find it disturbing on page 5 you say that the BART system in California, rapid transit system, will only take care of 6 percent of the commuter traffic in that region when it is completed. Is that correct?

Mr. WAKEFIELD. When it is fully developed, that is my understanding.

Senator NUNN. Ninety-four percent will not even be utilizing in that region, the rapid transit system?

Mr. WAKEFIELD. I think that points up how much particularly California is dependent upon the automobile, Senator.

Senator NUNN. It also seems to point out, if it is accurate, the rapid transit system is going to have very little impact in any way. If 49 percent of the commuter service in that area is not even going to utilize it, why are they building it?

Mr. WAKEFIELD. Six percent, of course, is a fairly, would be a fairly significant amount but while this may have been an earlier projection, I believe that with the emergency, with people becoming more conscious of car pooling, of the need for mass transit, that figure may be considerably understated.

Senator NUNN. If you have a source on this, its over points it has nothing to do with the resolution and I am in no hurry and you have other important things, if you have a source on this, I would like to get the projection.

Mr. WAKEFIELD. Fine, Senator.

Senator SCOTT. Mr. Chairman, if the witness sends one to Senator Nunn, I would like to have a copy also.

Senator NUNN. Mr. Chairman, I wanted to make certain then, and I assume this is correct, this resolution we are considering, would open up Elks Hills for not just defense purposes but for any other purposes, that was not my understanding before I came here. That is the testimony.

Senator CANNON. That will be rather fully explored with other witnesses, but while you may be technically correct, I think actually that is not correct, because at the present time the Defense Department is imposing a burden of 300,000 barrels a day on the civilian economy. If we go to 160,000 barrels here, that will replace 160,000 of that 300,000 that the Defense Department is now getting from the civilian economy. So to that extent, this will be taking care of the 160,000 barrels a day of Defense Department requirements, and we do not foresee the defense requirements dropping appreciably below that figure. So the only time that you could get really to the point that you would say this was being used for nondefense purposes would be if the Defense Department were able to meet their needs completely through other sources without any call on the economy and that is not likely to occur until such time as we have the Alaskan flow running so that the reserve No. 4 is able to supply Defense Department needs. Is that correct?

Mr. WAKEFIELD. That is correct, Mr. Chairman, and while I did not mean to imply it would not go for national defense purposes, I think the point is that they may not be sold directly to the Defense Department. I believe they would eventually wind up meeting national defense needs, as the chairman has indicated.

Senator NUNN. One other question on that particular point. Assuming there was no drain, no call, on civilian fuel by the Defense Department, and assuming there were 300,000 barrels were not being used now, in other words, go back to August of this year or July of this year, at that stage was the Defense Department completely self-sufficient in terms of fuel?

Mr. WAKEFIELD. I do not believe so. I believe their situation was getting quite tight even then, but I think the Defense Department witnesses could perhaps indicate exactly what their situation has been in that tight situation.

Senator NUNN. I will get it from them, Mr. Chairman. Thank you.

Senator CANNON. Just for oversimplification, the Defense Department was able to make their purchases wherever they needed at that time. Now they cannot make as much purchases in as many areas as they could before and they have had to go some place else to make up

the shortfall and doing that under the guise of the Defense Production Act.

Senator NUNN. I was just interested to find out how the Defense Department even without a crisis, was getting their product, because it seems to me they are getting an awful lot now, it seems to be an incremental.

Senator CANNON. I believe half the Defense Department requirements were coming from foreign sources prior to the present situation.

Mr. WAKEFIELD. Yes, sir.

Senator CANNON. You pointed out in your statement the rather dire situation of California and particularly the southern California area, as did Senator Cranston, when you pointed out they are dependent for about 45 percent of their oil from outside sources.

How do you propose to solve this problem for them and, second, does this mean that California, if no place else, is going to have to go to gas rationing?

Mr. WAKEFIELD. First, I think we will have an allocation program for all fuels in place by the end of this month which will attempt to make sure that no section of the country, whether it be southern California, New England, upper midwest, or any other section is placed in an extremely short position while other areas may not be short. In other words, we will attempt to spread the shortages as equitably as possible around the country.

I would not think that we would attempt to put in any type of, for example, gasoline rationing plan in southern California that would not apply across the country.

On the other hand, we will be looking to each State to try to develop their own conservation plans to meet perhaps special needs in their States, since the fuel mix in every State would be different.

Senator CANNON. Have you made a firm decision one way or the other on the question of gasoline rationing?

Mr. WAKEFIELD. No; we have not.

Senator CANNON. At some point in time?

Mr. WAKEFIELD. Mr. Simon has indicated that by the end of the year a firm decision will be announced. But it has not, to my knowledge, been made at this time.

Senator SCOTT. Mr. Chairman, let me explore one other point. In the chairman's statement and also in Senator Cranston's statement, reference is made to Standard Oil Co. having an interest in this reserve. I wonder if you would comment, you indicated, I believe, that 160,000 barrels of oil per day might be taken out of this reserve, now would that trigger the Standard Oil taking a similar amount of oil out of the reserve and would it, in fact, be 320,000 barrels if this were opened or would you just comment on what effect, if any, this resolution would have on the right of Standard Oil to take out?

Mr. WAKEFIELD. As I understand the contract, and perhaps Navy and Standard Oil witnesses can explain it better than I, but as I understand the contract, and the unit agreement plan. Standard Oil of California owns in fee a certain percentage which I believe varies depending on which zone you are producing from, but a certain percentage of the total area of the reserve is owned by Standard and they would get that percentage themselves.

Senator SCOTT. They own it in fee but they are prevented now from taking any oil out of the property that they own; is that correct?

Mr. WAKEFIELD. Under the agreement they have entered into with the Navy; yes.

Senator SCOTT. I notice Senator Cranston's concluding statement, he says:

> In closing, Mr. Chairman, I wish to say I am aware of the possible windfall which may accrue to Standard Oil Co. if Elk Hills is open for production.

What would he mean by that, I was not here, and I apologize, Mr. Chairman. Is there a windfall that you are aware of?

Mr. WAKEFIELD. The only windfall that I am aware of, Senator Scott, is the possibility that Standard of California, under certain terms, may be able to negate the contract that they have, and if they could negate that contract, then in the future they could continue to produce oil from their percentage. But, to my knowledge, there would not be any windfall that could be gained if it were opened to, say, 160,000 barrels per day and a certain percentage of that.

Senator SCOTT. There is nothing in the agreement when the Government takes oil out that Standard Oil is able to take an equal amount out, no agreement to that effect?

Mr. WAKEFIELD. Only to the percentage that they own in fee.

Senator SCOTT. Thank you.

Senator CANNON. That will be gone into by other witnesses, but again as an oversimplification, I would simply say it would be as a joint operation, if it is in accordance with this contract, and Standard would receive roughly 30 percent or one-third of the amount produced. However, Standard has a payback obligation to the Federal Government in the amount of roughly, 25 million barrels, is that correct, is that the figure, do you recall?

Mr. WAKEFIELD. I believe it is $25 million.

Senator CANNON. $25 million payback to the Federal Government. So, the Federal Government would have that first call. But it is not a question of Standard producing their oil and the Government producing theirs. It is a joint venture-type of operation under the agreement, and if the agreement remains in effect, I think this was the thing that Senator Cranston wanted to insure, that we were not going to violate the terms of the agreement so that Standard could go in and pump whatever amount of oil they wanted to, because if they were able to do that, then the Government would have to likewise pump in self-defense and we would have a situation there of possible depletion of this reserve which the contract was set up to protect.

Mr. WAKEFIELD. Yes.

Senator CANNON. Thank you very much for being here, Mr. Wakefield.

Mr. WAKEFIELD. Thank you, Mr. Chairman.

Senator CANNON. The next witness is Hon. Jack Mendolia, Assistant Secretary of Defense for Installations and Logistics.

Secretary Bowers, I think it might be a good time for you to come up and I think I see Admiral Sonenshein and Captain Trunz—have all of you up here at one time and any other that you need. All right, sir.

STATEMENT OF HON. ARTHUR I. MENDOLIA, ASSISTANT SECRETARY OF DEFENSE FOR INSTALLATIONS AND LOGISTICS, ACCOMPANIED BY REAR ADM. NATHAN SONENSHEIN, U.S. NAVY, DIRECTOR FOR ENERGY, AND COMDR. J. P. TRUNZ, JR., CEC, U.S. NAVY, OFFICE OF NAVAL PETROLEUM AND OIL SHALE RESERVES

Mr. MENDOLIA. Good morning, Mr. Chairman and members of the committee. I am glad to have the opportunity to appear here today and present Department of Defense views on the Joint Resolution authorizing increased production of petroleum from Ethe Elk Hills Naval Petroleum Reserve for national defense purposes. I have with me on my left Rear Adm. Nathan Sonenshein, U.S. Navy, the Director for Energy for the Department of Defense.

You were all aware of the national energy problem even before it was aggravated by the Arab oil boycott of the United States. We were experiencing a growing dependence on foreign imports. The loss caused by the embargo has been amplified by the need to obtain most military fuel needs from domestic sources to compensate for the loss of much of the foreign supply on which the Department of Defense normally depended to meet up to half its total worldwide needs.

The Arab oil embargo will deny the Nation perhaps as much as 17 percent of its oil needs during the winter months. Other administration witnesses can describe in more detail the national energy situation and the actions that are being taken to both reduce the demand for energy and increase domestic energy production to the end that we will maintain the strong economy upon which our national defense depends.

I would like to confine my assessment primarily to the Department of Defense. Foreign oil supplies under existing contracts are being curtailed and we feel that continuation of the embargo will essentially eliminate the foreign supply. Many of our contracts will expire at the end of December, and the prospects for obtaining new contracts are poor. Pressure from the Arab countries will continue to prevent the oil companies from selling Arab-based products to the U.S. military forces. In addition, the pressure of diminishing supplies in foreign nations, especially those whose shortage is greater than ours, may create a reluctance on the part of governments to allow sales to our forces when we are known to have the capability to supply ourselves from domestic resources. Under these circumstances, the Department of Defense will have to rely upon the domestic supply to satisfy its essential worldwide fuel needs.

Overall Department of Defense fuel needs at an austere sustaining level approximate 625,000 barrels per day. Since half of these needs formerly obtained offshore must now be largely obtained from domestic sources, the result is the imposition of a new daily requirement of up to 300,000 barrels per day on the reduced domestic supply. In effect, added defense needs increase the gap between supply and demand in the civil sector.

We in the Department of Defense deeply regret the necessity of preempting fuel under the Defense Production Act at a time when supply is short and the Nation is faced with potential economic and physical hardships. Yet, such action is imperative if theNation's

security is not to be endangered because of impaired military readiness resulting from inadequate fuel supplies.

The military forces have taken stern actions to conserve fuel through reduced consumption, where significant adverse impact on readiness can be avoided. Our currently programed level of fuel consumption in fiscal year 1974 is the lowest since fiscal year 1958. It is more than 16 percent below the fiscal year 1973 consumption rate.

Beyond conservation, there is at least one action that can be taken to meet the needs of national defense. That is the activation of the No. 1 Naval Petroleum Reserves in Elk Hills, Calif. Within 60 days of the implementing order, Elk Hills could be contributing 100,000 barrels a day or more to the Nation's crude oil supply, and within a relatively short time thereafter could be brought up to 160,000 barrels a day. This would offset well over half the maximum potential impact which denial of foreign military petroleum sources may impose on the domestic economy.

The Secretary of the Navy has found that production of the naval petroleum reserves is required for the national defense. That finding has been approved by the President, and is strongly supported by the Department of Defense. Final approval rests with the Congress. I urge you to act favorably on the joint resolution which is now before you.

Thank you.

Senator CANNON. Thank you, Mr. Secretary.

I recognize that the DOD energy requirements, as compared to the total requirements for the United States, are comparatively small. I wonder if you would outline for us just what the total DOD requirement is, broken down by types of energy and what each product is used for? You gave us your total barrels figure but could you break that down for us?

Mr. MENDOLIA. Yes; I can, Mr. Chairman. DOD currently uses about 3.6 to 3.7 percent of the total U.S. petroleum requirements, and our estimated 1974 consumption in barrels per day is as follows: Our jet fuel consumption is approximately 390,000 barrels a day. Our gasoline consumption is 40,000 barrels a day. Our distillate consumption is 25,000 barrels per day, and residual fuel consumption is 70,000 barrels per day for a total of 625,000 barrels a day.

Senator CANNON. What portion of DOD daily consumption of petroleum products comes from foreign sources and what are these sources?

Mr. MENDOLIA. Approximately 50 percent of DOD's fuel came from abroad. That is essentially cut off. Basically, that was supplied from Singapore, other sources in the Pacific, and refineries in Europe that were supplied with Arab crude. That essentially has been totally cut off.

Senator CANNON. Did the Singapore supply come from Arab countries as well, is that why that was cut off?

Mr. MENDOLIA. Part of it did. But basically, the refineries based in Singapore cut us off 100 percent even though part of the crude that was used by the Singapore refineries was not Arab crude. Some of it was Iranian crude and Indonesian crude.

Senator CANNON. Will the production from Elk Hills affect those requirements on a one-for-one basis? That is, if you are able to

get 100,000 barrels at the outset and then eventually 160,000 barrels a day from Elk Hills, would that go specifically toward that 600,000 barrels per day?

Mr. MENDOLIA. Yes; it would. It would enable us to reduce our requirements on the civilian economy when Elk Hills is in production.

Senator CANNON. What is the current status of our war reserves—that is, are we continuing to draw down on our current war reserve stocks?

Mr. MENDOLIA. Yes; we are, Mr. Chairman. We are slightly into our reserve stock but we expect that the inroads into that stock ought to end by the end of this December as we get deliveries as a result of invoking the Defense Production Act.

Senator CANNON. Are you now getting the deliveries under the Defense Production Act?

Mr. MENDOLIA. Yes; we are. We have gotten excellent response from the 22 companies that were tasked by the Department of the Interior.

Senator CANNON. What about Southeast Asia, are we continuing to send petroleum products to Cambodia and Vietnam?

Mr. MENDOLIA. Yes; we are. We are supplying those areas out of our stocks in the Pacific.

Senator CANNON. To what extent?

Mr. MENDOLIA. The approximate consumption in Southeast Asia, primarily in South Vietnam and Cambodia, is about 20,000 barrels per day.

Senator CANNON. How will the destruction of Vietnam reserves affect our overall supply picture?

Mr. MENDOLIA. The destruction of the reserves in Vietnam was primarily gasoline for the civilian economy. Relatively little of the military fuel was damaged. That will affect the South Vietnam economy and we are attempting to take measures to help them recoup their supplies.

Senator CANNON. What procedure is followed to requisition petroleum products under the Defense Production Act?

Mr. MENDOLIA. Under the Defense Production Act the Department of Defense determines its minimum fuel needs and presents those fuel needs to the Department of the Interior which, in turn, determines whether our requirements are indeed necessary. They, in turn, task the refineries that they think would be able to supply.

Senator CANNON. What is the average daily amount of oil allocated for military use under the act? Is that that 300,000 barrels because they are able to secure the rest in other places?

Mr. MENDOLIA. That is right. Currently we have coverage under existing contracts which enables us to get roughly 325,000 barrels per day. He invoked the Defense Production Act to supplement what we already have covered under contracts.

Senator CANNON. How long do you foresee a requirement to continue to invoke this provision of the act to provide fuel to the military?

Mr. MENDOLIA. Hopefully, it would not be much longer, since we expect that fuel allocation would supersede the Defense Production Act. Under that act the Department of Defense, we expect, would get priority for our requirements, but the Fuel Allocation Act would basically determine how to allocate for all U.S. requirements.

Senator CANNON. Are you saying then that you might get less under the Fuel Allocation Act than you are taking out at the present time?

Mr. MENDOLIA. We hope not. We hope to be able to make our case before the body that will administer the Fuel Allocation Act and be able to get our requirements.

Senator CANNON. There seems to be no doubt that defense production allocations are having an adverse effect on general aviation, commercial airlines, and farmers. What are the future prospects of further reducing defense requirements or of increasing defense fuel supplies to avoid again invoking the Defense Production Act or what is likely to be the effect under the fuel allocation program on these segments?

Mr. MENDOLIA. Mr. Chairman, we do not see any likelihood in the near term of not having to get fuel allocated either under the Fuel Allocation Act or the Defense Production Act because the Department of Defense was unable to get its requirements even before the Arab oil embargo. We see no forecast of future supply-demand balance which says the Department of Defense will not have to continue to get its allocation under the Defense Act or allocation.

Senator CANNON. What is the DOD requirement and shortfall?

Mr. MENDOLIA. The current total requirement is approximately 625,000 barrels per day and our shortfall, without invoking the Production Act, would have been approximately 300,000 barrels per day.

Senator CANNON. Has that 625,000 figure gone up or down recently, has it varied much?

Mr. MENDOLIA. That is down from an average consumption in fiscal year 1973 of 750,000 barrels per day. That reduction is made up of, you might say, two components. In the fiscal year 1973 about 7 percent of that consumption was attributable to the tail end of the activities in South Vietnam. The other 7 percent points reflect conservation measures taken in fiscal year 1974.

Senator CANNON. We have heard of complaints by operational commanders that shortage of fuel is degrading their readiness. Can you respond to that?

Mr. MENDOLIA. I would say that for the near term we have taken action in the Department of Defense which undoubtedly would degrade readiness in the short term. If continued for a long period of time, our view is that we cannot continue the severe cut without adversely affecting readiness. DOD is in the process of determining the absolute minimum fuel requirements that will enable us to maintain training that is necessary for a militarily ready force.

Senator CANNON. How do you interpret the law governing the naval petroleum reserves as permissive of use of the reserves in peacetime? Aren't these reserves to be held for a military emergency or are they able to be used simply for military purposes?

Mr. MENDOLIA. The law provides that use of the reserves is for national defense. We believe that an adequate supply of fuel is required to insure the maintenance of a high level of military readiness in peacetime and that it is just as important that this be done in peacetime as in times of conflict.

Senator CANNON. So that this would not necessarily imply that it had to be a national emergency or military emergency?

Mr. MENDOLIA. That is right.

Senator CANNON. What is the position of the Joint Chiefs of Staff on this proposed joint resolution?

Mr. MENDOLIA. The Joint Chiefs of Staff support the need to produce the reserves for 1 year at 160,000 barrels a day. However, their view is that this action should not be taken as a precedent and, in fact, they recommend strengthening the resolution by adding language that would make it explicit that this is a one-time response. It is not to be a precedent for future use except as required for major international military conflict. That is their position on it.

Senator CANNON. I do not quite follow their logic on that. They say they do not mind your doing it this one time but they would not want you to do it again unless it was for a major military emergency, is that right?

Mr. MENDOLIA. That is right. That is their position.

Senator SCOTT. Mr. Chairman, if I might intrude a moment; who determines a precedent? Does not the Congress do it? Do they not have to come back to the Congress?

Mr. MENDOLIA. Yes, we would.

Senator SCOTT. So actually, they are just expressing an opinion that would have no weight other than such as Congress saw fit to give to it?

Mr. MENDOLIA. That is correct. I think their view reflects a desire on their part that DOD come to the Congress at the expiration of the first year and ask for continued production if that appears to be in the national interest.

Senator CANNON. The joint resolution does not specify how much production might be expected from Elk Hills. We have heard conflicting statements. Will you outline for us just what your expectations are?

Mr. MENDOLIA. Our expectations are that the production capability of Elk Hills is 160,000 barrels a day. We have stated that within 60 days we could get up to 100,000 barrels a day. Shortly thereafter, and that would be determined by, you might say, the rate of which we could raise production, we could get up to 160,000 barrels per day. We think that would be a relatively short time thereafter.

Senator CANNON. Do you have the distribution pipelines for that producing 160,000?

Mr. MENDOLIA. Yes, we do.

Senator CANNON. Do you have the distrbution pipelines for that purpose?

Mr. MENDOLIA. No, we do not have the pipeline to handle 160,000 barrels per day but our expectation is we could get assistance from the pipeline facilities that are in the vicinity in a short time to move the 160,000 barrels per day.

Senator CANNON. We understand that the Navy requests for funds to explore and develop the naval petroleum reserves have historically been deleted by DOD and OMB. What is the present outlook?

Mr. MENDOLIA. We would expect that as a result of the Congress approving the joint resolution there would be adequate funds to initiate production. The joint resolution proposes that the income that would be obtained from the sale of fuel oil would be set aside in a fund

which would provide for the continuing funds needed to expand production and to maintain production out of that field.

Senator CANNON. Would that require approval of OMB for the use of those funds?

Mr. MENDOLIA. Not to my knowledge.

Senator CANNON. Do you have a program for fuel conservation by defense contractors?

Mr. MENDOLIA. We do not have a formal plan but we are working on one. We intend to issue a Department of Defense procurement circular which would outline conservation measures which we think imperative that our contractors take, and we are reviewing the desirability of having a clause in our contracts which would in essence require specific conservation measures on the part of our defense contractors.

Senator CANNON. Do you have a program to convert oil-firing furnaces with coal so as to displace some oil requirements?

Mr. MENDOLIA. Yes, we do. Short term, we have identified about four powerplants in the Navy and in the Air Force that could be readily converted to coal, and that would give us savings of about 750,000 barrels of oil. We have a number of others that could be converted over a longer period of time, perhaps 18 to 26 months, once we have resolved the air pollution and the physical facilities required to handle coal. Overall our program could save about 18 million barrels of oil by converting identified powerplants from oil to coal.

Senator CANNON. You could save how many?

Mr. MENDOLIA. Eighteen million barrels, per year. That is the ultimate that we see.

Senator CANNON. What is the status of an experimental program that you have with one of the ships now with relation to the use of coal?

Mr. MENDOLIA. We have tested oil made from coal from a pilot plant in Princeton, N.J. It was tried on the U.S.S. *Johnson* and my understanding is that that test was successful. We intend to pursue that further to determine whether that, among other alternatives for liquefaction of coal, would be an economical one for the DOD to monitor and to encourage.

Senator CANNON. By the way, what is the estimated cost at Elk Hills to go to the 100,000 barrels per day and then the cost to go on to 160,000 barrels?

Mr. MENDOLIA. For a 100,000 barrels a day it is estimated it would cost about $2 million, and to sustain production at 160,000 barrels a day we would estimate it would cost about $22 million.

Senator CANNON. $22 million?

Mr. MENDOLIA. That is right.

Senator CANNON. We have heard that there is a shortage of ready coal for use. What has been the DOD procurement experience in that?

Mr. MENDOLIA. Our experience has been that it is difficult for us to procure our coal requirements. As we know, coal production has declined slightly in the last 2 years in the United States.

Senator CANNON. We are also told that there is a dearth of stokers even if you do try to convert to coal. What is the situation there?

Mr. MENDOLIA. Yes, we have investigated the stoker availability

with major stoker manufacturers and have found there is a serious problem of obtaining stokers immediately.

Senator CANNON. Is it a problem you are going to be able to resolve, if you cannot get the coal and you cannot get the stokers?

Mr. MENDOLIA. I think that is going to be a very difficult problem for action to be taken short term which will increase coal availability, but we will obviously take every action possible to get a supply of coal for the conversions.

Senator CANNON. We understand the Army has done some research on solar heating. Could you give us a fill-in on that?

Mr. MENDOLIA. Yes; they recently signed a small contract with General Electric for development in this vital area. The contract is in two parts. The first phase will be approximately $200,000. The first phase covers a development of a research program and equipment design and the second phase will cover equipment manufacturing. Now we consider DOD's role in this field to be primarily to monitor of the development, and to participate in test programs. We intend to pursue that.

Senator CANNON. DOD uses a variety of a single type of fuel. Have you explored the possibility of standardization?

Mr. MENDOLIA. Yes, we have. We have asked the Joint Logistics Commanders to move promptly on standardization of fuel so there will be a minimum disparity between the fuels that are used in DOD and commercial fuels. This ought to make it simpler for DOD to get its requirement of fuel. That is a very active program.

Senator CANNON. Does the Defense Department have any programs of cooperation with local communities to help each other through critical periods? I have in mind such things as near idle coal or oil-powered plants or even ships' powerplants in Rhode Island or Massachusetts possibly serving the critical civilian needs. I believe the Boston Naval Shipyard provided energy to Edison's South Boston plant during the blackout a couple of years ago.

Mr. MENDOLIA. Yes, the DOD has historically provided assistance to civilian communities in the time of need. But, I think our view overall would indicate that assistance would necessarily be quite limited, since the facilities that we have in DOD, for instance, for the generation of power supply, are relatively small in capacity and probably could not be operated for long periods of time.

Senator CANNON. What about activating the nuclear ship *Savannah* as a power source? Has any consideration been given to that?

Mr. MENDOLIA. The ship *Savannah*, of course, is not now a Navy ship. If it were to be considered as a potential source of electrical generation, it would not be a very economical source of power. Its core has been removed. It would take, we estimate, 1½ to 2 years to put the *Savannah* back into position where it could generate power. Its design is such that only about 15 percent of the power generated could be fed to, say, a civilian community because the ship was designed primarily to use the output of the energy for ship propulsion. It would not be a very good source of emergency power.

Senator CANNON. Would you or Admiral Sonenshein outline for us just what positive steps the DOD has taken, or proposes to take, to conserve energy? In this respect, I should like specifics as to what savings you have thus far accomplished, and what you expect to

accomplish? Based upon the facts available to you now, what is your estimate as to when the United States may attain self-sufficiency in energy?

Mr. MENDOLIA. I would like to have Admiral Sonenshein give you some rundown on the energy conservation actions that we have taken and plan to take.

Admiral SONENSHEIN. The Department of Defense programs for conservation actually started in May 1973 when a very vigorous program was organized to achieve that end, especially in petroleum products.

Mr. Mendolia has already mentioned that we had a drawdown in 1973 with the phaseout of the Southeast Asia operations. We subtracted that from our baseline so as not to overstate the figures.

I would also say, in general, each of our services has had a long standing energy conservation program and what we really had to do was to give it added emphasis. We had to establish reduction quotas and management procedures for enforcement as well as to initiate very strong motivational efforts.

I would like to mention some representative ones and then give you some quantification of the results achieved. For example, we limited the underway time of ships while intensifying training afloat and ashore to minimize the impact on combat readiness. This was done selectively in various parts of the world. For example, in the Mediterranean and in the western Pacific very little reduction was imposed. However, in the eastern Pacific, for example and in the mid-Pacific rather substantial reductions were made.

The operational transit speeds of ships, aircraft, and ground vehicles were limited to the most economical ones. We required the elimination or the reduction of weapons and equipment demonstrations. We combined logistics flights for maximum load efficiency. We cut back the number of training flights by aircraft. We maximized the use of flight simulators to replace training flights. We required reduction of heating temperatures in buildings to achieve at least a 15-percent reduction in heating fuels consumed for administrative and residential purposes. We eliminated heating in warehouses where practical. We took steps to improve the insulation of buildings to reduce the heat losses. We have directed partial engine shutdown for aircraft on the ground, and to taxiing, on reduced power. We have limited the speed of automotive vehciles to a maximum of 50 miles per hour. We have limited the administrative use of vehicles and aircraft. We have eliminated all outdoor lighting, including ornamental decorations which are not required for mission or security purposes and we have closed all private vehicle gasoline stations, that are on Government property following the Presidential lead from 9 p.m., Saturday through Sunday.

To give you an appreciation for what has been achieved by this very vigorous effort, we measured our performance in two major categories. One is in installations and the other is in mobile operations. In the first category, installations, we reduced by 2 percent our purchased electrical energy; by 5 percent natural gas and propane usage; by 16 percent our fuel oil; by 12 percent coal; by 37 percent our purchased steam and hot water. These percentages and this performance relate to the first quarter of fiscal year 1974; that is, July, August, and September 1973.

With regard to mobile operations in aircraft there was a 24-percent reduction, in ships 27 percent, in ground equipment gasoline, 36 percent, and in ground equipment distillate 60 percent.

If one were to weight all these data that I have been citing to reduce them to one overall figure for the Department of Defense, it comes to about 22 percent.

I would add one more thought. In a summary we just received for all Federal agencies, which is compiled by the Office that Mr. Wakefield spoke of—the Energy Conservation Office in the Department of the Interior—the Defense Department leads all Federal agencies with this performance.

Senator CANNON. What additional conservation initiatives do you have in mind now; that is, what further reductions do you expect to be able to achieve?

Admiral SONENSHEIN. I would go back to what Mr. Mendolia said a moment ago. These reductions are very severe and border on impacting on training readiness and, therefore, on readiness. Whether they can be sustained for more than a few months is not clear to us. At the moment, I would not envisage any further reductions from those that have been described quantitatively, but we do intend to continue to maintain a very strong motivational and management program. For example, every time the inspector general of one of the services visits an installation for his periodic inspection he is now required to look into the efficiency with which the conservation program is carried out. So, it is a matter of keeping constant pressure on our activities and striking a balance between conservation and training for readiness.

Senator CANNON. Did you consult with the field commanders and elicit their cooperation or did you just simply direct them to propose reductions?

Admiral SONENSHEIN. Yes, sir, we certainly consulted. For example, we conducted two major seminars, one on the west coast in San Francisco on the 1st of October and one in Williamsburg, Va., on the 5th and 6th of November. They were widely attended by senior representatives of our services in both parts of the country and from abroad. In those meetings we had a free and full exchange of ideas whereby we could strengthen our program and continue the vigorous efforts that had already been started.

Senator CANNON. Now, a suggestion has been made to have the Armed Forces "stand down" or take a 1-month holiday, except for strategic units such as SAC, to save fuel for rebuilding the war reserve stocks, and perhaps avoiding the use of the Defense Production Act. Is that within the realm of possibility?

Mr. MENDOLIA. I think the judgment of the military commanders is that is not feasible. We feel our international posture would be gravely impaired. We would feel the benefit in fuel savings to the national economy would certainly be greatly outweighed by the security risk that would be entailed by such an option.

Senator CANNON. Admiral, you said that the Defense Department had made better progress than other agencies of Government. Could you give us a comparative figure there?

Admiral SONENSHEIN. Yes, sir; I have the summary that was distributed on the 26th of November by the Department of the Interior and I will read down the list or at least a representative number of

activities. Defense Department, 22.4 percent; Atomic Energy, 5.8; GSA, 7; NASA, 17; Transportation, 20.8; Veterans' Administration, 10.7; Agriculture Department, 16.7; Interior Department, 6.6. Shall I continue, sir?

Senator CANNON. Well, why do you not just supply that for the record?

Admiral SONENSHEIN. I will provide it for the record.

[The information follows:]

SUMMARY—ENERGY CONSERVATION PERFORMANCE, 1ST QUARTER, FISCAL YEAR 1974

Federal agency	Consumption (Btu × 10^9)	Percentage of total consumed	Quarterly adjusted base [1] (Btu × 10^9)	Percent conserved
Defense Department	371,125	85.8	478,153	22.4
Atomic Energy [2]	21,397	4.9	22,704	5.8
GSA	15,667	3.6	16,885	7.0
NASA	7,269	1.7	8,754	17.0
Transportation Department	4,294	1.0	5,442	20.8
Veterans' Administration	3,810	.9	4,267	10.7
Agriculture Department	2,647	.6	3,179	16.7
Interior Department	2,307	.5	2,469	6.6
HEW	1,633	.4	1,805	9.6)
Justice Department	942	.2	781	(+20.6
Commerce Department	903	.2	966	6.5
Treasury Department	638	.1	675	5.5
EPA	12	.1	13	8.0
State Department	(3)		(3)	1.9
HUD	(4)		(4)	(4)
Labor Department	(4)		(4)	(4)
Total Defense Department	371,125	85.8	478,153	22.4
All others	61,507	14.2	67,878	9.4
Grand total	432,632		546,031	20.8

[1] As given by agency. Rationale for adjustment from fiscal year 1973 is under review.
[2] Does not include Atomic Energy Commission's uranium enrichment program.
[3] Less than 1.
[4] Reports not received.

Senator NUNN. Mr. Chairman, on that point, would you yield for just one question?

Senator CANNON. Certainly.

Senator NUNN. I heard those other figures, what is the Defense Department cutback?

Admiral SONENSHEIN. 22.4.

Senator NUNN. 22.4.?

Admiral SONENSHEIN. Yes, sir.

Senator NUNN. You made the statement, I thought you said, part of it was attributable to winding down of the war in 1973.

Admiral SONENSHEIN. No, sir; we had extracted that drawdown from the reference base so as not to overstate it.

Senator NUNN. So 22 is the reduction notwithstanding the Vietnam war?

Admiral SONENSHEIN. That is correct, sir.

Senator NUNN. Thank you.

Senator CANNON. Are you cutting back uniformly throughout the world or are you selective as to which command should have a higher or lower amount of fuel?

Mr. MENDOLIA. We have been selective, Mr. Chairman. We are maintaining our military readiness in the Mediterranean and the West

Pacific and it is in the East Pacific there has been significantly more curtailment in the Navy's activities.

Senator CANNON. According to papers you have a drawdown in your positioned war reserve stocks. What can you tell us about that in open session?

Mr. MENDOLIA. We can only say that we have gone into our war reserves slightly and we do not expect to dip into them much further as a result of having invoked the Defense Production Act. We do not think we have seriously impaired our ability to respond.

Senator CANNON. Do you have a good and timely reporting system so as to give you the fuel management information you need to stay on top of the problem?

Mr. MENDOLIA. We have a considerably better one than we had earlier this year and we are working very vigorously to refine it so we may have an excellent fuel reporting management system. We expect to have that fully put together shortly.

Senator CANNON. Would you keep this committee posted on your future requirements?

Mr. MENDOLIA. Yes; we will.

Senator CANNON. Getting back to this possibility of a standdown, would not this prospect be better than sort of limping along with less than enough fuel to do the job?

Mr. MENDOLIA. I think there is a very strong feeling among the military commanders that frequency of action is exceedingly important to maintain training capability. So, while there is a currently severe cut, for instance, in training flights and ship days, the strong feeling is that we have got to maintain relatively frequent training missions so that the capability of our people is not impaired.

Senator CANNON. What have you done to encourage employees and military personnel to use public transportation, car pools, and other means of saving transportation fuels?

Mr. MENDOLIA. Well, the Department of Defense has a defensewide conservation program, and one of the key elements of this program is to impress DOD employees' with the importance of conserving energy. We have encouraged our employees to use car pools, and we have identified a number of specific programs to reduce the consumption of fuel. We intend to pursue that program with our employees.

Senator CANNON. If the Arabs should lift the oil embargo would you still need the Defense Production Act?

Mr. MENDOLIA. Yes, sir. The Department of Defense invoked the Defense Production Act or moved toward invoking the Defense Production Act before the Arab embargo took place because literally beginning early this year we were unable to get our defense requirements in the open market.

Senator CANNON. Are your transportation people exploring greater use of railroads for freight since railroad transportation has a lower fuel usage per ton/mile?

Mr. MENDOLIA. Yes; they are, Mr. Chairman. They are reviewing many possible actions to reduce the consumption of fuel in support of DOD's transportation requirements, and we are considering revision of our present policies concerning the selections of means, including railroads, of transporting DOD traffic. We will put out directives

which will in essence optimize the consumption of energy and minimize the consumption of fuel.

Senator CANNON. Senator Scott.

Senator SCOTT. Thank you, Mr. Chairman.

Mr. Secretary, I have been advised that some of your defense facilities depend in part or in total on commercial power for the day-to-day operations. Has the energy shortage affected your source of supply from commercial establishments?

Mr. MENDOLIA. Yes; it has. There have been a number of installations——

Senator SCOTT. In what way?

Mr. MENDOLIA [continuing]. For instance, that have been dependent on propane. A number of camps and bases that have relied primarily on local distribution have had their fuel supplies cut back, and one of the recommendations of the Defense Energy Task Group was that we re-examine the desirability of having central tankage or distribution points for heating fuel for DOD.

Senator SCOTT. I am sorry, I did not get that last sentence. One of the what was it?

Mr. MENDOLIA. We plan, we recommend taking a look at the desirability of having distribution or tankage centers around the United States for the distribution of fuel oil so that we would, need not be as dependent as we are now on local distribution.

Senator SCOTT. How about other sources of energy? Is there any shortage at all in electricity or many other sources of energy?

Mr. MENDOLIA. To my knowledge, we have not seen any significant shortages.

Senator SCOTT. My wife was reading to me last night from a news magazine about the amount of gas the President's plane uses. As I recall, she said 2,000 gallons an hour. Is that realistic for large aircraft?

Mr. MENDOLIA. I believe that is, although I am not an expert.

Senator SCOTT. Carrying that to military planes, is the military attempting to use smaller planes that consume less fuel when it can? Is there any organized effort rather than to use your largest planes, to use your medium or smaller planes when possible to do so?

Mr. MENDOLIA. The users of planes are looking at every means of minimizing the consumption of fuel, particularly the airplane.

Senator SCOTT. How about using smaller planes? Is there any consideration being given and are you using smaller planes where feasible?

Mr. MENDOLIA. Yes, there is, and where, for instance, prop planes can be used instead of jet engine planes, that is being done.

Senator SCOTT. Prop planes, that uses less fuel, does it, than the jets?

Mr. MENDOLIA. Basically, it uses a different fuel and in some cases its specific fuel consumption is lower because the speed is lower.

Senator SCOTT. Certainly, the smaller the plane—on average, the smaller the plane the less fuel?

Mr. MENDOLIA. That is right.

Senator SCOTT. On this Elk Hills Reserve, part of this will be utilized, I assume, by the private sector. Will there be some money passing from the Government received for fuel that is used by the private sector and, if so, how will that be spent or what will you do with any of the receipts you get for oil coming from this reserve?

Mr. MENDOLIA. As proposed in the joint resolution, the plan would be to have the receipts that are expected from the sale of fuel from the Elk Hills Reserve go into a Treasury Department account to be administered by the Secretary of the Navy under such regulation as the Secretary of Defense may prescribe. Those funds would be used both to continue the development at Elk Hills No. 1 and to explore and determine the extent of the reserves in naval petroleum reserve No. 4, in Alaska.

Senator SCOTT. That would be under the control of the Defense Department then?

Mr. MENDOLIA. Under the Department of the Navy, that is right.

Senator SCOTT. What would be wrong with putting the money into the general fund of the Government or the Treasury?

Mr. MENDOLIA. Simply because—I see nothing wrong with it. In principle, I think it would simply make it, there would be a longer process to take the money that is received from the sale of oil to the expenditure and that would be——

Senator SCOTT. The thought that just came to my mind, and it may be a fallacious thought, but I would like for the Congress to control the purse strings of the Government, and this would be a way where one of our executive departments would have some control over the expenditure of funds. Would this be a reasonable assumption?

Mr. MENDOLIA. Yes, it would.

Senator SCOTT. Mr. Secretary, in one of our news magazines there was some comment about Rota, the base in the Mediterranean, cutting off our supply of oil or the Spanish Government doing this, and there was some talk over in the Philippines about our oil being cut off; are these accurate statements generally?

Mr. MENDOLIA. Yes, they are accurate statements.

Senator SCOTT. Is the military doing something to see that there will be adequate oil at these particular bases and other bases around the world?

Mr. MENDOLIA. Yes, we are. Basically, one of the reasons for invoking the Defense Production Act and particularly the need in the recent months was to be able to move fuel from the domestic economy to our overseas bases so it does not adversely impact on readiness.

Senator SCOTT. Our chairman said something about our supplying, and I believe you responded in the affirmative, about our continuing to supply oil to Vietnam and Cambodia. Now, are we supplying other nations?

Mr. MENDOLIA. Not to my knowledge.

Senator SCOTT. How about our NATO allies?

Mr. MENDOLIA. No, not to my knowledge. As a matter of fact, we are attempting to get oil from some of them.

Senator SCOTT. Other regional groups?

Mr. MENDOLIA. I am not aware of any.

Senator SCOTT. It is only to Cambodia and Vietnam that we are supplying other nations with oil?

Mr. MENDOLIA. That is right.

Senator SCOTT. Thank you, sir.

On this question of other sources of energy, the chairman asked about solar energy. Is the military taking steps to develop other sources than solar, atomic energy, for example, or what are you doing on that?

Mr. MENDOLIA. Yes, sir, we made quite a list of areas in R. & D. where we thought it would be of interest for DOD to either participate in or monitor the activities of others and we are interested and looking at opportunities to use nuclear energy where possible, although our judgment is that it will continue to represent a rather small portion of the total.

Senator SCOTT. This concerns me, Mr. Chairman. As I understand at the present time, only about 1 percent of our total energy comes from nuclear, and after we had the use of the atomic bomb it was talked about harnessing the atom for domestic use, and here this was over 25 years ago and we are still only using 1 percent. Is there a way that we can step this up so we can harness the atom and make greater use? Could you comment generally or maybe some of the other gentlemen?

Mr. MENDOLIA. Would you like to comment?

Mr. BOWERS. I believe that the great deterrent was the environmental aspect, the safety aspect, and so on, and there were a great number of new avenues needed to be followed in research to develop the most economical ways of applying it. We are at a very low level right now but at the current time I know that they are trying to expedite the clearances for the new powerplants coming up.

Senator SCOTT. Is that before the Federal Power Commission, is this what you are saying?

Mr. BOWERS. Yes; and the Atomic Energy Commission.

Senator SCOTT. I am told there are about 30 applications that are being held up by environmental groups at the Federal Power Commission. Is this accurate?

Mr. BOWERS. I am not acquainted with that.

Senator SCOTT. Was this 1-percent figure I used, is it your understanding that is a fairly accurate figure?

Admiral SONENSHEIN. Between one and two.

Mr. BOWERS. It is between one and two but we are approaching a period in the 1980 to 1985 period where it will be going up exponentially, and that is the period of great acceleration.

Senator SCOTT. How do you see atomic energy as a potential source of meeting our needs? I am not saying in full nor would it jump from one to a hundred percent, but do you see it as increasing some?

Mr. MENDOLIA. Yes. I might point out one of the findings of a Defense Energy Task Group that went something like this that about 1980 our consumption of energy in our buildings and residences will be about equal to fuel consumption, equivalent fuel consumption, for mobile vehicles, aircraft and others. What that says is there is great opportunity for us to use nuclear energy for the electrical power which is mainly what is consumed in, say, supplying heating, air conditioning and other energy sources for a building.

Senator SCOTT. I am sure all of us would agree that we would want to protect our environment, this is where we live, but would it be fair to say that perhaps we ought to have a rule of reason about this, that we may have been a little overzealous or would you hesitate to make this statement, overzealous in looking at the environment?

Mr. MENDOLIA. No; I would subscribe to that.

Senator SCOTT. You would subscribe to that?

Mr. MENDOLIA. Yes; I would.

Senator SCOTT. Thank you, sir.

Going back to other sources of energy we mentioned, solar and atomic energy, is the military looking to still other sources?

Mr. MENDOLIA. Yes.

Senator SCOTT. I believe the chairman said something about converting to coal. Just how far have we gone in that?

Mr. MENDOLIA. We see rather limited opportunities to convert to coal per se, and I think I mentioned a number that if we fully converted our oil burning facilities, power generation facilities, to coal we could save about the equivalent of 18 million barrels a year. We think the greater opportunities are to encourage the processes that are currently being developed to convert coal to either gas or liquid products which we can use in——

Senator SCOTT. That is using coal indirectly.

Mr. MENDOLIA. Yes; very much.

Senator SCOTT. As I understand it, we have an unlimited supply of coal, at least far beyond our lifetimes.

Mr. MENDOLIA. That is right.

Senator SCOTT. Are you making gasoline out of coal, is this what you are saying?

Mr. MENDOLIA. We have been following a pilot plant that has been operated in Princeton, N.J., for several years and, as I mentioned earlier, we have used the product from that pilot plant which is a process for converting coal to liquid products and it has been successfully tried on the U.S.S. *Johnson*.

Senator SCOTT. Has not South Africa done this?

Mr. MENDOLIA. Literally the processes for converting coal to liquid products have been used for many, many years. As a matter of fact, Germany used it during World War II, so that the technology is known. It is now a matter of determining what is the economic value of petroleum products and, therefore, will that attract enough investment to convert coal to oil? From my knowledge of it, with oil in the neighborhood of $6 a barrel, there is considerable incentive to invest money to convert coal to liquid products.

Senator SCOTT. What other sources are you looking to, are you working in?

Mr. MENDOLIA. We are looking at some of the—for instance, the Air Force has recently entered into a joint venture to generate electrical energy directly from oil by the use of a facility that the Air Force now has which is called a magnetohydrodynamic process and that holds the promise of basically taking fossil fuel energy and converting it by a simpler process of generating it into steam directly.

Senator SCOTT. Now, Congress has had before it on a number of occasions and has ultimately rejected the concept up in Maine of using the tides to generate energy. Is there any consideration being given to this, the tides being something that would be almost unlimited if it could be harnessed to create energy? Is this being looked into any more?

Mr. MENDOLIA. To my knowledge, that has not been very active in recent years. To my knowledge, nuclear energy is more likely to be an economic source of power than, say, the use of tides, say, in the Bay of Fundy.

Senator SCOTT. Would it be fair to say we should not look to any one source, that we should investigate all of them?

Mr. MENDOLIA. Yes.

Senator SCOTT. Thank you, Mr. Chairman.

Senator CANNON. Senator Nunn.

Senator NUNN. A few quick questions, Mr. Chairman. On the notice that is going to take place here, Mr. Secretary, I understand you are getting now 300,000 barrels equivalent, I suppose, of refined products through the Defense Emergency Act; is that right?

Mr. MENDOLIA. Defense Production Act.

Senator NUNN. Defense Production Act.

You are going to increase the output at Elk Hills, let us say, by a hundred thousand barrels per day. That is going out under competitive bid on the basis of this bill. Are you in effect getting 300,000 barrels a day of refined products from X., Y, Z companies and selling a hundred thousand barrels per day to other companies of crude oil; is that right?

Mr. MENDOLIA. That is right.

Senator NUNN. Is there going to be a disparity created there in terms of your using the act to draw from certain companies which reduces, of course, what they can allocate otherwise to their customers and yet there is no correlation between your selling of crude oil on a competitive bid? In other words, there is not going to be any, it seems to me, correlation between the two, or am I misreading that?

Mr. MENDOLIA. No; literally, for instance, this year we would not have invoked the Defense Production Act if in the normal course of procuring our fuel supplies we would have been able to get contracts from the refineries.

Not being able to do that we did invoke the Defense Production Act——

Senator NUNN. I understand that part of it.

Mr. MENDOLIA [continuing]. To supplement what we could get, so as we make estimates further into 1974, we will only invoke the Defense Production Act for those quantities which we cannot procure under the normal procurement process.

So, for instance, if we succeed in getting 160,00 barrels a day under the unit plan contract and the legislation which enables the Navy to operate the Elk Hills we, for instance, can exchange the crude oil for refined products. But we will take whatever options are most economical and practical to the Navy at that time. To the extent we get those products we will reduce the call on the civilian economy.

Senator NUNN. I agree with that. If in effect, you are going to take crude oil and exchange it for refined products there would be a direct offset and you would be doing it with companies?

Mr. MENDOLIA. Right.

Senator NUNN. But in a period of shortage you have certain companies if you are requiring them to give you refined products and you are not exchanging—let us say, you could get a higher competitive bid and come out better, I can see where the Government could come out better, take the money that you require from the sale but, by the same token, you are creating a disparity if you do not have a quid pro quo kind of swap because the company you may be drawing from under the Defense Production Act is thereby having to cut their distributors, their retailers, their end users all the way down the line, they may

serve my State, and the companies you are selling the crude oil to may serve the west coast. So this is not going to be, as I see it, unless we tighten up the language here significantly, any kind of correlation between the two at all.

Mr. MENDOLIA. What I am assuming will be operative by the time Elk Hills is in operation is that the Fuel Allocation Act will in fact be administratively operative and under the Fuel Allocation Act then there will be a mechanism in the Government to see that the allocation is evenhanded and there are not localized disparites on the allocation of fuel.

Senator NUNN. You would agree that this langauge here would really have no direct correlation at all. You are just getting money and putting it into the Federal Treasury over here, on the one hand, by a sale on a competitive basis and you are keeping the money in the Treasury under this act under a certain ledger account except what you need for expenses and so forth; on the other hand, you are still out there grabbing that 300,000 bareels per day equivalent in refined product as coming from somewhere else.

I agree as far as the whole United States is concerned, you are putting that crude oil back into the overall chain but it seems to me that there needs to be some real thought given here about how you eliminate apparent inequities that are going to be inevitable.

Mr. MENDOLIA. There is an overall U.S. shortage which I think we will continue to see. Even after the Arab oil embargo a feel allocation process is necessary to insure there are not localized inequities and we certainly subscribe to that process.

Senator NUNN. Maybe you could, I think, add something to the record here to explain how these things are going to come together, the new allocation program, and this also so inequities will not be created. I am not saying you can foresee everything but it just seems to me here there is a huge gap between what this provides and what obviously is going to have to be done to achieve any degree of fairness at all.

Mr. MENDOLIA. Mr. Bowers.

Mr. BOWERS. Senator Nunn, I would like to answer that. It is a complicated question and is going to be difficult, but first of all, we must ascertain that we have a fair competition in the sale of oil, and so we cannot necessarily preordain who will win the contracts. After we have done that——

Senator NUNN. Unless there is a swap.

Mr. BOWERS. What?

Senator NUNN. Unless there is a swap of crude oil for refined products.

Mr. BOWERS. I think that even in that case we want to make sure that we have—do not give a company that has the ability to supply it somewhere else, an unfair competitive advantage in buying it. So I think in general we will attempt to make it a completely fair auction.

After we know what companies are able to buy the oil, then we will work with the Defense Supply Agency which normally buys the oil for the armed services and the Department of the Interior which have their previous responsibility for designating what companies we get products from, and work out these inequities. That will be the ap-

proach that we use and which is done after we have the first step in the chain.

Senator NUNN. I am sure the companies can take care of themselves but it just seems to me that one who wins the bid on the crude oil would have some degree of obligation more than other companies to provide under the Defense Production Act. It seems there is some relationship.

Mr. BOWERS. If those companies have that ability to supply the products that we are talking about that would be immediately arranged so that it would be done on an exchange basis directly, yes, sir.

Senator NUNN. I am sure you are aware that certain companies are beginning to terminate many of their distributorships in certain areas, and this is a trend that has already started before this latest crisis so you could have in general equity so far as the whole United States is concerned, but severe inequity so far as certain sections are concerned by the way you handle this. I do not know how to answer that but it is something you have to consider, certainly.

A couple of other questions on your particular effort to conserve, Admiral. I have been corresponding with the Army at the request of a constituent who is very interested in recycling oil and they are doing a lot of recycling and a lot of the private enterprises, I understand, are using recycled oil. The Army has taken the position they cannot do it in the Army though they have the same kind of vehicles everybody else does. This is not for airplanes, but this is for automobiles and standard vehicles. Has the Navy looked into the recycled oil at all?

Admiral SONENSHEIN. Yes, sir. As a matter of fact, just within the past week we prepared papers and given thought to the carrying out such a plan in all the services. I am sure——

Senator NUNN. Carrying out what?

Admiral SONENSHEIN. Such a recycling approach, to look into and implement such if it is feasible. I am sure we will run into some difficulties wherein the specifications for the recycled oil or the performance characteristics for the recycled oil may not equal that required for new oil.

Senator NUNN. This is what I ran into with the Army. They say "We cannot handle it because we cannot have the specifications." They have the same thing like everybody in the industry has to get through specifications that can be changed.

Admiral SONENSHEIN. Yes, I understand that.

Senator NUNN. They assume that everybody in industry has changed specifications to use recycled oil. That is the point that leaves me dumfounded.

Senator SCOTT. Will the Senator yield?

Senator NUNN. I am sorry I interrupted you; then I will yield.

Admiral SONENSHEIN. I started to say we are starting such an approach. The degree to which we will be able to carry it out is not clear to me yet.

Senator NUNN. I will yield to you.

Senator SCOTT. Out in Fairfax County the suggestion has been made there might be a mixture of the waste oil from automobile engines with other fuel oil and it might be used for heating purposes. I am just thinking that with all the military vehicles, the planes and otherwise, that there would be a great amount of waste oil and, carrying further

Senator Nunn's questioning, is it feasible or do you know whether it is feasible to somehow mix this waste oil for fuel purposes?

Admiral SONENSHEIN. I have personal knowledge of this being feasible, yes, sir; and in fact, aboard ship, aboard our fossil-fueled ships that carry aircraft, aircraft carriers and helicopters, this is very common to take the waste oil that has been used in overhauling engines, for example, and to mix it with the boiler fuel for consumption propelling the ship or providing energy for the ship.

Senator SCOTT. Could that be——

Admiral SONENSHEIN. Similarly, that could be done ashore, I think.

Senator SCOTT. Is it being done ashore?

Admiral SONENSHEIN. I cannot answer that, sir, but I think it could be.

Senator SCOTT. Could you investigate and perhaps the other gentlemen at the desk, and I thank the Senator for yielding.

Senator NUNN. Admiral, I am concerned that every effort be made in this regard. A little while ago I hope I understood your answer in the proper context when you said you did not think you could make further cuts, that you cut as far as you could. But there are all sorts of new research methods and new things just like this, and it seems to me there is a very fertile field for you to make very substantial further effort in this regard without in any way jeopardizing national security, so I hope I misunderstood.

Admiral SONENSHEIN. No, I did not mean to imply that no further efforts are going to be made, the point that was in my mind when I was replying was that a very substantial part of our reductions have come about from reducing flying hours, from reduced ship days and the like which impact very directly on operational training.

Senator NUNN. What you are saying is, you do not think you can have any more cuts that would impact on training but do you still leave upon the possibility of investigating much further fuel savings that would not impact on training?

Admiral SONENSHEIN. Yes, sir; I agree with that. In fact, our R. & D. efforts which we have been talking about generally have that as one of their major objectives.

Senator NUNN. Well, we are going to need some short-term things, whether this will work, or there are at least a hundred different ways I would suspect that you can look into on a short-term, 6 months to a year-term basis and I think somebody will have to cut through some redtape, Mr. Secretary, to do this. I have been corresponding for months on the situation here and I am not blaming anyone but if we do not have someone with authority saying "OK, you do change specifications, do it on a short-term basis," you are not going to get anywhere, because the fuel crisis will be through before I get an answer to this particular correspondence which has been going on for 4 months.

Another question along that line, how about retreads on tires? I am sure DOD uses a tremendous number of tires. We have had testimony in the past week for every retread tire used as opposed to a new tire, you save 5 gallons of petroleum because of the process required in making that. Are you looking into the retreading situation?

Admiral SONENSHEIN. The Air Force and the services have for several years had a program for retreading tires for aircraft and for vehicles and I would like to ask that that question be responded to in

detail by the service representatives when they come up here. I am aware in general of their efforts I cannot give you specifics.

Senator NUNN. I am sure they do some but if we are going to have to increase it on a flat basis I think, and I just wondered, if DOD can accelerate the amount. Could you supply that for the record?

Admiral SONENSHEIN. Yes, sir.

[The information follows:]

The DOD programs related to using recycled oil and retreading tires is being reviewed. In order to be responsive to the committee, additional data is being obtained and a complete analysis will be submitted to the committee within two weeks.

Senator NUNN. Mr. Chairman, I know we are running out of time and I will defer at this point.

Senator CANNON. Thank you.

Senator Gravel, if you will come up, please.

Secretary Bowers, we will let Senator Gravel go next.

STATEMENT OF HON. MIKE GRAVEL, U.S. SENATOR FROM ALASKA

Senator GRAVEL. Very good, Mr. Chairman, I will try to be as brief as possible.

Thank you for the opportunity of testifying here today. The matter with respect to the oil reserve is of critical importance to the country and, of course, to the entire military establishment. Our current energy crisis will not be of short duration. We are facing a problem in the energy area comparable to the problem we faced for survival in the Second World War. The short-run crisis will approximate 5 years, the intermediate crisis an additional 10–15 years, and, of course, the real energy crisis for all mankind from the year 2000 forward. Realizing the dimensions of the problem is very important to policy considerations today. Long lead times are required to explore, exploit, transport and refine known energy sources today. This statement is valid whether meeting the short-run or long-run crisis.

Our experience with the Alaska pipeline is a case in point. The shortfalls experienced this winter will approximate 2 million barrels of oil a day. The capacity of the Alaska pipeline when fully completed, will be 2 million barrels a day. Even with the decision to go ahead, it will be between 1977 and 1980 before the Alaska pipeline will reach its full capacity, which, of course, will be at the tail end of the short-run crisis that I defined earlier.

Your committee is now considering the future of all naval petroleum reserves. I am sure that in your deliberations, you will give consideration to not only the short- and long-term needs of the Navy but, more importantly, the short- and long-term needs of the nation.

For I am sure we are all prepared to admit that our national strength lies first within the resolve and morale of our people, secondly, in the strength of our economic system and, thirdly, in our military preparedness: all three of which will permit us to enjoy the freedom and economic well-being we all cherish.

From a policy point of view, it will serve little purpose to subvert our economic system in order to retain what in fact would be the sham of military preparedness from an energy point of view. I liken this to the knights and the serfs where the knights eat and the

serfs produce the food and, of course, the knights because of their military might are, of course, the ones who get the last morsel of food and the serfs have long starved to death.

For many years our domestic production of energy, particularly oil, has not kept pace with the rapid increase in consumption. This has forced an ever-increasing dependence upon foreign and sometimes insecure oil supplies. This situation will continue to exist until we can satisfy 95 percent of our energy needs domestically. The possibility of this is a readily realizable goal.

Mr. Chairman, I will not go into it but the Center for Startegic Studies here in town has produced, Jack Bridges has produced a booklet that was originally sponsored by the Joint Atomic Energy Committee and it has the curves, the supply curves, and how these curves will be supplied up until the year 2000 and 2050, and I would like to include it in the record. This is the only copy I have, I will keep it, but we can make arrangements to get a true understanding of the energy crisis and where the solutions lie.

Particularly with respect to oil, which is more sensitive than alternate sources of energy to the immediacy of supply, numerous policies can be undertaken that will help alleviate the short-run crisis without diminishing our long-run abilities to supply our potential energy needs for the Nation and the military. Our military establishment has been supplied by both domestic and foreign oil purchases from civilian sources. Because of the Middle Eastern crisis, these purchases are totally made from civilian domestic sources today. This is a proper priority at the present rate of shortfall. However, were the shortfalls to increase, obviously we would have to trim some priorities within the military itself since other civilian priorities would undoubtedly be deemed more important to a total integrated defense posture.

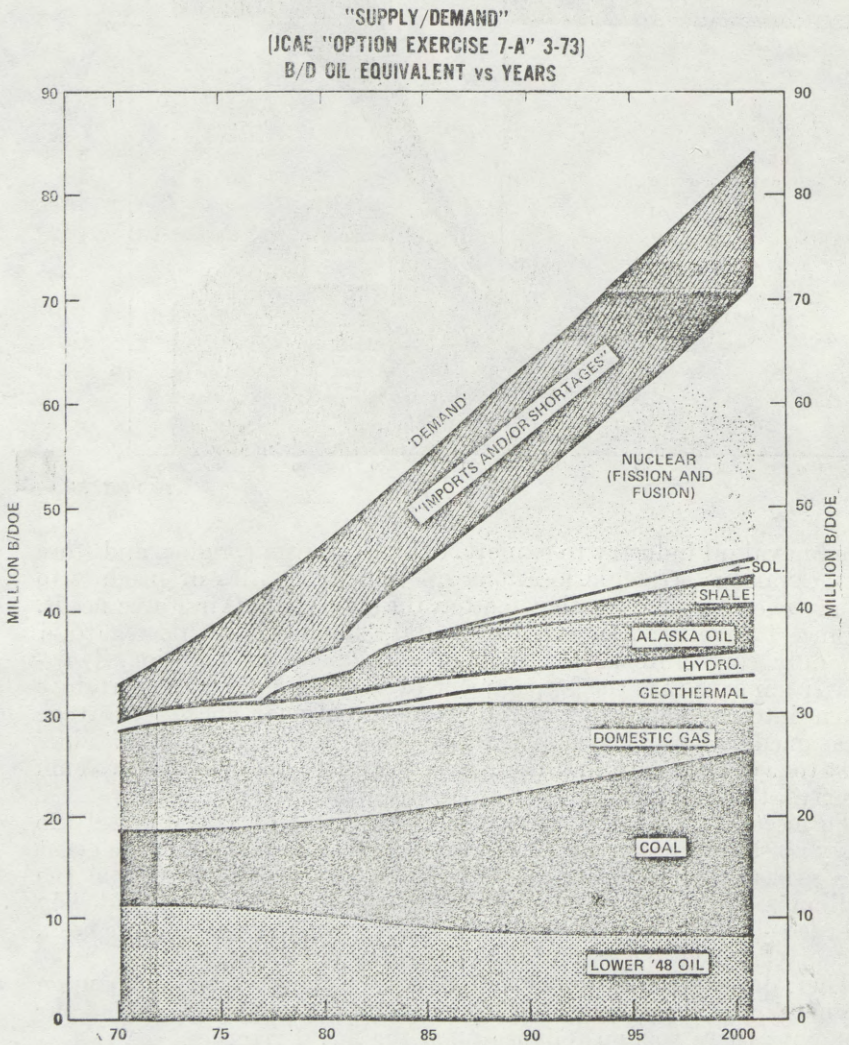
What we are doing today, I think, is entirely proper, but this is not what has been projected on the planning boards of defense strategists. I here say defense strategists because not only the Navy but the Defense Department and the Congress itself has been party to this type of strategy. I think those past plans have proved themselves ineffective and I would hope that certain present events would dictate a new policy. In point of fact our past policy has contributed to the national dilemma we face in energy today, not entirely but to some degree.

The petroleum reserves were established in the early 1900's when the Navy decided to shift from coal to oil-fired ships. The first two reserves were established in 1912 at the time of the Navy's initial conversion. The feeling at the time was to set reserves aside so that the rash of public land sales and leases in search of oil did not prevent the Navy from getting the supplies at a future time.

Resting on the historical experience prior to the sophisticated technologies related to energy, the provisioning for future supplies was a sound decision. Certainly, at the time no one knew how much oil there was and how much would really be needed.

However, Mr. Chairman, that is not the case today. The technology of oil and the capital investment required are so inter-related with our total lifestyle that it makes little sense to differentiate or segregate the Nation's total productive capacity.

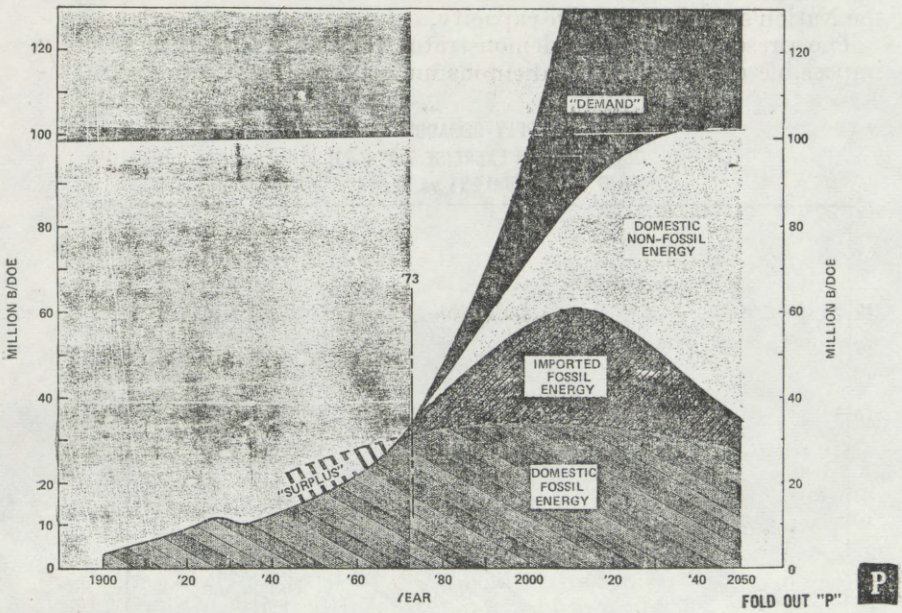
The present experience demonstrates very ably that it is actually impossible or would be a ridiculous undertaking to set up a sophisti-



FOLD OUT "0"

0

"SUPPLY/DEMAND"
(1900 - 2050)
B/D OIL EQUIVALENT vs YEARS



cated naval oil industry to explore, exploit, transmit, refine, and store in the various strategic locations sufficient quantities of product to satisfy the Navy or, for that matter, the Army and Air Force needs.

Since I have not been part of military planning in this regard, I can only conjecture as to the plan and its implementation. However, I am sure that the Department of Defense must have certainly taken into account the possibility of a national energy shortage occasioned by a problem similar to the one we are facing in the Middle East today. I am sure that the Navy, as custodians of our petroleum reserves, they must have been especially aware of this danger.

To meet this potential crisis, the Department of Defense and the Navy must have been faced with two possible alternatives in the event of a crisis; that is to appropriate oil on a priority basis from the civilian sector or to develop its reserves which it has so jealously guarded since the beginning of this century, which reserves have been, of course, denied to our total national energy inventory.

Their decision, admitted or not, is obvious. They chose to rely upon the national energy inventory provided by the private sector of our economy; there was no reliance upon the naval reserves.

The Navy's plan or de facto decision suggests that it did not or could not muster from Congress the necessary appropriations to bring its oil to a point of immediate use.

If the Navy had administered the reserves under concepts that rationalize their custodianship, then they would have had to have these reserves fully developed and available at the time and event of an emergency.

Several thoughts come to mind questioning the efficacy of that plan itself.

First of all, there is no consideration given to the gas attendant to these oil discoveries or the large quantities that exist independently within the reserves. The Navy does not use gas to run its vessels, but certainly the lack of gas in certain areas of the United States contributes to the shortfall in oil. I would submit it is not only gross inefficiency but criminal waste in view of our national needs and what they will be for the next 10 or 15 years.

Secondly, with regard to petroleum reserves in Alaska, it makes little sense under any military criteria to hold the oil in Alaska in a position of preparedness which would take hundreds of billions of dollars and would still suffer the strategic deficiency of supply being noncontiguous and reachable only by sea or through a foreign country.

Probably the best example of the present policy's failure is in Petroleum Reserve No. 1, Elk Hills. Here is a case where the reserve is strategically located and available for storage for immediate use to satisfy the emergency needs of our Pacific Fleet. The mishmash plan that now requires the Pacific Fleet to commandeer civilian stocks is the result of the Navy's inability to handle what would be an easy development in the private sector. I will not go into the history of intricacies of the Elk Hills problem since it really does not make any difference. In an emergency all we judge is whether or not the oil is there. The situation is this today, we do not have the oil.

The Office of Naval Petroleum and Oil Shale Reserves estimates the maximum efficiency production rate at Elk Hills to be 267,000 barrels a day; however, it can only produce 100,000 barrels a day after 60 days. In addition, the pipeline capacity within the reserve is only 90,000 barrels a day. Pipeline capacity outside of the reserve, getting to other locales, probably strategic locales, where they fuel their vessels is 12,000 capacity. In other words, what you do is have a capacity and you start funneling down the pipe until you get a small pipe so really, your capacity is not what you have but is what you can get through the small pipe.

With respect to Petroleum Reserve No. 2, Buena Vista Hills, I think even the Navy is prepared to admit that it is a reserve in name only. Why they wish to retain title in view of this fact is beyond me.

Reserve No. 3, Teapot Dome, similarly does not have sufficient oil to offer any significant reserve relating to a national defense posture.

The oil shale reserves are not only not available to satisfy immediate needs but would come into the middle range timeframe of the solution of our energy crisis.

The whole concept of reserves held by the Military Establishment is outdated by advancing technology. The Navy lobbies for a nuclear fleet at the same time that the Geological Survey states that Petroleum Reserve No. 4, the only one I am talking about here, Petroleum Reserve No. 4, could contain up to 10 to 33 billion barrels of oil.

Our Armed Forces consumed 324 million barrels of oil in fiscal year 1973. We, therefore, with a Navy that is training to move into the nuclear age, we are, therefore, holding reserve military capacity for 30 to 100 years under present consumption rates. Believe me, this makes little sense when related to our national and world energy picture. By the year 2000, the world will be in conflagration over the energy crisis

unless we can make a breakthrough between 1990 and 2030, and having a hundred years of supply for our Navy is absolutely ridiculous in the face of those prospects and, gentlemen, I commend to you this booklet which demonstrates that very point.

I think this past reserve policy had one virtue and that is that it held in reserve oil owned by all the American people for a rainy day. Mr. Chairman, it is raining today and it is going to rain for the next decade.

The soundest policy would be to turn these reserves over to the Secretary of the Interior who would then permit their exploitation by the private sector as is being done on other public lands. There is no difference here. This would then increase the total national inventory of oil available to the total economy, and if the military needs it they would commandeer it as they are presently commandeering it to satisfy their needs for a defense posture.

While subsurface rights are our major concern at this time, transferring the land to the Interior Department would also allow for the proper management of surface areas. Proper planning for utilization and protection of the area's wildlife and vegetation and other resources is also important. Mr. Chairman, may I conclude by stating that (1) it would make more sense to let the oil industry produce oil and let the Navy sail the seas; (2) reserve planning and development are related to the Interior Department which has sufficient law and experience to do the job; (3) to underscore the efficacy of existing law which permits the military priority position in our total energy inventory in times of emergency; and (4) that in regard to these reserves, the country and the Congress go on record for their immediate exploitation commensurate with environmental constraints.

I see no justification for the continuation of a policy that has outlived its usefulness.

Thank you, Mr. Chairman.

Senator CANNON. Thank you, Senator Gravel, for an interesting statement. May I say I take issue with a number of the statements you made therein? You seem to lay it on the Navy's neck for not having done the things that should have been done in this area to develop these reserves. The Navy has been trying to for a period of time; it is the Congress which has not been willing to go along.

Senator GRAVEL. I said that, Mr. Chairman.

Senator CANNON. Congress has been the one that has refused to appropriate the funds and permit a go-ahead. As a matter of fact, earlier in our discussion here today, one of the witnesses pointed out that they submitted a plan in April of last year and they still have not had any approval. That plan is still, I guess, over in the Bureau of the Budget, is that correct, is that where it lies?

Mr. MENDOLIA. The Department of the Interior.

Senator CANNON. The Department of the Interior now.

You also suggest that the administration of these reserves be turned over to the Department of the Interior, that they could do it better? I have some faint recollection reading of the Department of the Interior's management under the Teapot Dome scandal in the twenties. I think it was the Department of the Interior that had jurisdiction over the land at that time and Congress thereafter made the determination that it should be taken away from the Department of the Interior,

and given over to the Navy to manage. I do not know that the Navy had any particular desire to manage it. I am not familiar with that. But I am familiar with the fact that the Congress made that determination and that is where the criticism lies, if any, now as to who ought to have the management.

Finally, you suggest that the Armed Forces consumed 324 million barrels of oil in fiscal 1973. I think the figure for 1973 was 650,000 barrels, is that correct?

Admiral SONENSHEIN. That barrels per day, it is per year—per day that is mixed up.

Senator CANNON. Is that the present today?

Admiral SONENSHEIN. 650,000 barrels per day.

Senator GRAVEL. I was quoting million per year.

Senator CANNON. I see, I am sorry.

Senator GRAVEL. May I address myself, Mr. Chairman, to the point that you raised?

Senator CANNON. Yes, certainly.

Senator GRAVEL. First off, on the first one I stated in there that it was the defense planners and I included Congress and the Executive and the military so I certainly do not make the Congress blameless in this because we and the Executive are the final policy determinants.

The second point, though, but I do think that the Navy does lobby from a proprietary interest when they have something. I think it is human nature once somebody has a reserve they want to keep it, and I think the testimony you will hear from the Navy and you will continue to hear from the Navy since they have jobs at stake, and their own careers at stake, they will sit here and tell you they can do a better job. I personally think that there is no area of Government that can do a better job. I think the private sector can do a better job.

Going back to the scandals of Teapot Dome, there is no question it was the Interior, it was Mr. Fall and others through dishonesty, that brought disrepute upon the Interior Department. That was the Secretary of the Interior. Should we have transferred all of the duties of the Interior Department to all other areas of the Government? Under that criteria we should have given wildlife management and Park Service to the Navy because the dishonesty and corruption in oil is no less than dishonesty and corruption if somebody is going to take in some money with some concessionaires, and I would submit that the Navy, and I mean no disrespect to the Navy, because I admire them, but I do not think they have a corner on honesty in the market and I think we can find dishonesty anywheres and, for that matter, let us take the Vice Presidency away from the Executive now with our recent experience.

So I think we had a bad apple, we had a bad situation, but that does not mean that the first task of Interior is not resource, and this is a resource we are talking about.

Senator CANNON. I would just simply say you are before the wrong committee to advance that position. You need to advance that to the Congress itself because we certainly do not have the jurisdiction, I believe, in this committee to make that judgment as to whether we ought to reverse the policy that Congress enumerated when they said that the Navy would be the custodian on this, and you mentioned that the Navy should have had these reserves fully developed and

available at all times in the event of an emergency. I think it is about 15 years that the Navy now has had programs of trying to go forward trying to develop these reserves and the Congress has simply not gone along with it. I may be incorrect on that. Can somebody tell me? Secretary Bowers, do you recall offhand the period of time?

Mr. BOWERS. I will ask Captain Trunz.

Captain TRUNZ. I would say that is correct, Senator. Over at least 10 to 15 years the Navy has had plans to explore and develop and has requested money to do this. At various levels within DOD and at the congressional level it has been cut out.

Senator GRAVEL. Mr. Chairman, how much money have they asked for? How much have they asked for?

Senator CANNON. You would have to supply that for the record unless the captain knows off hand.

Senator GRAVEL. I think it is a meaningful statement because if we want to talk about a meaningful plan to develop some oil here they could put out a figure right now and I can dispute it very easily because we know what it costs to drill in Alaska to develop the fields and we are talking about hundreds of billions of dollars that no wonder the Congress did not come up with any money. Just the thought of it would scare them. We are talking something on the order of what an ABM would cost to do this, and we have the total private economy that has this capacity, has been doing it for the Nation, and now when we get in a crisis where does the Navy go to get its oil, where does the Air Force go to get its oil or the Army? They go right to the civilian sector so why should we set up something in the military, a separate industry all by itself, and I think the crux of its plan, if you want to say that is going to be the rationale, ask how much money they asked last year to implement the plan.

Senator SCOTT. Mr. Chairman, aren't we getting far afield?

Senator CANNON. We are getting quite far afield. Captain, if you can respond, if there was a question there, if you can respond to it.

Captain TRUNZ. Let us relate our plan to the good Senator's area. Let us talk about Alaska a bit. Our plan for Alaska for just exploratory work as you deal with 23 million acres you are dealing with the size of the State of Indiana or Louisiana, but the plan called for $200 million over a period of, between $150 and $200 million of exploration over a period of, 10 years.

Mr. BOWERS. And then the development.

Captain TRUNZ. Development.

Senator GRAVEL. $200 million.

Captain TRUNZ. The development is not—you have to have a crystal ball; our estimate for a pipeline would be between $3 and $4 billion eventually. Initially our plan for development was $2 billion with a pipeline of about $2 to $3 billion but this was 12 to 18 months ago and, of course, as you know, Senator, prices continue to rise as the Alyeska has shown, and if you look now maybe we are talking between $5 and $6 billion for complete development program.

Senator CANNON. Senator Scott.

Senator SCOTT. Mr. Chairman, I would only ask our colleague a couple of questions. This book you are talking about, Mike, who put this book out that you held up, what organization?

Senator GRAVEL. This is done by Jack Bridges, essentially.

Senator SCOTT. Who is Jack Bridges?

Senator GRAVEL. Jack Bridges, in fact, he is a consultant now for the Atomic Energy Committee, the Joint Committee.

Senator SCOTT. This is an individual's book, not an organization?

Senator GRAVEL. This is the Government's book, you and I paid for this.

Senator SCOTT. That is what I am asking.

Senator GRAVEL. Tax dollars paid for it.

Senator SCOTT. Who published it, Atomic Energy Commission?

Senator GRAVEL. Right now, the Center for Strategic and International Studies, Georgetown University.

Senator SCOTT. It is a branch of Georgetown University?

Senator GRAVEL. Right. But I saw the same material last spring, and we had briefings before the Joint Atomic Energy Committee by Jack Bridges to Members of Congress. He briefed about 70 Senators on this same thing.

Senator SCOTT. I take it that your, the thrust of your argument is that you are opposed to reserves in Alaska?

Senator GRAVEL. In Alaska and in any place else in the Nation.

Senator SCOTT. Thank you, Senator.

Senator GRAVEL. Mr. Chairman, I would like to just take up one figure, though, and that was the captain was saying a total development cost of $5 billion and then an initial exploratory cost of $200 million over a decade. The oil companies in 3 years spent in Alaska just for Prudhoe Bay, $3 billion and before it is done with the pipeline you have got another $5 billion and then the balance of exploration that the statement of $5 billion is probably understated to an unbelievable degree, just by present experience.

Senator CANNON. Senator Nunn.

Senator NUNN. I just have a couple of questions. One is, I am familiar with Jack Bridges and his work on AEC. Is that a 30- to 100-year estimate on the top of page 6, is that from the Strategic Institute?

Senator GRAVEL. Yes.

Senator NUNN. The 30 to 100 troubles me. Are we that far from having any definite estimate of what we have 30 years to 100 hundred years, that is a huge gap.

Senator GRAVEL. Because that is, you see, we are talking about petroleum No. 4 and the reason why we do not, petroleum reserve No. 4 has not been drilled to know what we have.

Senator NUNN. Petroleum No. 4 is Alaska?

Senator GRAVEL. Right. I have not even talked about the reserves of Elk Hills, which is a sizable reserve, but not on the order of petroleum No. 4.

Senator NUNN. Let me ask one question of the Secretary here and then I have another one for you, Senator Gravel. What was our peak use of petroleum during, well, the Vietnam war for one, Korean war, World War II we are talking about 324 million barrels last year when engaged in a scaling down operation in Vietnam, what was the peak use we ever had in DOD, we ever had in one year?

Mr. MENDOLIA. The peak use in World War II was 1,600 million barrels a day peak use. In the peak of Vietnam we used 1,100 million barrels a day.

Senator NUNN. That would be something like——

Mr. MENDOLIA. So, for instance, a million, one, it would have been about 16 percent.

Senator NUNN. A million, one.

Mr. MENDOLIA. It would have been about 6 percent, it would have been about 6 percent of total U.S. consumption in 1968–69.

Senator NUNN. A million, one, would be approximately four times the 324 million barrels that we are basing this estimate on, and if you took the lower end of 30 years, and you really divided that by four, in other words, if we got into any kind of peak, if we were in any kind of conflict, which would be an assumption that would not be very realistic I admit, you would have to cut that 30 years down to about 7 years so I would think if we are using figures here it would be almost impossible to make a rational judgment, even if you assumed all the facts you made, Senator Gravel, because, in other words, you are assuming a very low figure, that is what I am saying.

Senator GRAVEL. I am providing some parameters of judgment, and for you to refine them any more than that, you will have to get an appropriation, under the hands of the military you are going to have to get an appropriation, of several billions of dollars and so if you are going to make any policy judgments within the short run, let us say, next 3 or 4 years that are meaningful to a national energy crisis, then we have got to be prepared to give these gentlemen several billions of dollars so they can tell you 3 years from now when you are in a worse energy position than you are in today, to be able to tell you what they have and how it is going to relate.

There is a way we can do that and begin doing that in the next three years and that is by letting the private sector do it.

Senator NUNN. I think you made some excellent points here. I think we have to look to the total economy and military together and we cannot separate the two completely. If our economy is in shambles we are not going to have a very strong military, we will not even have money to appropriate it. I think you made an excellent point but on page 6 from the point of view of Navy and Government and congressional policy that had, I have read a good bit of the old Elk Hills testimony 20, 30 years ago we have had an argument about raiding this for years and the argument was made just as strongly at that point in time almost as it is now, had we adhered to the argument it should be turned over to the private sector in 1950–51 we would not even be here talking about Elk Hills here now, we would be talking about something else. We would not have any reserves and you made that point in your statement, so I think that the past policy, while it may not have been all that we would have desired, has certainly enabled us to at least be sitting here today discussing a source of petroleum we would not have otherwise.

Senator GRAVEL. I pointed that out in my statement and I think the original historical thinking is what brought that about and I think what we have done is saved for a rainy day and it is now raining.

Senator NUNN. Right. I think the Congress preserving this Elk Hills has been a rather wise policy because I know there have been, and I know the chairman knows that there have been some torrid battles between private enterprise trying to get this reserve from the Navy and in turn the Armed Services Committee of both the House and Senate and fortunately for us today, the arguments were not won by those who wanted to raid the reserves. Otherwise we would not have them now.

Senator CANNON. Thank you.

Thank you very much, Senator.

Senator GRAVEL. I want to thank you very much, Mr. Chairman. I realized this was a little different testimony than is normal in this regard but I think this is important policy consideration that is going to be before us for some time.

Senator CANNON. Thank you.

Secretary Bowers.

Senator SCOTT. Mr. Chairman, I have a luncheon at 12:30 with the Virginia delegation and I wonder if I might propound one question before I leave.

Senator CANNON. Certainly.

Senator SCOTT. Mr. Chairman, might I ask the group at the table is it the combined opinion of both the civilian and the military leadership at the Pentagon, that this resolution should be adopted and could be adopted without jeopardizing our national defense. Is this the consensus of everybody at the table?

Mr. MENDOLIA. Yes; it is.

Mr. BOWERS. Yes.

Senator SCOTT. Thank you.

Senator CANNON. Mr. Secretary, you might proceed.

STATEMENT OF HON. JACK L. BOWERS, ASSISTANT SECRETARY OF THE NAVY FOR INSTALLATIONS AND LOGISTICS, ACCOMPANIED BY CAPT. JOSEPH P. TRUNZ, JR., DIRECTOR OF NAVAL PETROLEUM AND OIL SHALE RESERVES

Mr. BOWERS. Mr. Chairman, and gentlemen, I am Jack Bowers, Assistant Secretary of the Navy for Installations and Logistics. I have been assigned by the Secretary of the Navy to act for him in matters involving the naval petroleum and oil shale reserves. I appear today in response to the subcommittee's request for a Navy Department witness to testify concerning the current proposal to produce oil from Naval Petroleum Reserve No. 1, Elk Hills, Calif., as embodied in Senate Joint Resolution 176. With me today is Capt. Joseph P. Trunz, Jr., whom you have already heard from. I will ask Captain Trunz to address technical aspects.

The joint resolution is proposed to implement existing law governing the naval petroleum and oil shale reserves, title 10, United States Code, chapter 641, which specifies that any major production, beyond the minimum necessary to test, maintain, and protect the fields, must be authorized by a joint resolution of the Congress. As required by statute—section 7422 of title 10) and as recited in its introductory paragraph, the proposed Joint Resolution is predicated upon a national defense need for oil from Naval Petroleum Reserve No. 1, which need has been established by a finding of the Secretary of the Navy and approved by the President.

This finding was forwarded to Congress along with the proposed joint resolution and it cites the following justification for producing oil from Elk Hills:

Whereas, the Armed Services of the United States are currently unable to to procure on the open market necessary petroleum produtcs to maintain the desired military readiness posture. Present supplies of petroleum are not suffi-

cient, even through mandatory allocation, to meet both the needs of military readiness and essential civilian needs, including those vital to defense. As a consequence, adequate petroleum to meet defense needs cannot be assured from normal sources of supply. In addition and contributing more seriously to the growing deficit of sources of military petroleum supply, certain international events have led to reduced availability from sources outside of the domestic United States. Since the Armed Services normally procure 50 percent of their needs from these international sources, the military petroleum shortage is even more critical.

This compelling need for petroleum during the current energy crisis will significantly impact our posture of national defense if we do not alleviate it. Therefore, it is encouraging to note that the estimated delivery capability from Elk Hills will go a long way toward satisfying the needs of national defense. However, it is the Navy's responsibility to protect the naval petroleum and oil shale reserves from unnecessary depletion and, therefore, the legislation has been patterned carefully with three important features:

1. It is planned to produce from Elk Hills for a period of 1 year only. [An additional period of 45 days is allowed to build up to production rate.]

2. The level of production will be established at a level no more than is required for national defense.

3. Several steps will be taken such that at the end of the production period improvements in the reserves have been made and a fund will have been established to further explore and develop Naval Petroleum Reserve No. 1 and Naval Petroleum Reserve No. 4.

Upon making petroleum available from the naval petroleum reserves it is very important that the commercial organizations capable of transforming this resource into useful products, all have a fair and equal opportunity to participate. To this end, special attention is addressed in the resolution to insure fairness and equal opportunity for all companies, including major and independent oil refineries. As is the case under the current public law, contract awards will be subject to approval by the Justice Department and congressional committees.

In order to implement the above plan the joint resolution supplements the present law in the following particulars:

1. Authority is given to accumulate receipts derived from sales of Elk Hills oil in a special Treasury account, rather than to pay them into the general fund.

2. The Secretary of the Navy is authorized to expend moneys from this account for the purposes presently contemplated (exploration and development) and for construction of transportation facilities in and outside the reserve.

In summary, a determination of need has been made by the Secretary of the Navy and a joint resolution has been proposed which will provide needed petroleum. Special care has been taken to limit the amount and duration of production; and plans have been laid to assure the fairness in offering the petroleum for sale or exchange. The use of the moneys derived from sale of the petroleum will be carefully utilized so that much needed exploration and development is performed in order to make the naval petroleum and oil shale reserves a potentially much greater true reserve for future need.

Thank you.

Senator CANNON. Thank you, Mr. Secretary.

In your statement on the "Determination of Need" for increasing production of Naval Petroleum Reserve No. 1, you refer to a plan completed last April for the exploration and development of the reserves. Has anything been done to implement this plan?

Mr. BOWERS. I think that provided the basis for the knowledge that President Nixon used when he mentioned that he was planning to open the reserves in September, and then in framing this particular joint resolution we took that into account, and recognized that the moneys available from the sale would go a long way toward implementing that plan, and it is in accordance with that plan where we would operate.

Senator CANNON. Does the plan also cover the naval oil shale reserves?

Mr. BOWERS. Yes; it does.

Senator CANNON. It is my understanding that the Standard Oil Co. of California is the only private owner of lands within the Elk Hills Reserve, and their ownership may amount to some 30 percent. Will you explain to us the unit plan contract between Standard Oil and the Navy for the operation and exploration of the reserves?

Mr. BOWERS. First of all, the plan was entered into to make it a true national reserve. The ownership by Standard Oil approximates on an average of about 20 percent.

Senator CANNON. How much?

Mr. BOWERS. About 20 percent.

Senator CANNON. Twenty.

Mr. BOWERS. It is 30 percent in one of the areas and lower than that in the others and it averages about 20 percent.

Only the Navy is allowed to control production and only the Congress is allowed to increase the rate above that required for proper care and exploration of the reserves.

The Standard Oil Co. is allowed, on the other hand, to take out enough oil each year to pay for their taxes on that land and expenses necessary to them. This small amount of oil that they take then, if it is more then we produce, goes into a calculation which they must later allow a balance to be provided in the ratio of their holdings to that of the Government. Also, during the development of the land during the period of shut-in operation the facilities that are employed naturally we do not ask them to invest in the facilities which they could not use, and so their share of the cost of those facilities is also set aside and is subject to a payback when we go up to a higher rate of production. So that where their normal allowance of oil when you go into higher rates of production, would approximate 20 percent, there is a plan set up whereby their 20 percent would be reduced to only one-third of that amount until any imbalance in their expenditures and ours were taken care of.

Senator CANNON. What is the dollar value of that accumulation now?

Mr. BOWERS. To date that total imbalance in both facilities and oil they have produced, is $24 million.

Senator CANNON. So if you started at 160,000 barrels per day, then they would get roughly 7 percent until——

Mr. BOWERS. The $24 million.

Senator CANNON [continuing]. Until the other 13 percent amounted to roughly $24 million.

Mr. BOWERS. Then it would increase to the 20 percent, yes.

Senator CANNON. What are the legal ramifications of this proposed joint resolution as compared to the conditions of the contract with Standard Oil? In other words, would this type of a drawdown be consistent with the agreement without violating the terms of the agreement?

Mr. BOWERS. Yes; it is, we believe so. That is the way we phrased it.

Senator CANNON. Does Standard Oil agree with that?

Mr. BOWERS. We have not asked them for a legal opinion on this but informally, I have heard no objection and we have discussed it with them.

Senator CANNON. Because otherwise it would be thrown wide open for them to drill on their land or produce on their land whatever amount they were able to produce, is that correct?

Mr. BOWERS. That is what had been suggested. However, the statutes also provide for other means of safety of the reserve and I am sure we could prevent that.

Senator CANNON. It has been said by some people that Standard Oil may get a windfall if this resolution is enacted. What is meant by that and do you think that this is a conceivable result?

Mr. BOWERS. I think I would like to know what their definition of windfall is, but as far as we understand what will happen, they will merely have access to in the initial portion as you put it, 6 to 7 percent of their own oil, later rising to 20 percent, and—20 percent of the total oil that is drawn out, and so they are gaining access to their own oil and can use it for their own purposes. That is the only advantage that I understand that they would gain in this period. I would not call that a windfall.

Senator CANNON. Would it be possible that the windfall references may have been to in the event the contractor agreed so they could go in and pump without restrictions on their land?

Mr. BOWERS. Perhaps they partly meant that.

Senator CANNON. What are the current reserves of oil at Elk Hills?

Mr. BOWERS. About 1 billion is the current estimate.

Senator CANNON. Is there in this proposal that you have made where you say you can use the funds for further development, do you anticipate that further exploration in the Elk Hills reserve to determine if that reserve is greater than this 1 billion barrels?

Mr. BOWERS. Yes; and if you would not mind, I think I would like to explain our total expenditure plan. It has some ramifications of some numbers that have been used.

First of all, the rate at which we could draw down production, we believe we can easily get up to 160,000 or more should it be required from a combination of producing from the both Shallow and Stevens Zones.

Senator CANNON. That is from existing wells?

Mr. BOWERS. That is from existing wells, and there are approximately 800 in the Shallow Zone and 200 wells in the Stevens Zone.

We would prefer to utilize as much as possible the Shallow Zone and so the plan would envisage drilling additional wells in the Shallow Zone during the period of production in the year to maximize the amount we take from that area, taking only as much from the Stevens Zone as is required to make up the necessary balance.

Production from the Stevens Zone requires, it has a higher gas content and to preserve the pressure balances in the field it requires, gas reinjection into the field and, therefore, facilities to accomplish that must be demothballed and supplemented.

The total expenditures that we would then expect during the 1 year of operation include about one-third each making a total of $60 million; $15 million for facilities, $15 million for drilling new wells in the Shallow Zone, and $15 million in—I am not adding up, am I—it is about $14 million for the facilities and about $14 million for operating the field during that period, and the remainder is for drilling new wells in the Shallow Zone.

Now that makes a total of $60 million. Moneys that we take in from the sale of the oil over and above that amount will then be applied to a combination of exploring further Elk Hills and in particular, NPR No. 4 in Alaska. Much the larger percentage of those moneys would be applied to Alaska but there would be some applied to Elk Hills, and those moneys will be considerable and they will be expended over several years.

Senator CANNON. How would the oil produced be disposed of?

Mr. BOWERS. The oil will then be sold at public auction with particular care being taken so that no company has a particular advantage, and then as we mentioned earlier, we will attempt in all cases possible to effect an exchange with companies that can provide required petroleum products for the Armed Forces and through interlocking credit arrangements we are told that the oil companies can frequently allow to be delivered from another company so in all cases possible then we will attempt to exchange for direct usable products.

Senator CANNON. What was the basis of the decision made to allow the use of Elk Hills for only 1 year?

Mr. BOWERS. I believe it is a matter of discipline. The Navy, under the guidance of the Senate and House Armed Services Committees, has tried to protect the reserves and make them a true reserve and we believe that we should apply a significant amount of discipline so that it just does not go on an unlimited basis. We felt that the people who oppose using them at all would accredit this as a strong step toward that kind of discipline.

Senator CANNON. In other words, it was a practical matter, you thought you might be able to get it through for 1 year but you probably could not if you want for a longer period. Is that an oversimplification of it?

Mr. BOWERS. I would rather ascribe some higher moral motives than that to it. I think we are seriously trying to guard the reserves.

Senator CANNON. Section 3 of the resolution seems to give the Navy a blank check on the use of the proceeds from Elk Hills for exploration and development of the naval reserves, at least, bypasses the appropriation process. How will those funds be managed, and what control will the Congress have over major expenditures, if any?

Mr. BOWERS. First of all, we maintain as a matter of rule, a complete communication with the Senate and the House Armed Services Committees and it would be our intent to fully consult with them regarding our plans as we proceed.

Senator CANNON. Will provisions of section 3 apply to the naval shale oil reserves?

Mr. BOWERS. In the application of these to other work?

Senator CANNON. Yes, exploration.

Mr. BOWERS. I guess frankly, with the current emergencies that have been noted, we have felt that the money can best be spent, most efficiently spent, by attacking those most readily possible to deliver oil, and I think we credit NPR Nos. 1 and 4 with that. I would not be opposed to setting aside funds for the oil shale reserves, however.

Senator CANNON. What would be the difficulty if funds for operation and development and exploration of the reserves were authorized and appropriated annually by the Congress rather than in the fashion you propose?

Mr. BOWERS. I submit that it would be the same difficulty that we have with many of our military programs, where the programs themselves, and this one certainly, of the course, would be something that would have to be planned for a program of many years, and to have a well-ordered and well-planned program, we would like to avoid the necessity of a stop and start kind of situation. I recognize the importance of monitoring but I do believe we could proceed more efficiently if we were given greater latitude.

Senator CANNON. Will the proposed Alaska pipeline be able to handle the future output of Naval Petroleum Reserve No. 4 on the Northern Slope?

Mr. BOWERS. No; it will not. We will have to duplicate that capability.

Senator CANNON. What is the capacity of that pipeline?

Captain TRUNZ. The present capacity of the Alyeska, sir? The Alaskan——

Senator CANNON. Yes.

Captain TRUNZ. Two million barrels a day and it could probably be increased by modifying your pumping stations, looping, et cetera, to at least 2½, maybe 3 million.

Senator CANNON. Timewise, what is your estimate as to when Naval Petroleum Reserve No. 4 might be put into meaningful production?

Mr. BOWERS. First of all, our plan was a well-ordered moderate plan taking into account frankly, our normal abilities to obtain funds and proceed on an orderly basis and, as Captain Trunz mentioned, the figure of on the order of $150 million was planned to be spent over 10 years. Should the Nation feel that this was a greater emergency than was contemplated at the time we put the plan together we could expedite that a great deal but I would not be prepared to estimate at this time but following an exploration of 10 years, the development would have taken at least another 5 years, so if we proceeded at a deliberate pace we are talking in terms of 15 years, but I am sure it could be expedited.

Senator CANNON. What would be the shortest period?

Mr. BOWERS. Production in significant quantities in how many years?

Captain TRUNZ. With money, I guess you can do anything, Senator; 5 years, 7 years.

Senator CANNON. Five to 7 years would be sort of a crash program?

Captain TRUNZ. Yes, sir.

Senator CANNON. What do you estimate the costs will be for a 5- to 7-year program?

Captain TRUNZ. Both exploratory and development?

Senator CANNON. Right.

Captain TRUNZ. Assuming we have what we have anywhere between $5 and $8 billion.

Senator CANNON. Do you know what Standard Oil's position is with respect to this legislation?

Mr. BOWERS. I believe that they have indicated that they would be very happy to participate as our partner as they have in the past. They are neither opposed nor support it, but taking very moderate middle of the road view.

Senator, you did ask one earlier question about the House Armed Services Committee hearing, and I might mention that that hearing was accomplished before the legislation was phrased and much of the phrasing of our joint resolution took into account some of the things that came up in that meeting.

Senator CANNON. I see.

Mr. BOWERS. Their recommendations are available and you can use those in the record.

Senator CANNON. Thank you very much, gentlemen. We appreciate your being here with us.

We have a statement by Congressman Ketchum of California, which he has requested permission to place in the record at this point. Without objection, so ordered.

[Mr. Ketchum's statement follows:]

STATEMENT BY THE HONORABLE WILLIAM B. KETCHUM OF CALIFORNIA

Mr. Chairman, thank you for this opportunity to make a statement in support of Senate Joint Resolution 176, introduced by Senator Stennis, to authorize increased production from the Naval Petroleum Reserve No. 1, at Elk Hills, California. I should like to commend the Chairman for his scheduling immediate hearings on this vitally important measure.

The Elk Hills Petroleum Reserve lies entirely within the Congressional District I have the privilege to represent. I am therefore quite familiar with its capabilities and resources. For sveral months, I have been urging my colleagues in the House to pass legislation designed to open up this Reserve. In this citical phase of the petroleum shortage, Elk Hills represents one of our best sources of domestic petroleum, and should not be permitted to go unused.

As you know, in order for production at Elk Hills to be increased, the Secretary of the Navy must find that such production is in the National defense, the President must concur with this finding, and a Joint Resolution must be passed by both Houses of the Congress. The first two steps of this process have been completed, and I commend the President and Secretary Bowers for their swift action.

It is imperative that the Congress move immediately to complete the authorization. Chairman Hébert and Congressman Bray have introduced House Joint Resolution 832, and I have introduced similar legislation. House Joint Resolutions 838, 839, 845, 846, and 847. I am happy to report that we now have over 80 co-sponsors of this Joint Resolution in the House, and I hope that we have swift hearings before the Investigating Subcommittee of the Committee on Armed Services.

Mr. Chairman, prior to the Arab embargo of petroleum shipments to the United States and the cutoff of fleet resupply in Singapore, the Armed Forces were drawing 350,000 barrels of oil per day from foreign sources and 350,000 barrels per day from domestic sources. Today, all but a small amount must come from our dwindling domestic supply. It is even necessary to ship some of our domestic oil overseas to supply the military. For example, there is a refinery in Guam of 30,000 barrels per day capacity. Until the embargo, this refinery drew all its crude oil from the Middle East. This crude must now be shipped from the West Coast, giving rise to some wild stories of increased petroleum exports.

Given the shrinking domestic petroleum market we must insure that our Armed Forces are supplied on a priority basis. That, Mr. Chairman, is what oil reserves

are all about. Reliable estimates are that Elk Hills could provide up to 180,000 barrels a day to supply our fleet. This also means that 180,000 barrels a day now going to the military would be freed for domestic use.

Mr. Chairman, in this worst phase of the fuel shortage, we must act swiftly to increase the short term supply. Every day that Elk Hills remains closed means that the American people are denied 7½ million gallons of fuel. There has been a great deal of talk about ways to help alleviate the shortage—this is our chance to do something positive with immediate benefits.

The Resolution which I have introduced provides for a one year opening of Elk Hills. If we use the figure of 180,000 barrels pumped a day, a total of 67,500,000 million barrels will be removed from the Reserve. This is only 5.1% of the 1.2 billion barrels of oil known to be contained in Elk Hills. The Resolution further provides that funds received from the sale of Elk Hills crude oil be used to develop and explore the huge Naval Petroleum Reserve No. 4 in Alaska. Some estimates have placed the oil in this reserve at over 10 billion barrels. But at present, there is no way of knowing what we have available, as no in depth studies have been made. Likewise, it would be impossible to utilize this Reserve in a National emergency since there are no wells, no valves, and no pipelines to bring the oil down. It makes very little sense to have Petroleum Reserves if we cannot use them in a National emergency.

Just today, I received a letter from Mr. John S. Hagestad, an oilman well informed on Elk Hills. I find his letter most interesting and factual, and I enclose it and ask it be inserted into the record of these hearings.

In summary, Mr. Chairman, there are persuasive reasons why we should immediately open the Reserve at Elk Hills. The crude oil gained thereby will supply our fleet, and free 180,000 barrels a day for domestic use. The sale of the oil will provide for the vitally needed development of Naval Petroleum Reserve No. 4 in Alaska.

The Congress must act now by passing the Joint Resolution required to authorize increased production. I urge the Subcommittee to act favorably on Senate Joint Resolution 176, and request that the House Armed Services Committee begin speedy hearings on House Joint Resolutions 832 and 838. Once again, I thank the Chairman for the opportunity to make this statement.

BAKERSFIELD, CALIF., *December 4, 1973.*

Congressman WILLIAM M. KETCHUM,
Bakersfield, Calif.

DEAR CONGRESSMAN: After serving over forty years in oil drilling and producing industry, I would like to comment on some of the recent happenings that would come to my attention.

As part of my oil career, I spent three years as a Naval Officer attached to the Petroleum Naval Reserves at Elk Hills and Alaska. Of this time, I spent over two years at Elk Hills (1943–1946). Following my services as a petroleum engineer at Elk Hills, I returned in 1946 as an Oil Well Drilling Contractor and worked until 1949. This time was spent in rejuvenating and plugging some of the older wells. Later when additional wells were needed to bring oil production to the required level, I returned again as an Oil Drilling Contractor to drill approximately a hundred wells during the years 1953–1956.

It is my understanding that Elk Hills has a continuous producible capacity of 150,000 B/D. Of course this can vary somewhat and after continuous production of a year or more decline in production must be accepted.

Now many people continue to proclaim after thirty years following the end of World War II, that Elk Hills must be kept for an emergency. In my opinion we have an emergency now and this oil must be used. Part of the shut-in production extends back to 1924 or before and we do not need a nuclear holocaust to start using this oil. The argument put forth by those who do not want to use this oil at this time reminds me of the 73-year old man who is saving himself for the "Junior Prom."

As painful as it is, the Standard Oil Company will make large profits from the sale of this oil. They are rightfully entitled to this profit because they own some 20%-plus of the producing rights and facilities of the field. In 1944 the Standard Oil Company was "sandbagged" into forming a unitized operation by the Navy. During the war years the Navy Department under the threat of condemnation and long litigation forced Standard to enter into the joint operation under control of the Secretary of the Navy.

Recent articles have appeared in the press that advocate the drilling of more exploratory wells to develop new deeper production. I have no quarrel with limited deeper production, exploratory, but let me point out deep Eocene production in the San Joaquin Valley has not been promising. To drill these wells now will require that we take manpower and materials from proven field development that will increase our domestic supply immediately; to drill these deep Eocene Exploratory wells at this time will seriously handicap our present oil crisis.

In regard to our present "Oil Crunch," the Congress must take a great deal of the blame. As an Oil Producer, I have been trying to struggle along with oil that was $2.50/bbl when it cost $2.00/bbl to produce. This unjustified situation was created by Members of the Congress that reduced the depletion allowance and campaigned for many additional cuts. Hardly a day went by that some Member of Congress did not crucify the oil industry. If the Congress was not "Shouting Off," the press was continuing the cry to stop the money-grabbing oil industry.

As a result of this concerted effort to discredit the oil industry, I discontinued drilling my own wells and further because of the catastrophe in the industry, I stopped my oil drilling business.

Enclosed is a letter sent to the President on April 2, 1970, covering some of the conditions presented in this letter. I believe you will agree with me they have been proven to be correct.

Now the only way out is to raise the price of crude oil and gas. Tell me if you can, why the local producer gets $3.15/bbl for 25-gravity oil that Libya gets $7.50/bbl in Houston and Canada gets $6.40/ bbl in Detroit?

Now if the President and Congress would demand that local producers be paid the same price as competitive oil, then shortly you would see a change in our desperate oil situation. The oil producers both large and small have the capacity to furnish the needed fuel to our country but you must allow them to make a profit.

Yours very truly,

JOHN S. HAGESTAD.

Senator CANNON. We will now stand in recess, until 2:30 this afternoon.

[Whereupon, at 12:45 p.m., the hearing was recessed, to reconvene at 2:30 p.m., of the same day.]

NAVAL PETROLEUM RESERVE NO. 1

MONDAY, DECEMBER 10, 1973

U.S. SENATE,
SUBCOMMITTEE ON NATIONAL STOCKPILE
AND NAVAL PETROLEUM RESERVES
OF THE COMMITTEE ON ARMED SERVICES,
Washington, D.C.

The subcommittee met, pursuant to recess, at 2:30 p.m., in room 1114, Dirksen Senate Office Building, Hon. Howard W. Cannon (chairman).

Present: Senators Cannon (presiding), Nunn, and Scott of Virginia.

Also present: Gordon A. Nease; and Robert Q. Old, professional staff members.

Senator CANNON. The committee will come to order.

The next witness will be Mr. J. E. Gosline, former vice chairman of the board of the Standard Oil Co. of California. I understand you have some of your associates with you. Will you identify them, please?

STATEMENT OF J. E. GOSLINE, FORMER VICE CHAIRMAN OF THE BOARD, STANDARD OIL CO. OF CALIFORNIA, ACCOMPANIED BY TURNER H. McBAINE, CHIEF COUNSEL; A. B. BRISTOW, VICE PRESIDENT FOR PRODUCTION, STANDARD OIL OF CALIFORNIA WESTERN OPERATIONS, INC.; AND E. A. HARTSOOK, ELK HILLS STAFF

Mr. GOSLINE. Mr. E. A. Hartsook. He is a member of the Elk Hills staff; Mr. A. B. Bristow is a vice president of production for western operations, our operating company on the west coast; and Mr. Turner McBaine. He is chief counsel of Standard Oil Co. of California.

Senator CANNON. All right, sir, you may proceed.

Mr. GOSLINE. Mr. Chairman, my name is James E. Gosline. Until November 30, 1973, I was vice chairman of the board of Standard Oil Co. of California. I appear here in response to your invitation to my company to testify with regard to Senate Joint Resolution 176, to authorize the production of petroleum from the Elk Hills Petroleum Reserve No. 1.

Standard Oil Co. of California owns a substantial portion of the lands included within the Elk Hills Reserve. In 1944, under a special act of Congress, and with the approval of the President, and the concurrence of the then Senate and House Naval Affairs Committees, the Navy and Standard entered into a unit plan contract for the future operation of the Government and Standard Oil Co. of California lands within the then boundaries of the reserve

For those unfamiliar with such contracts, a unit plan contract is an arrangement, common in the petroleum industry, under which the owners of two or more separate parcels of land overlying a single oil-field or pool, agree to operate all the lands overlying that field or pool as a single unit, and to share production and costs in agreed-upon proportions.

While Navy has control over the operations of the unit, subject to the provisions of the unit plan contract, Standard Oil Co. of California was selected as operator of the unit, that is, to do the actual work required in the field, and under successive contracts with the Navy, still acts in this capacity.

We appear before you today, therefore, in a dual capacity. First, as the owner of substantial lands within the unit and the reserve, and a party to the unit plan contract; and second, as the operator of the Elk Hills field, under the overall control of Navy, subject to the provisions of the unit plan contract.

In the first capacity, we have no comment for or against on the joint resolution before you. We have not instigated this proposal in any way, and we do not oppose or endorse it. As a commercial oil company, of course, we would welcome an opportunity for further access to some of our own oil, particularly at a time when we are unable to meet all the demands on us for petroleum products. However, the Congress must decide whether to authorize increased production from Elk Hills solely on the basis of the national interests involved, and we fully recognize this.

In the second capacity; namely, as operator of the unit, I can inform you that my company is ready, able, and willing to carry out whatever program for increased production at Elk Hills the Secretary of the Navy may decide upon under the joint resolution before you, should the Congress approve that resolution.

That completes my statement, and I think you, Mr. Chairman.

Senator CANNON. Thank you very much, Mr. Gosline.

Does Standard Oil of California object to the kind of production the resolution would authorize?

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

Senator CANNON. Does it have a judgment as to whether that is more than it should be or not as much as it should be?

Mr. GOSLINE. We think that that is a reasonable rate of production to establish in the field, 160,000 barrels per day.

Senator CANNON. Let me ask this. What about the equipment that is in place in the field at the present time, the wells both producing and nonproducing and the equipment associated therewith, is that owned in the same proportion as the contract that provides for the evil?

Mr. GOSLINE. Yes.

Senator CANNON. Does Standard Oil agree that production in accordance with this resolution to offset current military shortfalls would be for the purpose of national defense under that unit plan agreement?

Mr. GOSLINE. Yes we do.

Senator CANNON. So that you would see no breach of the agreement on the part of the Government if that procedure were followed?

Mr. GOSLINE. Absolutely none.

Senator CANNON. Then, we could assume that Standard Oil would treat this production for contractual purposes as being exactly of the

sort contemplated by recital 8 of the unit plan contract, which specifically states the parties understanding that production must be preceded by a joint resolution of Congress under the act?

Mr. GOSLINE. Yes, sir.

Senator CANNON. Are the Standard Oil pipelines in the area of Elk Hills proprietary or common carrier?

Mr. GOSLINE. They are, I believe, proprietary, sir.

Senator CANNON. That is outside of the reserve?

Mr. GOSLINE. Yes, sir.

Senator CANNON. Would Standard Oil undertake to make spare capacity in its proprietary pipelines available to other purchasers of Elk Hills oil on an equitable basis if there should be other purchasers?

Mr. GOSLINE. I think we would certainly cooperate to the fullest extent with the Navy, certainly.

Senator CANNON. Are the existing pipelines, both within and outside the reserves, sufficient to handle proposed increased production of Elk Hills?

Mr. GOSLINE. I cannot answer that question, sir, except so far as our own pipelines are concerned, to handle our own oil. That is something I think the Navy has looked into. We have not discussed it with the other companies. We would not have the answer to that.

Senator CANNON. You say you have not discussed it with the other companies; you mean outside the reserves are there other companies immediately outside the reserve?

Mr. GOSLINE. Within the reserve, I think the pipeline capacity in general is adequate, is that correct?

Senator CANNON. Is generally what, adequate?

Mr. GOSLINE. Adequate within the reserve for the 160,000 barrels. Yes, sir.

Senator CANNON. There have been some comments made that the Elk Hills Reserve might actually be improved by increased production. What is your view on that?

Mr. GOSLINE. My opinion, sir, is that production particularly from the Stevens zone would be a desirable thing to do. Those wells have been in existence for many, many years, shut in. I personally think it would be a good thing from the standpoint of the maintenance of the reserve, testing the reserve to put those Stevens zone wells on and observe them. I think it would be worthwhile.

Senator CANNON. What do you think the potential might be for finding more oil within the reserve than is now believed to be there through further exploration?

Mr. GOSLINE. I think there is a very good opportunity, sir, within the reserve.

Senator CANNON. Do your geologists agree with that conclusion?

Mr. GOSLINE. Yes, sir.

Senator CANNON. I am wondering does your company and the Navy agree on the estimated reserve at the present time, is that an agreed-upon figure?

Mr. GOSLINE. The existing proved reserves?

Senator CANNON. Yes.

Mr. GOSLINE. Yes, sir; yes, we do.

Senator CANNON. I think the witness this morning said there were over 1 billion barrels, I think 1.3 billion, used on occasion.

25-650—73——5

Mr. GOSLINE. I think the figure of a little over a billion barrels is a figure that we certainly agree with the Navy on.

Senator CANNON. How vigorous an exploration program do you believe ought to be carried out by the Navy to try to prove additional reserves there?

Mr. GOSLINE. That would depend upon the period of time of the program, how aggressively you wanted to pursue it. I think, as I mentioned before, there is certainly opportunity in the reserve for additional oil. I think it would have to be gone at in an orderly way. I think the geology would have to be reviewed, the locations selected on a priority basis. I think it all depends on how rapidly one wished to accomplish the exploration program.

Senator CANNON. If this resolution were passed and the Congress gave the go-ahead on this program, what is your estimate now from the standpoint of increased production at Elk Hills? Could you give me some kind of a timetable?

Mr. GOSLINE. I think the timetable—can I ask my associate, Mr. Bristow, here, to answer that.

Mr. BRISTOW. I will be happy to answer that, sir. We agree with the statement made this morning by the Secretary and Captain Trunz, that a combined rate of 160,000 barrels a day could be attained within 45 days. I heard figures this morning of 60, but we have been looking at a schedule calling for 45.

With the orderly program that the Navy has outlined, which would involve additional drilling in the shallow zone, additional facilities, expansion of the Stevens zone gas plant, and so forth, we should be able to maintain this rate throughout the 1-year period, recognizing that there will be some decline, even with the development drilling in the shallow zone which would be made up by additional increments of Stevens, but maintaining a constant rate of 160,000.

Senator CANNON. What would be the rate of flow between passage of the bill and that 45-day period? Does it gradually increase day-by-day? Is this the sort of thing?

Mr. BRISTOW. Yes, sir, it does, but very rapidly. It would come on in increments. For instance, back in March of 1971 at the request of the Secretary and joint coordination with the Navy, we ran a 60,000 barrel a day test on the shallow zone for a period of a week, and we attained a rate of 60,000 barrels a day, as I recall, in about 24 hours. So and above that, you see, it would come on in increments.

Senator CANNON. How many of the wells are presently just on a standby status?

Mr. BRISTOW. There are 792 wells in the shallow oil zone. Some of these are not producible at the present time. At the present time, I believe the Navy's program calls for producing 477. There are 235 Stevens zone wells and their program calls for producing 92 in attaining this 160,000 barrel rate.

Senator CANNON. All of those wells that would be used to produce this rate, have they been periodically pumped for short periods of time?

Mr. BRISTOW. No, sir, they have not. The Stevens zone wells, as Mr. Gosline indicated—I want to stay away from technical terms if I can—have literally not been produced since their initial 30-day pro-

duction test when they were drilled and completed during a period of about 1947 to 1951. These, we are concerned about.

Senator CANNON. So they just have not produced anything since that time?

Mr. BRISTOW. Yes, they ship out a case in volume something like that occasionally.

The shallow zone wells by and large, have been on a, what they call a, rotational test program where, periodically, throughout the years, many, or most of them, have been produced for a few days at a time. That is about it.

Senator CANNON. Mr. Gosline, it has been said by a number of people that opening Elk Hills would result in a windfall profit to Standard on top of already very high profits, and you heard that alluded to here this morning, and I have seen an exchange of correspondence between Standard's counsel and Congressman Moss. I wonder if you would care to comment on that remark.

Mr. GOSLINE. I would be very happy to, Mr. Chairman.

Windfall, to me, means an unexpected piece of good fortune, and to some this implies that this good fortune is unearned or undeserved. Any such implication is clearly not applicable to the Standard Oil Co. of California with regard to Elk Hills in the circumstances involved here. There will certainly not be any windfall profit to the Standard Oil Co. of California if Elk Hills is opened up pursuant to this joint resolution. To explain this, I hope you will bear with me because in order to explain it, I will have to review just briefly for you the arrangements at Elk Hills.

As I said in my opening statement, Standard owns and for many years has owned over 8,000 acres of land in Elk Hills approximately one-fifth of the area included in the reserve in 1944. These lands are not all in one block but are checkerboarded throughout the reserve. Also, there are several separate oil pools or reservoirs within the reserve. These underlie both Navy and Standard lands and production from the lands of one could reduce the amount of oil underlying the other with the result that the Government's policy of conserving its oil in the ground until needed in time of an emergency could not be effectively implemented if Standard were to produce from its own land as it had the right to do.

For this reason, in the years prior to World War II, Standard did not develop this land within the reserve to the extent that it otherwise unquestionably would have done.

Furthermore, in 1944, Standard gave up its right to develop and produce from its lands, as it saw fit, and entered into an agreement with the Government giving the Navy the right, subject to the provisions of the agreement, to control operations on all of the lands in the field, both Navy and Standard, as a single unit.

As a consideration for giving up control over its lands, Standard was allowed to take a certain quantity of Shallow oil zone oil, most of this which was produced during World War II, until Standard had received 25 million barrels of oil or an amount equivalent to one-third of its share of the estimated recoverable oil in the Shallow oil zone, whichever was less, all of which production was charged to Standard's share of the oil in the Shallow oil zone and none of which was charged to the Navy share.

The contract provided that after Standard received this, oil production from the reserve was to stop except for that necessary to protect, conserve, maintain, and test the reserve and to cover Standard's out-of-pocket expenses in connection with the operation of the reserve.

So far as I know, no one has seriously suggested that Standard received an undue or unfair consideration for giving up control over its lands at Elk Hills when it was permitted, 25 to 30 years ago, to take a quantity of oil, most of which was going to be produced anyway, and all of which was charged solely to Standard's agreed share of the oil in the field and not in any way to Navy's share.

Senator CANNON. How much did Standard draw then; did they draw the 25 million barrels?

Mr. GOSLINE. 25 million barrels.

Senator CANNON. When was the last of that oil drawn?

Mr. GOSLINE. 1951.

Senator CANNON. 1951. So that from that time on, then, the only drawings from Standard were just those necessary to exercise the system in accordance with the contract; is that right?

Mr. GOSLINE. There was an additional approximately 3 million barrels—3½ million barrels, that were drawn as a consideration for Standard putting in some additional lands in the northwesterly portion of the field.

Senator CANNON. That were not in the reserve prior to that time?

Mr. GOSLINE. Pardon me. No, those were lands that were added.

Senator CANNON. To the reserve?

Mr. GOSLINE. Subsequently, to the reserve, and the so-called primary period, which is a period during which Standard was permitted to produce the 25 million barrels, was extended for 18 months, and the rate that was established during those 18 months by the Navy, the Secretary of the Navy, resulted in the withdrawal of the additional 3½ million barrels. So actually, Standard has withdrawn contractually 28½ million barrels.

Senator CANNON. Is that the so-called payback feature, that, if pumping is resumed, Standard would then owe the Government for its share of that oil?

Mr. GOSLINE. No. The so-called imbalance in production as a result of the difference between the amounts accumulated that have been withdrawn by the Navy and by Standard over the whole period up to the present time were out of balance, in production we are out of balance, of about 4 million barrels in the Shallow oil zone.

Senator CANNON. So that the imbalance has nothing to do with that 28½ million barrels?

Mr. GOSLINE. No.

Senator CANNON. Which were simply the consideration.

Mr. GOSLINE. The consideration.

Senator CANNON. The consideration then, for the agreement and for Standard putting in the additional acreage into the reserves, is that it?

Mr. GOSLINE. That is correct.

Senator CANNON. All right, excuse me if I interrupted you.

Senator NUNN. Mr. Chairman, could I ask one question? As I understand it, that 28 million barrels, the agreement provided that

you could go ahead and draw that out of the ground in the early fifties and that is when it was done?

Mr. GOSLINE. Yes, sir.

Senator NUNN. But that was charged in the long run against your share?

Mr. GOSLINE. Oh, yes, taken right out of our share.

Senator NUNN. That was not any bonus or anything else?

Mr. GOSLINE. No.

Senator NUNN. Only the timing of it, the fact that you could go ahead and draw it, was the consideration?

Mr. GOSLINE. That is right.

Senator NUNN. So it was the accelerated timing that was the consideration rather than the oil itself, is that correct?

Mr. GOSLINE. That is correct, Senator.

Senator NUNN. Because you own the oil anyway.

Mr. GOSLINE. Yes, sir.

Senator NUNN. In the final analysis, once Elk Hills is finally pumped out, that 28 million barrels will be part of your share?

Mr. GOSLINE. That is right.

Senator CANNON. Part of your 30 percent?

Mr. GOSLINE. Yes, sir.

Senator CANNON. All right, OK.

Mr. GOSLINE. Since then Standard has adhered to its agreement with the Government regarding Elk Hills and its oil, as well as Navy's oil, has been kept shut up in the ground with the exception of the relativley minor quantities noted previously. That is the amount, of course, I have referred to that is required to protect and conserve and maintain and test the reserve.

However, the purpose of the naval petroleum reserve is, of course, to have oil available to produce whenever it is needed for national defense, and the unit plan contract between the Navy and Standard to which I have referred, contains provisions which recognize this purpose and authority. The unit plan contract also provides that, in the event production of reserves is authorized for national defense purposes, it shall be shared by Navy and Standard in agreed upon proportions based, in the last analysis, on the respective shares of the oil in the ground, with certain variations giving recognition to other factors, such as the oil Standard received for giving up control over its lands.

In the light of these facts, to say that as long as the unit plan contract works solely in the Navy's favor, it is all right, but that when it works so that Standard receives access to an additional quantity of its own oil it produces a windfall to Standard, is to use a misnomer.

We entered into a contract 29 years ago which met the requirements of the United States, which was agreed to by my company. From our point of view this has meant leaving millions of barrels of our oil in the ground untouched for many years simply because, for us to produce from our oil in the field, would have made it impossible for the Navy to conserve its oil in the ground without suffering loss from drainage. So that, Mr. Chairman, is my answer to the question.

Now that Congress is asked to concur with the administration in finding the very thing contemplated by the statute and the contract that confronts us, namely, emergency, requiring production of oil from

Elk Hills for national defense purposes, to say if Congress does so Standard would receive a windfall is totally unjustified, is both unfair and prejudicial to my company.

Senator CANNON. I must say I am a little confused now about this $25 million figure vis-a-vis the 28½ million barrels. Now, I can understand that. You say that the 28½ million barrels were the consideration for entering into the agreement for the Navy to manage and also for you putting in the additional lands. If that was consideration for that, would that not have been over and above your 30 percent, or as you said to Senator Nunn, this would still be charged to your 30 percent?

Mr. GOSLINE. It still would be.

Senator CANNON. It would be charged to your 30 percent?

Mr. GOSLINE. Yes.

Senator CANNON. Explain the $24 million figure then.

Mr. GOSLINE. Frankly, I do not know the derivation of the $24 million figure but I do know that it has been alleged or stated in connection with the $24 million that we owe Navy $24 million. I think it is fair to say we do not owe the Navy anything. I think that if you wish, I could go into this in a little more detail. The percentage participation of the parties in each productive zone within the Elk Hills unit was fixed, as of November 20, 1942, and is to be revised retroactively from time to time, in the light of new knowledge gained. Generally, as to each zone, production is to be shared by the parties currently in accord with their then existing participating percentages, and costs are to be made currently in accord with receipts of production.

Because of the special provisions of the unit plan contract, however, for example, the provision that Standard was to be permitted to take World War II production up to 15,000 barrels per day to be charged to its share of the shallow oil zone, and this is where the consideration of the 25 million barrels comes into play, during the primary period—the primary period is the period during which this oil was taken under the contract—it was inevitable that the parties from time to time, would become out of balance with their participating percentages both in oil received and costs paid.

In addition, any retroactive revision of the participating percentages of the parties in a given zone will automatically place the parties out of balance in the zone. Accordingly, the parties provided for certain catchup mechanismsm and provided, at the end of the life of each zone, there should be an appropriate cash adjustment to effect an ultimate balancing of production and costs with final participating percentages.

It is because of these special provisions that Standard is at the moment behind in cost and ahead in oil to some extent. I want to emphasize that Standard does not owe this amount to Navy, nor in fact, does it owe any amount. The oil we have received was Standard's own oil from its share of the reserves. Costs incurred by Navy are mostly for readiness developments such as, well, as to be shut, in until an emergency, and thus of no immediate benefit to Standard. In the event of an open up. Standard would be required to reduce its take of production to one-third of its participating percentage share, which will work out to be about 12 to 14 percent, depending upon how you take the oil as between the zones, until oil balance occurs.

As I mentioned before, we are out of balance of about 4 million barrels in the shallow oil zone. If we open up the reserve we cut back

to one-third of our participating share in the shallow oil zone until this 4 million barrels imbalance is amortized and then we are in balance in oil.

When balance in total production is achieved Standard will increase its share of the current cost payments until cost balance occurs. The contract provides that when you are out of balance in oil you must come into balance in oil in order to begin to have Standard or the Navy, whoever is in imbalance in costs, and begin to pick up the additional costs and work into cost balance. It is the mechanism in the contract.

So that you can see, therefore, that in overall operation the unit plan contract is a fair one and it does not favor Standard at the expense of Navy or the United States.

Senator CANNON. In that cross balance then, the figure that was given this morning of $24 million that may or may not be correct at the time you start to repay?

Mr. GOSLINE. $24 million, Mr. Chairman, so far as I am concerned, does not mean a thing. I do not know how it was calculated.

Senator NUNN. It would depend on the price per barrel?

Mr. GOSLINE. It depends on the price per barrel. Now, we do know, do know, exactly what our monetary, our cost, imbalance is, it is $10 million. It is $5 million in the Stevens zone and $5 million in the shallow oil zone.

Senator NUNN. In whose favor?

Mr. GOSLINE. In our favor. We are ahead.

Senator NUNN. You are ahead?

Mr. GOSLINE. That is because of these readiness development wells I just mentioned, that were drilled really for the Navy's purpose. But nevertheless, we had to pick up the tab on that. As soon as we come into production balance then we will begin amortizing, we will pick up Navy's costs and then we will begin to amortize that $10 million and get into cost balance. So the thing, over the life of the contract, it can swing back and forth, but it is self-correcting.

Senator CANNON. Does your company and the Navy agree, or do you have a meeting of minds, as to the relationship, of the relationship of the parties on these issues?

Mr. GOSLINE. Yes, sir.

Senator CANNON. There is no dispute on that, is there?

Mr. GOSLINE. No, sir, none at all.

Senator CANNON. What is the price of that oil at the present time?

Mr. GOSLINE. The posted price of the shallow zone oil, I believe, is $3.35, and the market price, I believe, is about—it changes from day to day and week to week, I think it is roughly about, $6 now, Mr. Chairman.

Senator CANNON. Senator Nunn.

Senator NUNN. Mr. Gosline, I noticed at the beginning of your statement you said that you were vice chairman of the board of Standard Oil Co. of California until November 30. Have you retired or gone on to another position or what is your present status?

Mr. GOSLINE. I am unemployed at the present time.

Senator NUNN. No correlation between your appearance here today and that?

Mr. GOSLINE. No; I am a retired Standard oiler. I reached the mandatory retirement age the first of the month and I was in charge of

Elk Hills, not in charge but I kind of kept my arm around it for a good many years, that is why they called me and asked me to come back up here and I thought maybe I might be able to help you gentlemen.

Senator NUNN. You talked a little while ago about your estimates and your engineers estimate that it might be, if it was updated, more than 1 billion barrels. I believe the 1 billion barrels is the total estimate that you and the Navy agree on in Elk Hills.

Mr. GOSLINE. Yes, Senator, I think we all agree on that.

Mr. BRISTOW. It is a little over 2 billion barrels, sir, that the Elk Hills Engineering Committee, which is a joint committee with Navy and Standard, established as the reserve.

Senator NUNN. When was that established, at what time?

Mr. HARTSOOK. Established by the contract.

Senator NUNN. That was several years ago.

Mr. BRISTOW. Oh, yes.

Senator NUNN. Many years ago, the contract was when, 1951?

Mr. GOSLINE. 1944.

Mr. BRISTOW. Actually, Senator, the work was done subsequently to that, it was made retroactive to the date in 1944. These revisions were made in the late forties and early and middle fifties.

Senator NUNN. Has there been any intensive effort to bring that revision, or that estimate, up to date in the last few years?

Mr. BRISTOW. It has been updated due to minor developments. I believe one time for a very minor adjustment.

Let me go ahead here and explain to you that literally today, from an engineering standpoint, we have essentially no information, no further information, available to us than we had, for instance, in the mid-fifties, and this is just further along with what Mr. Gosline was saying a moment ago, I know of no major oil field anywhere where, with production, a major oil field now, where with production the reserves are gradually upscaling with history. It is very difficult to make a reasonable reserve estimate with no history on the field, and that is the position we are in at Elk Hills.

Senator NUNN. You would say, though, based on the history of other fields that, if there were a current estimate after production and so forth, your guess would be upward rather than downward?

Mr. BRISTOW. That would be my personal guess. It would be a revision upward.

Mr. GOSLINE. I would think so.

Senator NUNN. What would have to be done, how long would it take, to get a real tight estimate on what is actually there?

Mr. BRISTOW. I will give you a statement but I do not want to be prosecuted by every reservoir engineer in the country. We normally think in terms of at least 5 percent recovery and we like to see 10 before we can make a really reliable estimate.

Senator NUNN. So that would be——

Mr. BRISTOW. 5 percent, anyway.

Senator NUNN. 5 percent of a billion barrels and how long would approximately that take, that would be——

Mr. BRISTOW. Let us say, at 160,000 barrels a day that is 60 million barrels a years, roughly, you are in that range.

Senator NUNN. About a year.

Mr. HARTSOOK. Closer to 2, roughly 2 years.

Senator NUNN. In roughly 2 years you will have a much better idea of what is there and the Navy also than right now and the Navy, too.

Mr. BRISTOW. If you produced.

Senator NUNN. If you produced at 160,000 barrels a day.

Do you have any outside kind of figures or any guesses? Is anybody capable of making a guess as to how much would be there now or is this 1 billion barrels the closest you could come?

Mr. BRISTOW. This is as close as I would care to state at this time, and this figure was arrived at and after much deliberation by the engineering committee, and using typical reservoirs throughout the country of where we had history and so forth, as a model, and so it is about the best number you could come for it about at this time.

Senator NUNN. Am I correct in assuming that Standard owns 30 percent of whatever is there, approximately, or what percentage would it be?

Mr. BRISTOW. I will just give you the figure. If you use the total reserve of little over a billion barrels, our share is approximately 210 million.

Senator NUNN. Which would be 21 percent?

Mr. BRISTOW. Yes, sir.

Senator NUNN. 21 percent less the 21 million barrels that you have advance draw on?

Mr. BRISTOW. That is right.

Senator NUNN. Right. So, am I correct in assuming that neither the Navy nor Standard, that Navy and Standard, both having set percentages, the more that is there the better the Navy is and the better you are, right? There is no distinction between your position and the Navy in this, is that right?

Senator NUNN. Am I correct in assuming that no matter where the oil was found on this overall, when you look at the whole thing in effect as a joint ownership, tenants in common, and it would not matter whether the oil was found in one particular place on your land and whether you had more oil there or whether it was on Navy land?

Mr. BRISTOW. No, sir; that is not correct. It is my understanding—you see, our acreage is checkerboard acreage, and it is predominantly in the eastern end of the field, with a sprinkling in the west end. The Navy lands are pretty solid in the west end. So it depends on where the new discovery was made. It is conceivable, as an example, there was a deeper zone, a smaller one discovered several years ago, the Carneros. It is small. However, it fully underlines Navy lands in the western end of the reserve, and Navy's equity in that pool is a hundred percent and ours is zero.

Senator NUNN. So you could, if you assumed a billion barrels, it depends on where it is found, your share could be considerably more or less than 210 million, is that right?

Mr. GOSLINE. Correct.

Senator NUNN. If that is the case, this might get into some technicalities and I am not an engineer really, to understand or explain, but if that is the case and you can actually pin where it is from, is there going to be a draw down, in other words, if you started drilling your lands, I thought the reason for the arrangement was if you drilled

your lands you would be drawing from some possible reserves under the Navy land. Is that correct?

Mr. GOSLINE. Under the unit plan contract, of course, that would not be true because it is all unitized. The pools that we know about are all pretty well defined, and I do not imagine that there is going to be any, really any, substantial change in participating percentages in the future.

As you say, Senator, if it is found that, for example, the recovery in the shallow oil zone as a result of new data and new information brought about by producing fields, if that information should indicate that the reserves in the shallow oil zone should be increased 4 or 5 percent, well, then, those increases would be in a proportion that the parties own the shallow oil zone because the shallow oil zone has been pretty well defined, its limits have been defined.

Senator NUNN. But the 21 percent overall ownership is strictly an estimate.

Mr. HARTSOOK. It is a current estimate and could change with further knowledge.

Senator NUNN. A current estimate and instead of 20 percent of it could end up being 30 or 60 percent depending on where the oil comes from and whether your estimates are correct, is that right?

Mr. BRISTOW. I think to give an example at this point, at one time our equity in the shallow oil zone was over 33 percent and through subsequent revisions it has come down to 30 percent, and this has been a result of additional drilling through the years, this was years ago, in the shallow oil zone.

Senator NUNN. Whatever percentage you have is based on the best estimate at that particular point in history is that correct?

Mr. BRISTOW. That is correct.

Senator NUNN. And that estimate could change.

Mr. GOSLINE. By zones.

Mr. HARTSOOK. There are different accumulations and different percentages.

Senator NUNN. Twenty percent is the common.

Mr. GOSLINE. You add them all up. It is a composite.

Senator NUNN. If one zone changes the 21 percent——

Mr. HARSTOOK. Or if you find a new zone it might be 100 percent.

Mr. GOSLINE. These figures we have been talking about, Senator, are all based upon the known zones at Elk Hills. There are three known zones.

Senator NUNN. Which zone would be the first one pumped now? Are you going to pump several?

Mr. GOSLINE. We are going to pump, the Navy's program is to pump the two oil zones, the shallow oil zone and the Stevens zone.

Senator NUNN. Those two zones. Now, in those two zones what is the Standard oil's percentage?

Mr. GOSLINE. The shallow zone is about, just very close to, 30 percent, 29.9, something, what is it, 29.92, and the Stevens zone is 16.45, is that correct? 16.45.

Senator NUNN. Is it going to be a 50–50 situation? Are you going to pump about the same out of each zone or what?

Mr. BRISTOW. No, sir. What we are going to do, and this again, is the plan recommended by Navy, is produce the shallow zone to the limit

feasible under good engineering practices. Thinking in terms of the 160,000 barrels a day would bring the shallow zone on at about 100,000 barrels a day, and you remember earlier I said a decline would set in immediately, and well, with some additional drilling we expect we can maintain a rate to 90,000 barrels a day at the end of the year.

The Stevens zone would be brought on at 60,000 barrels a day to make the total of 160, and increased to 70,000 barrels a day by year end which, plus the 90 gives you your 160,000.

Senator NUNN. When you consider those two zones what you estimate for the 160,000 barrels per day, how much is Standard's percentage of that 160,000 barrels per day?

Mr. BRISTOW. Thinking in terms of this production end balance situation, initially, Standard would average about 22,000 barrels a day and at year end we anticipate that this production end balance would be corrected in about 9 months approximately. So that year end we would be taking about 30,000, 32,000 barrels a day.

Senator NUNN. So after you correct the imbalance you would be getting about 32,000 barrels per day, which is approximately 21 percent.

Mr. BRISTOW. Twenty-one percent.

Senator NUNN. Then, you actually physically take control of that crude after you get it out and the Navy puts the crude they have left on bid, is that it or they do whatever they want to with it?

Mr. GOSLINE. Yes, sir.

Senator NUNN. But you actually physically separate those two?

Mr. GOSLINE. Yes, sir.

Senator NUNN. On the part that the Navy has left each day or whatever the interval is where they disburse it, is Standard like any other bidder, does Standard have a right to purchase that?

Mr. GOSLINE. We would think so.

Senator NUNN. There is nothing in the contract that you know of that would preclude that?

Mr. GOSLINE. No.

Senator NUNN. Does Standard control those lines? You say you have proprietary ownership in the lines that the Navy would have to use.

Mr. GOSLINE. No. I do not know how the Navy—we have not discussed with the Navy how they would—we have not talked with the other companies that have the external lines to the field. We do not know what other arrangements they made with the companies.

Senator NUNN. Assuming some other company came in and bid can they actually physically pick up the product?

Mr. GOSLINE. We think so.

Senator NUNN. Would Standard be in a position where you would have almost——

Mr. GOSLINE. No.

Senator NUNN [continuing]. Great advantage in the bidding.

Mr. GOSLINE. Oh, no. No other companies have in the past.

Senator NUNN. I think your testimony a little while ago was that you would cooperate with the Navy in whatever proprietary interest you have in the lines.

Mr. GOSLINE. To whatever extent we could, we certainly would.

Mr. BRISTOW. We are in position where we cannot today comment

on these competitive pipeline companies. We do not know factually what their available capacities are, and so forth. We believe the capacity is there in the valley to move all this crude. Through our own system today, there would be a Standard Pipeline Co., we can move 50,000 barrels a day through our own proprietary system.

Senator NUNN. That is from Elk Hills?

Mr. BRISTOW. Yes, sir.

Senator NUNN. Is there any, do you know of any, other pipeline capacity other than yours?

Mr. BRISTOW. That is what I was stating earlier there, sir. We know there are several competitive pipelines right there in the area. They are not tied in. Now the Navy, we understand, has had discussions with these companies and, as far as I know, it appears that all the oil can be moved but I cannot state that factor.

Senator NUNN. We can ask the Navy that, you will be using your 60 percent of it to pump up for 32,000 barrels yourself and I assume that would have priority under all conditions concerned?

Mr. GOSLINE. Yes, sir.

Senator NUNN. So the difference would be what you would have left, that unused capacity. Is Standard being called on now to furnish Navy part of that 300,000 barrels per day under the Defense Production Act?

Mr. GOSLINE. Yes, sir. We certainly are.

Senator NUNN. Do you have any percentages as to how much you are furnishing?

Mr. GOSLINE. I think we have some figures here.

Mr. HARTSOOK. We have figures here in terms of our sales in district V and in the sales of district I through IV to the military and just summarizing it all told, our sales in 1973 to the military in October, which is the last month we have tabulated here, we are right at 20,000 barrels a day. The October sales in district V, the sales in October in district I through IV, were running about 6,100 barrels per day.

Senator NUNN. For a total of what?

Mr. HARTSOOK. For a total of about 26,000 barrels per day in the month of October.

Senator NUNN. Is that under the Defense Production Act or is that total sales?

Mr. HARTSOOK. That is total sales to the military.

Senator NUNN. Do you have a breakdown as to how much of it is in effect, under the Defense Production Act?

Mr. GOSLINE. I am sorry we do not have these up to date figures, Senator, but could we file a statement for the record?

Mr. HARTSOOK. Could we file it?

Mr. GOSLINE. Just recently the military has called on us for quite a substantial increase from our operating company in the southeast, Standard Oil Co. of Kentucky, and also, I believe, from our Western operations on the order, and I think this is under the Defense Production, I think on the order, of about a little over 20,000 barrels a day. Do not hold me to these figures because I will be happy to file a supplementary statement, but it is in Standard Oil Co. of Kentucky. It is JP4, about, the gasoline type aviaton and western operations it is JP4 and MoGas, water gas.

Senator NUNN. You can just furnish that for the record.

Mr. GOSLINE. I would be happy to.

[The information follows:]

STANDARD OIL CO. OF CALIFORNIA,
San Francisco, Calif., December 12, 1973.

Senator HOWARD W. CANNON,
Chairman, Subcommittee on National Stockpile and Naval Petroleum Reserves, Washington, D.C.

DEAR MR. CHAIRMAN: During the course of the December 10, 1973 appearance of Mr. J. E. Gosline at your Subcommittee hearing in regard to Senate Joint Resolution 176, you asked that we furnish the volume of petroleum demand recently assessed to Standard for the military pursuant to the Defense Production Act.

The attached Interior Department press release of November 28 sets forth the volumes of petroleum which twenty-two companies were directed to make available to the military during November and December 1973. As indicated on the second page, the mandated volumes for Standard Oil Company of California and its wholly-owned subsidiary, Standard Oil Company of Kentucky, was 1,236,000 barrels.

Respectfully,

L. T. VICE.

Attachment.

DEPARTMENT OF THE INTERIOR,
OFFICE OF OIL AND GAS,
For release Wednesday, November 28, 1973.

NEWS RELEASE

COMPANIES DIRECTED TO SUPPLY PETROLEUM NEEDS OF DEFENSE DEPARTMENT

At the request of the Department of Defense, the Interior Department has issued directives to 22 companies to supply a total of 19.7 million barrels of petroleum during the two-month period from November 1, 1973, through December 31, 1973, for use by DOD. This quantity is in addition to existing Defense contracts for fuel and anticipated allocations under the mandatory allocation program.

Authority for this action stems from the Defense Production Act of 1950, and intention to use this authority was announced in a Federal Register article dated November 6.

Companies may delay delivery of 30 percent of the amount requested until the end of January, if physical limitations prevent the company from making that delivery.

The following list shows the quantity of fuels which Interior has directed suppliers to make available during the months of November and December.

Directed petroleum supplies for DOD—November–December 1973

(Thousands of barrels)

	[1] *Directed quanity*
Amoco Oil Co	1,798
Atlantic Richfield Co	1,745
Charter International	159
Cities Service	548
Commonwealth Oil Refining Co	264
Continental Oil Co	643
Douglas Oil Co. of California	114
Exxon Co., U.S.A	1,193
Getty Oil Co	381
Gulf Oil Co	2,088
Hess Oil V.I. Corp	340
Marathon Oil Co	567
Mobil Oil Corp	407
Phillips Petroleum Co	726
Shell Oil Co	2,571
Southwestern Oil & Refining Co	133

Footnote at end of table on p. 74.

Std. Oil Co. of California	524
Std. Oil Co.—Kentucky	712
Sun Oil Co	1,055
Texaco, Inc	2,526
Texas City Refining Co	167
Union Oil Co. of California	1,002
Total	19,663

[1] "Directed quantities" is net volume remaining after quantities being supplied under current contracts have been deducted from gross volumes.

Senator NUNN. A couple of other questions. Now, the 160,000 barrels per day, I understand you and the Navy agree that is the proper level of production; is that correct?

Mr. GOSLINE. Yes, sir.

Senator NUNN. At that rate of production, how long will Elk Hills last, in your estimation? Do you have an estimate?

Mr. BRISTOW. Yes, sir. It has to be a rough estimate at this time, but I would say you are looking at about a 17- to 18-year life.

Senator NUNN. If it were assumed you were going to speed up the production, can it be done?

Mr. BRISTOW. That is why I said this has to be a rough estimate because I am anticipating that the rate could be accelerated, say, we took it on up to 200,000 barrels per day, which I do not think is unreasonable with additional drilling. However, it would decline faster. Whereas, if we stayed at 150,000, 160,000 barrels a day, I think you would naturally see a longer life.

Senator NUNN. About 17 years.

Mr. BRISTOW. But, you are in that range; yes, sir.

Senator NUNN. What I am really asking is your estimate as to what will be the maximum production per day that you could get out of that?

Mr. BRISTOW. I do not think I can really give you a good answer there, Senator. I would say certainly 200,000, but I know there have been estimates substantially higher than that which I just would not be prepared to substantiate at this time.

Senator NUNN. We are perfectly willing to accept hearsay without being substantiated. What have you heard, and I am certain the record would reflect this as not your opinion.

Mr. BRISTOW. It is not my opinion. I have seen opinions of the order of 260,000 to 300,000, in that range.

Senator NUNN. I have no further questions.

Senator CANNON. Let me get back for a moment to these various zones. You indicated that if the Navy explored on their western lands and made a strike there, this could conceivably reduce your overall percentage. Would that be true if the strike there were in the known zones that now exist? For example, suppose they hit the Stevens zone over on the western side of the field, would your percentage still remain the same or would it change?

Mr. HARTSOOK. It would change. In fact, there have been reductions downward in our percentage since the original findings.

Senator CANNON. I see. Any place that the Navy found oil on their own land then would reduce your percentage?

Mr. HARTSOOK. Yes.

Senator CANNON. As they made the exploration.

Mr. GOSLINE. It is their oil.

Mr. HARTSOOK. And that has in fact happened.

Senator NUNN. Suppose you made further exploration on some of your land, would that likewise be true?

Mr. HARTSOOK. It could go in the other direction.

Senator NUNN. How much of a buffer zone is there around this reserve to protect the reserve itself? Maybe I ought to ask Captain Trunz.

Mr. GOSLINE. Well, Mr. Chairman, legally as far as I know, there is no buffer zone. You have the boundary of the reserve, and then anything outside the boundary is not subject to the reserve.

Senator NUNN. Do you have any agreement with the Navy that you would not drill within a certain distance around the reserve?

Mr. GOSLINE. No.

Senator NUNN. How close is your closest well outside the reserve?

Mr. GOSLINE. Oh, about, reserve No. 2, how close is it?

Mr. BRISTOW. On 14B, 15B area, we offset each other.

Mr. GOSLINE. At the south end of the field, Mr. Chairman, there is an area that has been produced for quite a number of years in the shallow oil zone that they call the 14B area, and it is—actually, the production goes right across the reserve boundary. It is a little toe of oil that extends into the reserve, that has been produced for a number of years.

Senator CANNON. By you?

Mr. GOSLINE. By Navy and Standard.

Senator CANNON. But it is outside the reserve?

Mr. GOSLINE. Some of it is outside the reserve and some of it is inside the reserve.

Senator CANNON. If it is being produced outside the reserve, would that not deplete, would that not draw down on, that pool inside the reserve?

Mr. GOSLINE. This is just a little overlap of a pool that is not contiguous, is not connected with the main shallow zone. It is just, as I call it, a little toe.

Senator CANNON. I see.

Mr. GOSLINE. It is a little hangover into the reserve. As I say, it has been produced for a number of years.

Mr. BRISTOW. That is producing it on their side of the line. The Navy produces it on their side.

Mr. GOSLINE. The Navy produces on their side of the line and we produce on our side of the line. It has been produced commercially over many years, but it is——

Senator CANNON. The Navy has not been producing it over many years, have they?

Mr. GOSLINE. Oh. yes.

Hr. HARTSOOK. In this one small area. It is a very small area.

Senator CANNON. Are there any areas where there is a dispute between the Navy and/or Standard and other companies with respect to pumping outside of the zone that might theoretically lower the pool within the zone?

Mr. GOSLINE. Yes, there is an area, Mr. Chairman, that has been the subject of litigation. It is the so-called Asphalto area in the westerly portion of the field, and that litigation is still in progress. It has not been adjudicated.

Senator CANNON. Who are the litigants there?

Mr. GOSLINE. The United States, the Navy, and Standard Oil Co. of California.

Senator CANNON. Is the dispute between you people and the Navy?

Mr. GOSLINE. Yes, sir.

Senator CANNON. Does that involve wells that you have outside of the zone and that it is believed they are drawing down?

Mr. GOSLINE. Not only wells that we have outside the reserve, but wells that, in a field that, other companies participate in the Asphalto field. There are a number of companies, I think what, about four, about four other companies.

Senator CANNON. Thank you very much, gentlemen.

Mr. GOSLINE. Mr. Chairman, if I may, I have one other point which, with your permission, could I bring this up?

Senator CANNON. Yes, sir.

Mr. GOSLINE. We have a little difficulty with the present wording of the joint resolution, it may be a technical point, but we think it should be called to your attention, and Mr. McBaine, would you explain this point, please?

Mr. MCBAINE. Yes.

Mr. Chairman, questions have been asked here this afternoon which have clarified the disposition of the oil which would be produced under this joint resolution, be it a 100,000 barrels a day or 160,000 barrels a day. Senator Nunn asked the questions, and you did, Mr. Chairman. The point is that under the unit plan contract a part of that oil will go to Standard being produced from its share of the oil in the reserves. The language of the joint resolution does not, in our opinion, make this as clear as it might be to some of your fellow Members of the Senate who are not as familiar with the admittedly intricate situation we have here, and it would be our suggestion that in order to avoid any possible lack of clarity, that the words "United States share of the" be inserted at two places in the joint resolution, first on page 2, line 16.

Senator CANNON. Right after the word "of"?

Mr. MCBAINE. I was going to suggest, at the end of the very lines "Navy shall dispose of the" and then insert "United States share of the."

Senator CANNON. All right. Where is the other one?

Mr. MCBAINE. On page 4, line 2, after the words "available for," insert the words "the United States share of." Because, as Mr. Gosline has brought out, not only does Standard receive a part of the oil, but it also must pay a part of the costs, and therefore, the funds in this special account will be used to pay only a part of the total cost.

Senator CANNON. Thank you very much, gentlemen; we appreciate it.

There is a vote in progress, and I understand there may be another one to follow, so I am going to recess the hearings until 10 o'clock tomorrow morning and ask the other witnesses if they can come back then. Thank you.

[Whereupon, at 3:30 p.m., the hearing was recessed, to reconvene at 10 a.m., Tuesday, December 11, 1973.]

NAVAL PETROLEUM RESERVE NO. 1

TUESDAY, DECEMBER 11, 1973

U.S. SENATE,
SUBCOMMITTEE ON NATIONAL STOCKPILE
AND NAVAL PETROLEUM RESERVES OF THE
COMMITTEE ON ARMED SERVICES,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10 a.m., in room 1114, Dirksen Senate Office Building, Hon. Howard W. Cannon (chairman) presiding.

Present: Senators Cannon and Nunn.

Also present: Gordon A. Nease and Robert Q. Old, professional staff members; John T. Ticker, chief clerk, and Joyce T. Campbell, clerical assistant.

Senator CANNON. The committee will come to order.

The witnesses this morning will be Vice Adm. W. D. Gaddis, USN, Deputy Chief of Operations for Logistics; Brig. Gen. John C. Bartholf, USAF, Deputy Director of Maintenance, Engineering and Supply; Mr. A. Tyler Port, Special Assistant to the Assistant Secretary of the Army (I. & L.), representing the Navy, the Air Force and the Army.

Senator Tunney is here now.

STATEMENT OF HON. JOHN V. TUNNEY, U.S. SENATOR FROM CALIFORNIA

Senator TUNNEY. Could I, or at some later point?

Senator CANNON. You come ahead right now. We were expecting you first and I did not see you come in.

Senator TUNNEY. Mr. Chairman, I appreciate this opportunity to talk to you today about Joint Resolution 176 proposed by the administration and introduced by Senator John Stennis.

In the past, I have sent letters to President Nixon and Senator Stennis supporting the production of Naval Petroleum Reserve No. 1 at Elk Hills in an emergency situation. The implementation of the Defense Production Act of 1950 clearly indicates such a time now exists to tap the reserve for military use. The amount of oil the military has purchased from domestic supplies in the last few weeks has had a severe impact on certain industries in California. And throughout the west coast—and I have not had the opportunity to study figures in other parts of the country—but I would imagine the same impact is felt nationwide. In particular, the utilities and airlines have been affected significantly. With the military having first priority on available supplies, the same amount allocated to other users has been re-

25-650—73——6

duced dramatically. If the military were to use oil from the reserve, it would up a like amount, thus funneling much needed fuel back into the domestic market and relieving the strain on these segments of the economy. In addition, it may be possible for other purchasers of residual oil to negotiate for the supply once needed by the military. For example, the City of Los Angeles Department of Water and Power is in critical need of additional fuel; their fuel supplies will be depleted by March unless they can purchase more oil in the near future.

The cities of Burbank, Pasadena, and Glendale have a problem even more urgent, for they expect to be out of fuel around the first of the year. That would mean a complete blackout in those three cities.

I met with the mayors last week in my office and they are anticipating a complete blackout unless they can get fuel, which they do not anticipate being able to get at this moment.

Senator CANNON. Don't they get through the Southern California Edison or Southern California Power & Light?

Senator TUNNEY. No.

Senator CANNON. From the Boulder Dam allocation?

Senator TUNNEY. They do not. These cities have their own utilities.

Senator CANNON. Los Angeles is the only one that gets from the Boulder Dam power allocation?

Senator TUNNEY. The city of Los Angeles—the Department of Water and Power—purchases its fuel for electric generating purposes from such places as Italy. They recently had a major purchase canceled by the Italian Government as a result of the secondary boycott which is being imposed by the Arabs on any fuel or product that the country is supplying—may send—to the United States or to the Netherlands. So we have a very serious situation now about holding blackouts throughout the city starting around February. But about March, it will be critical because they will be out of fuel by March, and the city of Los Angeles has been in touch with my office asking if there could be some way in which they could be some sharing of power and one of the ways they would like to share would be with Southern California Edison which supplies the county of Los Angeles as opposed to the city which is, of course, a public utility owned by the city.

I realize that merely by opening up Elk Hills for military production will not completely eradicate the problems mentioned above. However, by such a program, coupled with the mandatory allocation program and its priority classification, much can be done to avert economic chaos in southern California.

Furthermore, I strongly endorse the policy to use funds derived from the sale of Naval Petroleum Reserve oil to be made available for exploration and development of Naval Petroleum Reserve No. 4. On November 7, I introduced S. 2669 designed to provide funds for the exploration of Elk Hills and Petroleum Reserve No. 4 and funding for a transportation feasibility study to determine the best means for transporting oil from the Alaskan Reserve. Such a study should be done immediately for the finding may indicate that the right of way used for the Alaskan Pipeline would be the most economical and have no additional environmental impact. Any exploration and development on the reserve should provide safeguards to protect both the natural and human environment in and around the reserve.

During these hearings, I am hopeful the committee will review two areas of utmost concern. First, and most obvious, is the guarantee that

the major oil companies do not receive windfall profits from the sale of oil at Elk Hills. In particular, I am concerned about certain contractual obligations between the Navy and Shell and Standard Oil.

Second, is there a plan to produce natural gas from the reserve and if so, can the fields be turned off at the end of a year once they are tapped for natural gas production?

I commend the committee for moving swiftly on this proposal in light of the reality of the energy crisis. I am hopeful Congress will soon be in a position to approve the resolution so the benefits reaped by such action will not be late in coming.

I would just like to add, Mr. Chairman, I think that in order to assure the Navy and the military that Elk Hills will be available as a reserve in future years, one might consider in drafting of legislation, which will allow the tapping of Elk Hills, a mandatory limit put on production of perhaps 15 to 20 percent of the total reserve so that 80 or 85 percent of the total reserve would be available in future years. In other words, use Elk Hills at this particular time as a stopgap.

I can only say that from what I have read recently we are in for a very serious problem not only in California but throughout the rest of the Nation with these energy shortages. I note the emergency preparedness study by the National Petroleum Council assumes if we do not have Arab oil in the first quarter of 1974 we are going to have a 38 percent shortage of heavy fuel oil, heavy fuel oil that is mainly used by industry, and that is going to mean 8 to 10 percent unemployment nationwide, and I just think that it is clear that in this emergency we need Elk Hills and the greatest threat to our national security, it seems to me, would be to have a major recession or depression in this country. That is something we can't afford. And inasmuch as that is a national security interest, it would seem that we ought to tap Elk Hills, which is a military petroleum reserve which is there to protect our national security.

Senator CANNON. I have not heard that 38 percent figure that you used a moment ago and I am a little surprised at it particularly in light of the fact that our entire imports from the Arab countries are so much, much less than that kind of a percentage. So it seems to me a little difficult to reconcile it.

Second, you suggest that we place a limit of, I think, not to exceed 15 percent, did you suggest, on the Elk Hills?

Senator TUNNEY. Fifteen to twenty percent of the total reserve.

Senator CANNON. Right new the proposal, of course, as you know, this is only a 1-year resolution, price for 160,000 barrels a day at maximum production, which would mean that we would be up to that within a 60-day period.

Now, the most conservative estimates that I have heard, based on our known resources in Elk Hills, estimate them from 17 to 18 years, and this would mean then that we would be taking out really about 5 to 6 precent at that kind of a draw down in a 1-year period. We would only be taking out roughly, say, 6 percent in round figures, so we would be well within what you have suggested.

Senator CANNON. In addition, most of the experts that I have listened to in this area believe that through an exploration program visioned here we will find the reserves in Elk Hills are much greater than they are believed to be now, which is roughly a billion barrels,

and so it seems to me that those items there are well within what you have suggested.

I certainly agree with you that if we were to be forced into a major recession that certainly is not in the best interests of the security of our country, but even beside that, it seems to me that as long as the military is placing more than a demand of 160,000 barrels a day on the civilian economy for fuel that there should be no question about the fact that this would be used for defense purposes in that sense of the word. While it truly is not a defense emergency, that is not required in the act either, that there would be an emergency, simply it be used for defense purposes.

You have said one thing here that gives me some concern because I have heard this term used by a number of different people and have not really had any definition as to what is meant.

You say:

> First and most obvious is the guarantee that the major oil companies do not receive windfall profits from the sale of oil at Elk Hills.

I wonder if you would define what you mean by that because I still have not heard what anybody anticipates the oil companies getting out of this in the way of windfall profits.

Senator TUNNEY. That is why I suggested to the committee that it look into this matter. I do not have any specific information as to the nature of the contract that exists between Standard Oil and any other parties. I have heard, however, from Californians, who are presumably in a position to know more than I, that the contracts are written in such a way that if there was production at Elk Hills Standard Oil of California would suddenly reap tremendous profits as a result of that production, and that even Standard Oil itself was concerned about producing because they recognized that this would be a red flag to objective outside parties showing that they had some kind of a special situation in Elk Hills that woud give them greater profits than if they were drilling elsewhere.

I do not have the facts and I did not try and develop the facts for the purposes of this testimony. I only wanted to alert the committee to the fact that these are rumors that I have heard and that it might be well for the committee to look into this question maybe by calling a witness from Standard Oil of California or perhaps the military witnesses.

Senator CANNON. I have heard that term alluded to in a number of instances but I can't seem to find out what is meant by windfall profits. As a matter of fact, the situation is such that when the Elk Hills reserve was developed many years ago, and at that time Standard owned lands in fee simple within the reserve, and so there was a unit plan worked out by contract between the government and Standard Oil fixing the percentage that they owned in the known reserves at that time and which they would both be entitled to draw out in those fixed percentages if the field were pumped. Over a period of time there has been an imbalance in the withdrawals but under the agreement if they started pumping now at 160,000 barrels a day that imbalance which now exists in Standard's favor would get back in balance in favor of the Government over the pumping period, whatever period it took to get the oil production back in balance, but under the agreement and under this proposal Standard would not get anything that

they don't already own as a percentage ownership in that Elk Hills reserve by virtue of the lands that they own within the reserve.

The agreement was later modified or amended because Standard developed other oil lands outside the reserve and those have since been used. The reserve has been expanded to include those and, of course, Standard has not been drilling other than for the purpose of exercising the wells and keeping them alive in accordance with the agreement with the Navy over this period of time.

So they have really not been pumping it for commercial purposes and I, myself, certainly would want to assure that no one would receive any windfall profits if at all possible, but I still am unable to pin down precisely what people are talking about in the nature of windfall profits in this instance.

Senator TUNNEY. I have not made a personal study of the matter. I never felt that it was my responsibility to do so. I only alert the committee in passing as to some of the allegations that have been made to me and I think it is up to the committee to do the investigation if it feels that it is warranted.

I have nothing that I can add further to that particular point. Unless there are any further questions before leaving the witness stand, I would like to read into the record the statements of deficit by the National Petroleum Council as of November 15, 1973, and they say that in gasoline, January 1 of 1974 to March 31, 1974, there is going to be a 16-percent deficit; distillates 29 percent deficit, and heavy fuel oil 38 percent deficit, overall deficit of 25 percent.

If you do have—and, by the way, also estimate that on the east coast there is going to be a deficit of 49 percent on heavy fuel oil.

Senator CANNON. But that was not because of the Arab boycott, necessarily; it was because of all of the conditions that exist.

Senator TUNNEY. All of the conditions including the Arab boycott.

Senator CANNON. Yes. I think the record needs to be made clear, if it is not already, if the Arab boycott were lifted tomorrow——

Senator TUNNEY. That is right.

Senator CANNON. This would still not solve the energy crisis problem, it would help alleviate it a little, but it would not solve it because we would have that irrespective of whether we did or did not have the Arab oil; we just would not have it to the same degree.

Senator TUNNEY. Absolutely. I couldn't agree more. The Arab boycott may result in about 3 million barrels per day deficit with an anticipated demand, as I understand it, in 1974 of about 19 million barrels per day.

Senator CANNON. If you should have any contact with people who contend that there is a possibility of a windfall profit, I certainly would appreciate having them called to the committee's attention so we could go into it, because if there is a likelihood, I would like to know how or whether it is just a rumor based on misinformation because we certainly don't want to take action that is going to permit anybody to have a windfall profit out of this very division.

Senator TUNNEY. I will supply, to the committee, the names of those individuals who contacted my office over the past several months that have made allegations of this nature and, as I say, I have not had the opportunity to do independent research myself. I did not think it was appropriate inasmuch as Elk Hills was not producing and it

was not going to produce unless it was accomplished by an act of Congress. Well, now we are considering an act of Congress, and I will make those names available to the committee.

Senator CANNON. Very good. Thank you very much.

Senator TUNNEY. Thank you very much, Mr. Chairman.

Senator CANNON. On your second point, I intended to address myself to that. You say is there a plan to produce natural gas from the reserve and, if so, can the field be turned off at the end of 1 year once they are tapped for natural gas production.

The basic production is anticipated to come from the shallow wells and essentially there is no natural gas, no appreciable amount of natural gas in that field, as I understand it. There is, of course, in the Elk Hills reserve but the basic purpose is to get the crude 160,000 barrels a day.

Counsel advises me that in the deep zone, in the Stevens zone, while there is gas there, they will have to use most of that gas to put back in the ground to keep the pressures up and so that there will be very little, if any, useable gas out of this production.

Senator TUNNEY. Thank you.

Senator CANNON. Thank you very much.

Senator TUNNEY. Thank you very much, Mr. Chairman.

Senator CANNON. Vice Admiral Gaddis, General Bartholf, and Mr. Tyler Port.

If you gentlemen have any others with you and you would like to have them along, have them move up to the table.

Admiral, if you are the lead off man we will let you fire away.

STATEMENT OF VICE ADM. W. D. GADDIS, U.S. NAVY, DEPUTY CHIEF OF OPERATIONS FOR LOGISTICS

Admiral GADDIS. Thank you, Mr. Chairman.

Mr. Chairman, I am happy to be before your committee to discuss energy conservation measures implemented in the Navy.

The Navy has a viable and aggressive program established for the conservation of energy—petroleum products as well as other energy sources, electricity, coal, natural gas and purchased steam.

As a result of the President's directed 7 percent energy reduction, the Navy has implemented worldwide conservation measures. We have further reduced our energy goals so that our conservation programs will substantially exceed the energy reduction target promulgated by the Office of the Secretary of Defense.

The performance for the first fiscal quarter, July through September, received from Navy Field Commands has documented a substantial reduction in energy consumption as related to the comparable period in fiscal year 1973. For example, aircraft consumption reflected a 19.8 percent reduction and ship fuel usage was down 20.7 percent. Significant reductions were also reflected in installation and Naval base operations.

Just recently, we have imposed an additional 20 percent cut in our Reserve Forces energy consumption for the remainder of fiscal year 1974 as a part of a SECDEF initiative. I think it may be interesting to note the various actions we have taken to conserve energy throughout the Navy.

The following directed constraints apply to ship and aircraft operations:

Limit ships transit speed of advance (SOA) to most economical speed which operational considerations will permit.

Direct that training commands service the maximum number of units. Utilize shore based simulators and team training mockups all possible.

Limit the number of ships participating in exercises. Cancel exercises with low training potential.

Require maximum use of shore or tender utility facilities while in port.

Reduce all support flight operations.

Reduce scheduled days underway for ships operating in vicinity of homeports.

Curtail cross country training flights.

Utilize maintenance and safety standdown to gain maximum training and readiness.

Limit carrier and air wing operations to minimum essential for safety of flight and mission essential training.

Combine logistic flights for maximum load factor per aircraft.

Modify ship port visits as necessary to insure minimum transit time.

Cancel or curtail training events which are high fuel consumers.

Utilize conventional vice jet aircraft, where feasible and available.

In regard to our shore installations, the following conservation measures have been directed:

Reduce speed of all Government motor vehicles not to exceed 50 miles per hour (except in emergencies).

Reduce thermostat settings to 65–68 degrees fahrenheit.

Remove from service 10 percent of inventory vehicular transportation equipment preparatory to excessing.

Tune up, calibrate, and clean heating plants.

Encouragement of car pools.

Moratorium on conversion from coal to gas or oil heating systems.

Lighting to be reduced to minimum levels consistent with necessary security, safety, working, and living conditions.

Cooling systems activated only when absolutely required for equipment operation, personal health, and safety. When activated, settings to be not lower than 80 degrees fahrenheit.

Operating and suporting systems and equipments overhauled and periodically checked for efficiency of operation.

Units or systems retained in standby status will be operated only as necessary to insure required system readiness and integrity.

Recreational, education, and other nonmission essential activities conducted in Government buildings or on Government activities during nonduty hours will be reviewed for essentiality, or rescheduled to periods when buildings are normally occupied.

Conduct an immediate review of primary and secondary petroleum requirements to identify areas where an immediate additional reduction of facility fuel requirements can be achieved.

Establishment of command energy conservation panels consisting of representatives of major organizational elements and supported

activities to insure continuous review and involvement in the command energy conservation program.

Material inspections by Inspectors General will specifically include review of compliance with imposed energy conservation directives.

Of course it is recognized that the recent international crisis and the special readiness posture which resulted will jeopardize our ability to obtain second quarter fiscal year 1974 reduction goals in the fleet. Certainly not as well as it did in the first war. I firmly believe that we can and will meet our assigned reduced energy consumption goals for fiscal year 1974.

I stand ready to attempt to answer any questions you may have on the Navy program. Thank you.

Senator CANNON. Specifically how has the Navy implemented consumption reduction goals and how will the performance be monitored?

Admiral GADDIS. Performance is monitored through a regular reporting system. We now receive performance reports on conservation measures from all of our major claimants and fleet commands and we also are participating in the defense energy information system which Mr. Mendolia spoke to yesterday and will use all that data additionally to insure that we are adequately checking up on the performance of our people.

Senator CANNON. Will you be compiling that on the basis of a month-by-month report or what will be your basic reporting period on that?

Admiral GADDIS. Our data collection and reporting system is on a weekly basis. Our specific consumption report by claimants is on a quarterly basis.

Senator CANNON. What other conservation measures could be implemented that would not jeopardize readiness?

Admiral GADDIS. Right now, sir, there are few additional conservation measures that we feel could be considered. Some more drastic actions would be 10-hour 4 day work week in areas that would not jeopardize mission responsiveness. We could more drastically reduce or curtail major service activities in the off duty hours. We could reduce overtime and night shifts where industrial product output would not be jeopardized. This would vacate industrial activities and therefore save fuel. We could also consolidate building occupancy beyond that which we have done so far.

As you can see, these impact only on the shore installations. Any further conservation cuts that I could envision for the fleets would impact significantly and directly on our primary mission effectiveness.

Senator CANNON. I think it would be well to keep in mind that if the situation occurs, such as Senator Tunney alluded to here a few minutes ago, that we find ourselves along in the first quarter next year with a 38-percent short fall in heavy fuels, that there are going to be an awful lot more pressures on the military to do more than they have done up to the present time. So I hope that all three of the services would review what they have done and what still could be done so that they won't be forced to do it at the time a worse situation develops but they start anticipating it and move in this direction if we are in fact going to get in the type of situation that has been described.

Admiral GADDIS. We have, Mr. Chairman, looked at levels of reductions in energy consumption all the way up to 35 percent and we will

continue to look at every level and every specific area. The reason that we have the program today is that while, yes, this amount of reduction reduces readiness somewhat, with ingenuity and imagination that reduction can be overcome. We will do our best to maximize our effort, there is no question about that.

Senator CANNON. This program is receiving the highest command support, is it not?

Admiral GADDIS. Right straight from the President, the Secretary of Defense, Mr. Warner, Admiral Zumwalt, all the way up and down the line; yes, sir, and every fleet comander has a board just like our board to search for new initiatives in their particular area of responsibility.

Senator CANNON. Has the Navy taken any action to explore other methods of energy for ship and air propulsion?

Admiral GADDIS. Yes, sir; specifically the Navy has explored the possibility of ship and aircraft propulsion from coal derived fuels. In fact, a test has just been completed utilizing fuel derived from coal in the U.S.S. *Johnston*, a reserve fleet destroyer out of Philadelphia. We will have to fully review the result to determine if this is an acceptable alternative to the fuel problem. However, the first reaction was that performance was excellent.

Senator CANNON. You had no difficulties in the ship trials at sea?

Admiral GADDIS. In the performance we used the two propulsion plants, one on petroleum and the other coal based fuel in the same run. We are comparing the equipment in the two plants now. What we have seen from opening up equipment to date is that it is completely comparable, sir.

Senator CANNON. How is the crisis impacting on the morale and the volunteer force goals?

Admiral GADDIS. We have no effect as yet that we can see.

Of course, if it becomes necessary to completely eliminate such things as sporting events, closing theaters and gymnasiums and shorten exchanges and commissary hours more than we have morale could suffer, but the Navy family is ready to do its share and more.

Senator CANNON. What is the 20-percent reduction going to have in the way of impact on Reserve forces?

Admiral GADDIS. There will be a very appreciable effect sir, and it will be adverse. Flying hours, and of course steaming hours, have been considerably reduced in the Reserve program. Our Reserve commanders will be challenged to develop alternate training measures to maintain their proficiency. In any event, certain vital exercises will be canceled or curtailed with a resultant decline in operational efficiency. This represents a reduction in days at sea for Reserve ships, for instance, from 13 to about 8, and that shortens the training opportunity.

Senator CANNON. What percentage of the Navy POL requirements were obtained from foreign sources and how has the embargo affected those sources?

Admiral GADDIS. For our Navy POL requirements, a very large percentage comes from overseas areas, principally Arab sources. For instance, the 6th Fleet gets the bulk of its fuel by contracts with refineries in the Mediterranean. Our Pacific area is dependent on sources on Guam, in Japan, Singapore, Philippines and direct from the Per-

sian Gulf at Rasat Tannura Bahrain. The Arab embargo has directly affected that position. Arab refined products and Arab crude accounted for approximately 48 percent of the defense requirements, a greater percentage for Navy. These overseas sources have been reduced or in some cases totally cut off. To resupply our deployed forces products must be shipped from CONUS.

Senator CANNON. Has this reduced your overseas stock levels materially?

Admiral GADDIS. We have periodically had to use prepositioned war reserves for scheduled operations, particularly during the heightened readiness conditions of the recent emergency.

Senator CANNON. Have you been able to rebuild those prepositioned stocks back or are they still drawn down?

Admiral GADDIS. We are not drawing down at present and we are replacing those stocks at a slow rate.

Senator CANNON. Are the services working in coordination with each other to reduce fuel consumption by single manager transportation agencies?

Admiral GADDIS. Yes; I think I can speak for all of the services. Certainly the Military Airlift Command and Military Sealift Command are working together to consolidate priorities and shipping requirements. The Military Sealift Command is coordinating most of the fuel lift and the bulk shipping support, in Navy, and I believe it is true in all of the services, only the very highest priority requirements for spare parts and support are being marked for air delivery through the military airlift command system.

Senator CANNON. How does the Navy allocate priorities for petroleum consumption?

Admiral GADDIS. It is really not so much a question of priorities of consumption competing for the same fuel because we can use different fuels for aircraft, for ships, for shore installations and so forth. The first priority, of course, must be to keep the operating fleet in a ready condition and maintain our operational commitments. The emphasis here is on deployed forces overseas.

The greatest reduction can be taken in the support areas both for airlift squadrons and for ships. For example, ships that have just returned from deployment are stood down for maintenance before getting ready for a new training cycle.

Senator CANNON. Well, have the actions taken affected combat ready pilot proficiency and aviation support in general?

Admiral GADDIS. I personally feel that any reduction has been only in those areas where you can afford a little bit less than the maximum proficiency. In other words, in supporting squadrons during periods after deployment when you have personnel on leave. The operating forces that are deployed in ready position have not been hurt as of this time; no, sir.

Senator CANNON. What are the steaming hour reductions now in force?

Admiral GADDIS. We have reduced our operating days for ships to a lower level than that recommended by the fleet commanders to maintain proficiency in all their primary mission areas. Both fuel and budget allocation constraints have forced the fleet to significantly fewer

operating days at sea than planned in the budget for the current fiscal year.

I would emphasize that the maximum reduction is in ships operating out of Continental United States ports rather than there deployed overseas.

Senator CANNON. With the reductions that have now been made can the proficiency of the fleet be maintained for an indefinite period of time at this level?

Admiral GADDIS. We feel that we can maintain the required level of readiness at this fuel level. We are certainly trying to. If we cannot we will be back to you. Right now we feel that we can not go any lower with out a very significant reduction in readiness.

Senator CANNON. Are you making maximum use of simultators in the aircraft area to reduce aircraft fuel consumption?

Admiral GADDIS. Simulators are being utilized to the maximum extent possible, Mr. Chairman. They use electric power vice petroleum products on aircraft but the trade off in energy consumption is considerable. We feel that it takes about 1.2 hours in a simulator to equate to 1 hour in an actual aircraft but the pilots and the trainees still, of course, have to fly the aircraft itself too in later stages of mission proficiency.

Senator CANNON. Senator Nunn.

Senator NUNN. Mr. Chairman, I think you have covered most of it. I just want to repeat a couple of questions I had yesterday regarding whether the Navy is looking at recycling of oil and possibly the second question being possible greatest utilization of retreads as opposed to new tires and things of that nature that don't relate to readiness but relate in a more practical way of conserving fuel.

Admiral GADDIS. I would note. Senator Nunn, that we collect the oil that is mixed with water and, therefore, can't be burned into a holding tank on board ship. When we get into port we would transfer that to separating tanks on the beach. The sludge from those separating tanks are then eligible for rerefining or other uses.

I would note additionally that we are now looking into the ships of the reserve fleet, ships that are tied up. Many of those ships were tied up with significant amounts of fuel in the tanks as a preservation measure. That fuel we are looking into reclaiming and re-refining to high quality products. These are just examples of our attempts to preserve all of the fuel we can.

Senator NUNN. Do you use the recycled products yourselves in your automobiles, and so forth, and your vehicles, or do you just make the recycled product available for civilians and manufacturers to recycle and then sell to people for civilian use?

In other words, does the Navy actually utilize recycled oil in your vehicles?

Admiral GADDIS. I know of no specific point where we have used recycled oil except in some cases at major air stations where you can mix some of it. Our major effort is in preserving the product for re-refining or for additional burnable fuel.

Senator NUNN. Would you take a look at that to see if it is feasible and see if your regulations could be changed without having an impact on readiness?

Admiral GADDIS. We certainly would.

Senator NUNN. It seems to me certainly if the civilian automobiles can use this, and civilians use that in many, many cases, the military can do the same thing.

Admiral GADDIS. I would note, sir, that it is entirely feasible and we do this to take some lubricating oils that have not been fouled with metal or anything like that and use it along with our Navy standard fuels. This is the heavier product. You cannot do that with the lighter products, the Navy distillate that we are using in most of our ships today.

Senator NUNN. Also we have gotten considerable testimony, and not being an engineer I could not say it is absolutely accurate, but I just wanted to make the point that every time you use a retread tire instead of a new one you save somewhere down the line, not Navy directly, but you are saving by using that retread tire about 5 gallons of fuel because of the process required in making them and I would hope——

Admiral GADDIS. We have had a 100 percent program of inspection and retread for our aircraft tires. Any hulk that is safe to retread is retreaded and used by the Navy. We have a very closely controlled program on that.

Senator NUNN. I am just pointing these out, not as significant things that are going to save the energy that the Navy is using now but all these things added together, if you have a program to look at this kind of savings, while you may not be able to claim directly the Navy has done that and you maintain be able to put this in your ledger sheet as being saved, your procurement policies can affect savings all the way down the line, and I just hope you would look at those and not just the direct reduction.

Admiral GADDIS. Yes, sir.

Senator NUNN. One other question. Admiral, this may be out of your jurisdiction but for sometime I have been concerned about the Naval presence on the west coast of Florida, the bases there that are being put in. Some new bases have just been moved there and so forth from other sections of the country. The offshore drilling and what that is going to do to those Navy installations there. I have received conflicting testimony from the Navy itself on that as to what the impact is going to be.

Is that under your jurisdiction? Do you know about the impact of the offshore drilling on the west coast of Florida as it affects the naval bases?

Admiral GADDIS. I am familiar with the problem. It is not in my particular responsibility area. You have two problems. One is the preservation of adequate aircraft operating areas, particularly gunnery and air control operating areas over the gulf, and the other one, of course, is ship operations principally out of Pensacola, for instance, for training carrier.

It is my understanding and I will provide an adjustment for the record if I am wrong, that the areas necessary to the naval air training operations in the gulf in the west Florida area have been adequately settled and agreed to as effective reservations of gunnery training and air combat training, navigation training, and ship operation for training carrier.

Senator NUNN. I would appreciate it if you would supply something for the record on that. Up to date I have received a couple of reports

that were obviously in conflict, and I pointed this out to the Secretary and he admitted that report No. 1 was the optimistic report and report No. 2 was the pessimistic report, so I would like the realistic——

Admiral GADDIS. You will get the full Navy report the next time.

Senator NUNN. That is the most diplomatic way I have heard of expressing a patent conflict. Would you get the realistic report?

Admiral GADDIS. Yes, sir.

Senator NUNN. I think many people in the Navy down the chain of command, are very worried about this and many people I have talked to in the Navy feel their training is going to be severely curtailed and jeopardized in the west coast area, particularly with the expansion of the offshore drilling, and this was before the Middle East situation, it was before the intensive interests, and I would think this problem is going to be magnified rather than diminished.

I don't have any further questions on that point, if we could get that for the record.

Admiral GADDIS. Yes, sir.

[The information follows:]

The Navy is compiling this information and will submit a complete report to the Committee shortly.

Senator NUNN. Admiral, some sectors of the petroleum industry have stated the conversion of the fleet to Navy distillate has complicated the fuel supply problems posed by the current national energy crisis. Can you comment on that?

Admiral GADDIS. Yes, sir, Mr. Chairman, I can see the view that since the Defense Production Act has gone into effect and we have taken some fuel that was originally scheduled to be sold to other consumers, that we can presume to present a problem to the civilian community in this regard.

Concerning reconversion of ships from Navy distillate to Navy special fuel, we have researched this problem extensively. It has been determined to be an extremely expensive move. We consider standardization of distillate-type fuels a more promising approach and are actively pursuing this.

I can only say, sir, that we must maintain our readiness if we are to be an effective force in support of the national interest. We are doing everything we can to reduce any effect we have on the civilian sector and insofar as energy and all other factors are concerned we will do all possible, but I feel that you would insist that we still do our basic job and I think even those people who are worried about being cold or gas rationing or something like that also would insist that we maintain our readiness position. We will do everything we can to be cooperative and I think that the record will show that the military services have taken a deeper cut already in fuel than is contemplated for the economy at large in anticipation of just this reaction.

Senator CANNON. All right, sir, thank you.

Senator NUNN. On that one point, may I ask one other question?

Strictly allegations that are not worthy of even repeating, but in general there is some concern that there are people within the military circle that are certainly in violation of the policy that you all have already articulated are in effect padding the use so that as the cuts come they start with a much higher base of these fuels. I am not saying that is true. But assuming that maybe human nature, what are you

doing and what steps are you taking to insure that commanders who are doing that are first of all checked on very carefully and, second, admonished if that is found to be true?

Admiral GADDIS. All of our data, all of our fuel storage tanks, and all of our soundings in ships are available for the record, Senator. I have checked on these things. Our Inspector General, as I noted in my statement, inspects this situation every time he goes to a station or command and every commander is responsible for this.

I would note additionally that the Defense fuel supply center is a single responsible agent for keeping the reserve stockage filled and reported accurately, therefore there is no opportunity in the bulk area for any, shall we say, packratting of fuel.

Senator NUNN. You are making that point loud and clear all the way down the line that that is absolutely——

Admiral GADDIS. Yes, sir; and anyone that violates it will have a real problem on his hands.

Senator NUNN. If I have any specific cases that are even documented well enough to cause suspicion I will certainly make them known to you. I don't at this time. But we have heard a lot of rumblings on or to that effect.

Admiral GADDIS. I would invite you at any opportunity anywhere near a naval station to please check up on this.

Senator NUNN. This is not specifically the Navy but it is all branches I am referring to at the moment.

Senator CANNON. I think that gets back to the old supply system and every supply officer who managed to have a few more supply parts on hand than he was authorized to have, if he could scrounge them up from any place.

Admiral GADDIS. This is true. We have a little advantage here, Mr. Chairman, on ships where design of the ship limits the capacity and we charge them with full capacity. The commander must produce, he must fill his tanks and we monitor his performance and usage.

Senator CANNON. Thank you.

Senator CANNON. General Bartholf.

STATEMENT OF BRIG. GEN. JOHN C. BARTHOLF, U.S. AIR FORCE, DEPUTY DIRECTOR OF MAINTENANCE, ENGINEERING AND SUPPLY, ACCOMPANIED BY LT. COL. CLIFFORD D. PRICE, U.S. AIR FORCE, ENERGY RESOURCES DIVISION, DIRECTORATE OF MAINTENANCE, ENGINEERING, AND SUPPLY, OFFICE OF THE DEPUTY CHIEF OF STAFF, SYSTEMS AND LOGISTICS DEPARTMENT OF THE AIR FORCE

General BARTHOLF. Mr. Chairman and members of the subcommittee, the subject that brings me here, Air Force energy conservation, is of utmost importance to our ability to accomplish our mission.

The Air Force has taken extensive measures to cope with the fuel shortages. The fiscal year 1974 flying hour program has been reduced 18 percent from fiscal year 1973 programed levels. This is the result of planned program reductions plus additional reductions necessitated by the fuel shortage. This reduced program, which is considered minimum essential to maintain operational readiness, results in a 14 percent reduction in fuel consumption because the amount of fuel varies

by type aircraft. This reduction in consumption assists in offsetting the rising cost of fuel. In addition, action is being taken to reduce Air National Guard and Air Force Reserve fiscal year 1974 programed consumption levels by 20–25 percent for the remainder of fiscal year 1974.

Aviation fuel conservation measures include flying time adjustments; reductions in engine warmup time, taxi time, and afterburner usage; optimize climb, cruise, and descent schedules; increased use of ground tows; and reduced engine run time for maintenance.

Events which limit fuel supplies in the short run will require additional reductions in operational activities which will impact adversely on operatonal readiness. Long-term shortages would result in progressive degradation in readiness, training, safety, and operations. Recovery would be progressively extended and put at risk the readiness of the U.S. Air Force for a protracted period of time. For example, long-term critical effects, such as disruption in the programed flow of trained aircrews, would be experienced.

Impact of the fuel shortage has adversely affected our ability to maintain war reserves and support mission requirements. The Defense production Act has been invoked to support minimum operating levels and to maintain war reserves. The use of the Defense Production Act was necessary because we were unable to get sufficient response to our open-market bidding—it left us with no choice.

Serious shortages in heating fuels, diesel for power generation and motor gas are a real possibility. These in turn could seriously impair mission capability.

At base level, we began in June 1973, to take various measures to conserve heating fuel and electrical power. Among the actions directed were a power curtailment reporting system, lowered thermostat settings, reduction of hours of heating, limiting areas to be heated, increasing efficiency of heating plants. These are appropriate applications towards compliance with the President's 7 percent energy reduction program. Future programs being explored are the desulphurization of coal, increased operating efficiencies of heating systems and plants, burning of solid waste products to produce steam and firing of waste POL products in heating boilers.

The transportation of people and equipment is another area of concern in meeting conservation goals. Actions taken include a review of vehicle operations for more efficient procedures. Vehicle inventories are to be scrutinized for proper types, sizes, and authorizations. Maximum vehicle fuel economy can be achieved with properly tuned vehicles which will require more intensive maintenance and upgrading of certain diagnostic equipment.

An intensive conservation—consciousness campaign is being directed to all Air Force personnel to gain support for energy conservation actions and to explain the rationale underlying these actions.

We stand by for questions.

Senator CANNON. What percentage of the DOD petroleum energy demand comprises aircraft operations?

General BARTHOLF. For DOD it is approximately 60 percent.

Senator CANNON. How is the petroleum allocated within DOD?

General BARTHOLF. It is not presently being allocated. Should it become necessary from a priority standpoint it would be done through the Joint Chiefs of Staff.

Senator CANNON. And then strategic systems such as B–52s would receive first priority if they do not now?

General BARTHOLF. Our strategic systems have not received priority under the Air Force directed fuels conservation measures. Cuts taken have been a function of reduction in flying hours and SAC in consonance with Air Force guidance has implemented a one-third reduction for its forces. This equates to over 80 million less gas for the months of November and December of this year or approximately 45 percent of the total Air Force savings.

Senator CANNON. How much, 45 percent?

Geenral BARTHOLF. Yes, sir.

Senator CANNON. What efforts have been implemented by the Air Force to reduce total energy consumption, particularly the consumption of petroleum products.

General BARTHOLF. We have instructed each operational command to reduce their flying activity by 30 percent for November and December of 1973. However, there are some exceptions. We have instructed the Air Training Command to maintain their student flow to the operating commands to insure that we have sufficient crew member replacements for normal projected attrition. The combat crew training schools and replacement training units in the field are also maintaining their student production. The result is we have taken a pretty drastic course of action and its impact will be felt in about 60 to 90 days, some decrease in readiness, at which point we may have to relax these reductions and increase our declining training activities.

Senator CANNON. From what you have said there are you saying the 30 percent was not imposed on training commands and combat training centers?

General BARTHOLF. That is correct, Mr. Chairman.

Senator CANNON. You said November and December. What happens after, what happens in January and February?

General BARTHOLF. We have received direction from the Deputy Secretary Clements in a memorandum dated December 5, that states that one of the objectives is reduce the DOD consumption of energy worldwide by approximately 15 percent from fiscal year 1973.

We are directed considering our readiness state, that we reduce our flying programs and we are in the process of working on this at this time.

Senator CANNON. I don't understand then with reference to my question for January and February. Are you going to be imposing that same type of reduction, are you going to have more reduction or less of a reduction?

General BARTHOLF. Mr. Chairman, we feel that to impose these reductions beyond January would obviously have a severe impact. At this stage of the game we are trying to establish what reductions would be reasonably to still maintain the state of readiness that we feel is imperative.

Senator CANNON. So you don't have in mind now the type of reductions you are going to be able to implement for January, February and March, say, and still maintain your readiness; is that it?

General BARTHOLF. Let me state it this way, Mr. Chairman. That concurrent with our efforts to design a reasonable program, we received the memorandum from the Deputy Secretary of Defense on December

5, that gave us the objective to implement a 15-percent reduction in fiscal year 1974 from the fiscal year 1973 total energy use within DOD.

Senator CANNON. Do you think based on what you know now that you are going to be able to continue that 30 percent reduction on your commands outside of your training command and combat crew training centers?

General BARTHOLF. Not without impairing our readiness state.

Senator CANNON. With regard to USAFE and PACAF, where do you get the supplies for those?

General BARTHOLF. Prior to the Arab embargo, we received most of that fuel from Arab sources. Of course as a result of the embargo now we are receiving fuel both from CONUS and from the other outlying areas, such as the Caribbean countries.

Senator CANNON. Does DSA manage all aviation fuel within CONUS?

General BARTHOLF. Yes, sir, to the base boundary.

Senator CANNON. And who manages fuel for USAFE and PACAF?

General BARTHOLF. It is through the defense fuels, through its field offices, gain until it is received at the base boundaries.

Senator CANNON. With regard to USAFE and NATO, how has the cutback of aviation fuel usage affected our conventional and our nuclear combat capability?

General BARTHOLF. In the short term our combat capability will remain at desired level. This is applicable to both the conventional and nuclear requirements. Under the long term, however, these capabilities will be seriously eroded. The air crews must practice their skills to maintain proficiency. The loss of the proficiency is not a straight line drop, it further decreases with time. Time necessary to reacquire the proficiency also becomes greater.

Senator CANNON. I understand the Air Force has voluntarily cut back on the use of aviation fuel in USAFE. Now will that result in reduction in flying hours have an adverse impact over safe flying operations, particularly when you consider that Europe has a considerable amount of bad weather this time of the year.

General BARTHOLF. Because of the bad weather in Europe at this time of the year, USAFE only cut flying by approximately 25 percent. This was to allow the crews to get sufficient time to maintain basic flying skills. As a stopgap measure this will be workable through December but if past that time safety could become compromised concomitant to degradation of combat skills.

Senator CANNON. Does the Air Force plan to draw from more reserve fuels supplies or have they had to draw on them since the fuel shortage became a reality?

General BARTHOLF. Mr. Chairman, we have been required to draw down on war reserve stocks in certain areas as a result of this extreme reduction. However, as of today, over all we are not into war reserve stocks.

Senator CANNON. Are the major commands able to generate an an adequate number of replacement pilots to fill the pilot losses under the present conditions and also have you upped the amount of flying hours per individual to take care of any shortfall in pilots.

General BARTHOLF. The undergraduate and combat crew training courses have maintained their program student production to provide

the major commands with crewmembers to meet their requirement. The continued ability to meet their needs in the future directionally relate ultimately to the training structure available. Therefore, since an available training program is fundamental to maintaining combat readiness, we intend to preserve this capability.

Senator CANNON. You have not had to change your proficiency minimums as a result of this shortage.

General BARTHOLF. No, sir.

Senator CANNON. You don't intend to do so?

General BARTHOLF. No, sir.

Senator CANNON. Do you have figures as to the minimum hourly flying time for fighter pilots and for a bomber pilot to maintain proficiency?

General BARTHOLF. Let me address that, Mr. Chairman, by clarifying what we are talking about between proficiency and combat crew.

The normal behind-the-line proficiency pilot has roughly 110 hours per year as an overall training program versus roughly about 220 to 240 for a combat crew.

Senator CANNON. Have you made any reduction in the number of pilots that are required to maintain proficiency, behind-the-line pilots?

General BARTHOLF. During this cutback of November–December; yes, sir. We have authorized a reduction in proficiency accomplishment commensurate with each unit's available resources.

Senator CANNON. Will you supply that either in comparative figures or in comparative percentages?

General BARTHOLF. Yes, sir.

[The information follows:]

Comparative figures or comparative percentages are not available at this time in Headquarters USAF. This information will be available on or about 1 February at which time it will be forwarded.

Senator CANNON. Are the flying hours reductions now in force the minimum necessary to maintain adequate readiness posture, in your judgment?

General BARTHOLF. In the short term.

Senator CANNON. What do you mean by the short term, how short a period?

Genral BARTHOLF. The figures of 60 to 90 days as have been stated by the chief of staff.

Senator CANNON. Are you, in effect, saying then that you are going to have to increase the flying hours to maintain readiness after a period of 60 to 90 days?

General BARTHOLF. Yes, sir.

Senator CANNON. What do you propose to do about it?

Are you saying that you are not going to be able to have a fuel reduction comparable to what you have now?

General BARTHOLF. That is correct, Mr. Chairman. The 30-percent directed reduction as we saw it was a program for November-December, and we feel that beyond the 60 to 90 days, we obviously could not sustain this type of reduction without impairing our readiness state.

Senator CANNON. What have you done about curtailing air operations, Reserve and Guard? Have you simply said that they have so much less fuel, or have you revised their training programs or what?

General BARTHOLF. For this period of time of November-December,

the Deputy Secretary of Defense, of course, stipulated that they would reduce their programs from 20 to 25 percent from the established program for the rest of the fiscal year 1974.

Senator CANNON. Would you be able to transport adequate supplies of fuel to theaters of operation to meet wartime requirements under present conditions?

General BARTHOLF. I would have to defer that question, Mr. Chairman. I don't believe I am qualified to answer that.

Senator CANNON. Will you supply that for the record?

General BARTHOLF. Yes, sir.

[The information follows:]

Yes, we would be able to transport adequate supplies of fuel to the theaters of operation to meet wartime requirements.

Senator CANNON. Have you achieved the maximum reduction to be achieved by persuing the use of flight simulators?

General BARTHOLF. We are utilizing flight simulators to the maximum extent that we can, recognizing we cannot reproduce the requirements outside the cockpit. So from the procedural standpoint and from instrument training, we are utilizing them to a maximum now.

Senator CANNON. Well, now, General, I want to pose the general proposition to you that I did to Admiral Gaddis a little while ago. You heard Senator Tunney's testimony, and your testimony here indicates that for 60 to 90 days you have imposed these 30-percent reductions, but that you anticipate you won't be able to continue it after that period of time, you will have to start using more fuel. I can well imagine what the public hue and cry will be if Senator Tunney's forecast turns out to be accurate along about February, maybe January or February, if the military comes up short of a national emergency from a defense standpoint and says we have got to have more fuel for training purposes. And I want to suggest to you now that instead of thinking in terms of more usage compared with what you are going to be using in December-January, you had better darn well be taking a look at how you are going to be able to use less fuel during that period of time.

General BARTHOLF. And we are, Mr. Chairman.

Senator CANNON. I would like to ask all of the services if they would give this committee a report back to this committee as soon as they can what the forecast is going to be after this initially imposed rather severe reduction and whether you are in fact going to have to come back and ask for a greater allocation of fuel, which means using the provisions of the Defense Production Act, to take it away from the civilian economy, or are you going to be able to lessen your requirements or at least hold them about stable during that period?

General BARTHOLF. Yes, sir.

Senator CANNON. Senator Nunn.

Senator NUNN. General, just a couple of quick questions. You have heard me already ask the other witnesses about whether they are looking at other methods of conserving fuel; for instance, oil recycling, retreads, and things like that, that will not have an impact on the readiness and also that might have an impact on direct savings, but down the line would have a significant reduction in overall American fuel. Are you looking at anything like that in the Air Force?

General BARTHOLF. I certainly will check into it, Senator. At this stage in the game for the recycying of oil, it is not to my knowledge

that we have a specific program in this regard. Likewise with retreading of tires.

Senator NUNN. Would you look into it and supply it for the record, not just those two but the overall effort in other areas to try to make efforts to save fuel all the way down the line?

General BARTHOLF. Yes, sir.

[The information follows:]

Currently, waste oil is collected, segregated and transferred to Property Disposal for resale and eventual reuse. The Air Force has a program to use retread tires to the maximum extent. However, they are prohibited on ambulances and front wheels of buses due to potential safety factors.

Senator NUNN. How about carpooling. I know, for instance, the base you and I are both familiar with, that you just came from, you have a tremendous number of civilian employees. What is the Air Force doing to try to stimulate carpooling and perhaps the use of busing and other vehicles to save with civilian personnel?

General BARTHOLF. Through our public relations program we are encouraging the utilization of car pools throughout. I say that is right down to include base levels regardless of the size of the organization.

Senator NUNN. Have you made any intensive effort in the last couple of months on that?

General BARTHOLF. I would say from the public relations standpoint and encouraging it as far as the policy change; yes, sir.

Senator NUNN. Could you supply for the record the steps that have been taken on that?

General BARTHOLF. Yes, sir.

Senator NUNN. And sort of document what you are doing on that? Because it seems to me that having been just on one base, near one base and seeing the number of individual automobiles with 17,000 civilian employees, that drastic savings could be made here particularly when you consider the huge number that are on the same shifts.

General BARTHOLF. Yes, sir.

Senator NUNN. I am not aiming this directly at that base but overall Air Force policy, what steps you have to take to encourage in the last couple of months as opposed to previous policy and what the results of that have been.

General BARTHOLF. Yes, sir.

[The information follows:]

The United States Air Force has gone on record Air Force-wide in support of energy conservation actions involving transportation. Air Force installations and activities have been asked to support this effort by organizing carpools, utilizing public transportation and adhering to regularly scheduled work hours to help achieve these actions conveniently. The carpool program is being publicized through means such as base newspapers, Commander's Calls, Airman magazine and the Air Force Policy Letter for Commanders.

Senator NUNN. I would also like to add that for the other two services, if you could supply that for the record.

General BARTHOLF. Yes, sir.

Senator NUNN. Army and the Navy.

General BARTHOLF. Yes, sir.

Senator NUNN. I don't have any other questions.

Senator CANNON. Thank you. Thank you very much, General.

The Honorable Tyler Port, Special Assistant to the Assistant Secretary of the Army.

STATEMENT OF A. TYLER PORT, SPECIAL ASSISTANT TO THE ASSISTANT SECRETARY OF THE ARMY (I&L), ACCOMPANIED BY COL. JAMES F. WARNOCK, U.S. ARMY, DEPUTY DIRECTOR OF SUPPLY AND MAINTENANCE, OFFICE OF THE DEPUTY CHIEF OF STAFF FOR LOGISTICS, DEPARTMENT OF THE ARMY

Mr. PORT. Good morning, Senator, it is a pleasure to appear before you to discuss the Army program for fuel conservation. I am accompanied by Col. James F. Warnock from the Office of the Deputy Director of Supply and Maintenance, Office of the Deputy Chief of Staff for Logistics, Department of the Army.

On July 5, 1973, the Army implemented a formal fuel conservation program by establishing fuel conservation goals to be accomplished by Army field commands and agencies. These goals were for a 10-percent reduction of gasoline, diesel, and aviation fuels based on fiscal year 1973 consumption data and a 6-percent reduction in petroleum heating fuels based on fiscal year 1974 projected requirements. It was estimated that approximately 1.06 million barrels of fuels used for mobile operations and approximately 840,000 barrels of heating fuels would be conserved under this program. To insure these goals were achieved, Department of Army allocated fuel to major Army commands and has monitored the progress toward achieving these goals through a quarterly reporting system by comparing the fiscal year 1974 consumption against the fiscal year 1973 consumption. A similar fuel conservation program has been established for conservation of electrical energy, natural gas and propane, coal, and purchased steam and hot water based on fiscal year 1974 projected requirements. The first quarter consumption report reflected that the Army was achieving its goals under these fuel conservation programs.

On November 8, 1973, the Army Chief of Staff directed that commanders take additional fuel conservation measures to achieve as a minimum an additional 10 percent fuel reduction in view of the current critical shortage of fuels. These goals are to apply against aviation fuels, gasolines, and diesel fuels consumed by the Army worldwide to include U.S Army Reserve and National Guard. Action is currently being taken to reduce heating consumption by 15 percent for fuels used in heating administrative buildings and residential quarters. These conservation programs have been transmitted through the chain of command to commanders worldwide. Commanders have been given guidelines to accomplish these fuel conservation efforts with the least possible impact on combat readiness. Specific measures that have been taken to reduce fuel consumption are:

1. Reduction of the flying hour program consistent with the 20 percent reduction in aviation fuels.
2. Reduced operation of mobile equipment such as administrative vehicles, construction equipment, aircraft, and watercraft.
3. Increase training in and around barracks areas where applicable to minimize troop transport.
4. Reduction of thermostat settings for all residential quarters to 68°F and lower setting for administrative buildings, workshops, and warehouses. Where possible, heat has been shut off in warehouse buildings and other facilities where personnel are not working.

25-650—73——8

5. Increased temperatures in air-conditioning space.

6. Reduced ventilation.

7. Delayed start up of heating operations.

8. Reduced interior lighting levels and discontinued use of lighting such as ornamental decorations on installations.

9. Increased maintenance of steam and hot water fixtures, valves, and equipment.

10. Reduced temperature settings for water heaters, except for dishwasher supply.

11. Reduced pressure in steam distribution systems during mild weather.

12. Installation of timers and reduction of exterior lighting levels.

13. Eliminate idling of vehicle engines during waiting periods.

14. Maintenance of strict asset control over fuel resources.

15. Consolidation of transportation requirements coupled with maximum utilization of mass commercial transit systems.

16. Increased maintenance of vehicles to insure proper tire inflation, proper adjustment of carburetors and the cleaning or replacement of dirty air filters.

17. Reducing speed of all Army vehicles to a maximum of 50 miles per hour.

This, of course, is only a partial listing. Commanders have been directed to use every initiative to reduce fuel consumption. It is the intent of the Department of the Army to achieve maximum fuel conservation possible and maintain combat readiness.

Thank you. That concludes my statement.

Senator CANNON. Thank you, Mr. Secretary.

You said in your statement that the projected requirements test was used to determine the heating fuel consumption requirements. Why did you use the projected requirements while for other fuels it was based on the 1973 consumption? Why didn't you use 1973 consumption in that estimate?

Mr. PORT. Senator, I will answer the question as to why we do it and tell you it has been overtaken by events. The reason why we selected 1974 projected requirements was because last winter, the winter of 1972–73 was abnormally mild, and additionally, the Army had converted many of its coal-fired plants to fuel oils to meet environmental standards and, therefore, those requirements were not in the fiscal year 1973 consumption history. The effectiveness of achieving significant reductions in heating fuels is largely dependent upon the weather.

Maximum effort is being extended to conserve heating fuels, such as lowering the thermostatic settings, as I explained earlier, establishing lower thermostatic settings in administrative buildings, maintenance shops, warehouses, et cetera, and where possible heating has been shut off in buildings where personnel are not working.

We are, however, now under instructions to base our 15 percent personnel fuel heating reductions upon 1973 consumption rates adjusted for new construction and changes in installation mission.

Senator CANNON. What will that net difference be in that figure?

Mr. PORT. The net change is from 6 to 15 percent or a net 9 percent reduction in consumption.

Senator CANNON. All right. Do you have the possibility now of converting back to coal-fired systems some of those systems that you

have converted this past year, that you referred to that you converted to oil or gas?

Mr. PORT. We have issued a letter, Mr. Chairman, which asks the Corps of Engineers to survey this problem. We have asked for a report on every heating unit of 50 million Btu capacity or larger to report the following statistics: the number and output, the type of heating fuel used, the availability of coal firing equipment to be put in such boilers, the estimated cost of conversion, and the time required to complete the project and the impact on the installation. That, sir, we just recently requested the information of engineers to determine.

Senator CANNON. What is the Army annual consumption of petroleum products?

Mr. PORT. Annual consumption of petroleum products is about 24 million barrels.

Senator CANNON. How much of that is for heating?

Mr. PORT. About 55 percent of that is for heating, or 13.3 million barrels.

Senator CANNON. Does DSA manage all Army petroleum fuels within CONUS?

Mr. PORT. Yes, sir; the Army requirements for petroleum products are reported to the Defense Supply Agency. The Defense Supply Agency makes the contract with the suppliers and notifies the Army who they are. The Army then goes directly to the source.

Senator CANNON. It has been reported in various newspapers that vehicles have been observed idling while waiting for passengers. You said in your statement that you had tried to discontinue this action. How are you monitoring it?

Mr. PORT. Sir, we issued a directive in July, I believe, of this year, on this subject and we followed it up with a reminder in August and then again in November. It is contrary to Army policy to run an engine for the purpose of either preheating or precooling the interior for the convenience of passengers.

Obviously this poses a problem in policing. We have to trust that the drivers through training and through proper orientation are aware of their responsibility and the effects of violation of this directive.

I am not prepared to say it does not happen, Mr. Chairman, but we are trying to prevent it.

Senator CANNON. What action has the Army taken to reduce flying hours to conserve fuel.

Mr. PORT. Mr. Chairman, we have sought to meet this problem by reducing the aviation fuel consumed by 20 percent. Each command has a mix of different types of aircraft. We therefore leave it to the commander as to which of these he will reduce, the flying hours in order to meet the overall 20 percent reduction. This may mean in some cases that certain types of aircraft will be reduced from 50 percent of their flying time, others 10 percent. The overall goal is 20 percent and we leave it to the command to discipline this, to regulate the matter.

Senator CANNON. When did you impose that requirement on them?

Mr. PORT. We imposed the 20 percent limit on the 8th of November.

Senator CANNON. And so have you had a month reporting yet to get any kind of official report for the first month?

Mr. PORT. No, sir. The quarterly report which I referred to was for the first quarter and our quota at that time was 10 percent. The

results of that report gave us a bases for consideration that a further reduction in light of the emergency can be taken.

Senator CANNON. And did you meet your requirements in the first quarter?

Mr. PORT. They met the requirements of the first quarter, yes, sir.

Senator CANNON. By the way, I would like to ask each one of the services as soon as you have your second quarter reports in, will you supply this committee with information as to how you have done, as to how goes it, based on what your requirements were. Do those reports normally come in by mid-January?

Admiral GADDIS. Our Navy reports require 65 days after close of the quarter.

Senator CANNON. That long? How about the Army?

Mr. PORT. Same thing.

Senator CANNON. Air Force?

General BARTHOLF. The same report basically.

Senator CANNON. If you will get the committee the reports as soon as they come in, but I think maybe in light of the fuel conservation program maybe you ought to take a look at whether the 45 days could not be shaken down a little bit, too.

Admiral GADDIS. We certainly could make an estimate before that time based on samplings.

Senator CANNON. What percentage of the Army's fuel consumption is overseas?

Mr. PORT. About 42 percent, sir.

Senator CANNON. What has the Army done about curtailing requirements by Army Reserve and Army National Guard?

Mr. PORT. We have treated the Army Reserve and National Guard on exactly the same basis as the activity forces. They are under the same goals for conservation.

Senator CANNON. Have you taken action to reduce ornamental and exterior lighting in your post stations?

Mr. PORT. Yes, sir, we have prohibited all ornamental lighting and have ordered a reduction of external lighting commensurate with security and safety. Certain commanders already have initiated action on that prior to our making it a directive.

Senator CANNON. Have you made any original changes in the Army to cope with the crisis?

Mr. PORT. We have recently organized an office of energy in the Office of the Deputy Chief of Staff for Logistics.

Senator CANNON. Has the lack of fuel caused any major impact on the Army's logistics system?

Mr. PORT. So far the major impact has been in the area of air cargo delivery. We have reduced the amount of eligible cargo in this respect to those spare parts which are critical and also for medical supplies.

Senator CANNON. Now, the Army obviously had some significant fuel reductions as a result of the troop reduction in Vietnam. Will the imposition of the reductions for the first quarter of this first calendar year be based on the Vietnam period or will they be based on post-Vietnam?

Mr. PORT. Mr. Chairman, we did realize some savings as a result of the reduction of the phasedown in Vietnam. However, we have redistributed the equipment we brought back to both the active units in

CONUS and to the Reserves and National Guard. Training that has had to be deferred as a result of Vietnam is now being resumed and an example of the kind of problem we run into is at Fort Campbell, Ky., when we had something like 328 aircraft and we now have about 449. Notwithstanding the increase in the distribution of equipment on CONUS they nevertheless have to meet the overall goals we have imposed upon them. These goals are above those which we saved as a result of the Vietnam phasedown.

Senator CANNON. Have you discontinued converting your coal-fired plants to fuel oil?

Mr. PORT. Yes, sir.

Senator CANNON. What impact has the increase in the price of the fuel had—I will ask the Army, then I will ask the other services as well.

Mr. PORT. We have noticed that we are up maybe 30 to 40 percent on our fuel costs. It may be more in those cases where we have to purchase from suppliers who are not covered by contract.

Senator CANNON. But the average has been about 30 or 40 percent?

Mr. PORT. Yes, sir.

Senator CANNON. Admiral, what is your experience?

Admiral GADDIS. The average of all Navy fuels on contracts for fiscal year 1974 which become effective July 1, averaged an increase of 32 percent over the prior year. This has obviously required an adjustment in our budget execution program for this fiscal year. I was just advised yesterday that the prices quoted on fuel contracts being executed under the Defense Production Act are significantly higher than the levels since July 1 and this will be a major fiscal problem for the Navy, and I would presume so for the other services as well, insofar as they get fuel under Defense Production Act contracts.

Senator CANNON. Were all of these prices decontrolled by the Cost of Living Council so that you could get that kind of a cost increase, 32 percent and 30 and 40 percent?

Admiral GADDIS. The Cost of Living Council had to make a ruling.

This is not under my purview, this is a management action of the Defense Supply Agency. But I understand that there was a special ruling made by the Cost of Living Council to allow the fiscal year 1974 contracts to be consummated. This was last spring that this action took place.

Senator CANNON. General, what was the Air Force experience?

General BARTHOLF. Basically, Mr. Chairman, that the cost for each grade of fuel is the same for the agencies of DOD, so the answer is the same.

Senator CANNON. So it would be in the same ballpark for all, because it is through DSA.

General BARTHOLF. Defense fuel, yes, sir.

Senator CANNON. A few days ago I was in a meeting with Mr. Simon and some other people, Admiral Ritch and others, and a statement was made to me that was rather surprising, but would seem to me that might have some possible application to you people and particularly your installations where you have a big civilian population. The statement was, in Israel they are issuing a sticker for each automobile and the stickers are color coded and depending on the color you have on the sticker, a car can only be driven 6 days of

the week. In other words, you have seven different color codes issued and, therefore, it means that one car can't be on the road on Monday and another one can't be on the road on Tuesday.

It would seem to me that this might bear some exploring by the services to cover the vehicles that come on bases, come on these installations and really force a carpool. Because this would automatically, if you were assuming one person to a car, this would automatically reduce the number of cars on base by one-seventh for any given day. And I can't verify it but that statement was made and it might bear some explanation.

Have any of you heard of that proposition?

Admiral GADDIS. Sounds like a very ingenious approach, Mr. Chairman. I would note that maybe our percentages are not better but I think we have given them one better by putting out of commission 10 percent of the automotive rolling stock of the Navy.

Senator CANNON. But that is the in-house equipment. What I am thinking now, you all have a lot of civilians that work on base and may or may not engage in carpools and this might be a method that could be used to insure that they are forced to use carpools and perhaps even some of our own people on base.

You might be able to force the better use of carpools through this type of operation.

I can't speak for the veracity of it but it seemed to me it was at least something worth considering.

It would be an encouragement to carpooling certainly.

Mr. PORT. We are looking at the problem of standardizing working hours on post stations as much as we can in order to encourage carpooling. Staggered hours or different shifts complicates the problem but the Secretary of Defense has asked the services to take a look at this matter.

Senator CANNON. General, do you have anything to add?

General BARTHOLF. No, sir; I believe we have covered it.

Senator CANNON. Let me ask all of you, is there anything that any one of you can tell this committee, whether we have asked you about it or not, that might be helpful to the committee, in your judgment, in making a decision (1) on the resolution that is before us and, secondly, on the broader issue of what could be done to achieve better results in this fuel crisis.

In other words, what I have in mind I don't want you to refrain from giving us the benefit of your judgment simply because we have not asked you a question about something. We would like to any information that you would care to advance to us.

Admiral GADDIS. Speaking just for the Navy, sir, I feel you have been most astute in your questioning and we had hoped that we had been thorough in our coverage of the problem. I can assure you there is tremendous pressure and attention within Defense and particularly within Navy to the problem of undertaking anything that increases efficiency or saves in consumption of fuels and energy of all kinds.

Senator CANNON. You say there have been tremendous pressure. I can assure you that if it starts to turn cold now in the Northeast in the next few weeks, and remains a cold winter, you just have not seen anything like the pressures you are going to see, all of you.

Mr. PORT. I would say on behalf of the Army we are acutely aware of the implications of this crisis. We have reviewed the situation in

terms of various percentages of reduction which we might take. I think the most I can say at this point is that we are aware that there may be more a crunch coming and we in the Army have determined that we are going to live with the goals that we have presently set and we are going to make them. If, as time goes on, we find that there are further impacts upon our ability to accomplish our mission, I am sure our commanders will report this through proper channels for evaluation at higher level, but as of the present time, sir, we intend to live with what we have set.

Senator CANNON. General, do you have anything further to add?

General BARTHOLF. Mr. Chairman, we will do our best to maintain the proper state of readiness within our capability.

Senator NUNN. I have a couple of questions.

First, Mr. Chairman, I am glad you gave that example about the stickers on the back of the cars that possibly would take one-sixth or possibly one-seventh of the automobiles off the streets on any given day. I heard that the other day and repeated it and nobody else had ever heard of it and I was beginning to think I had heard things, but I did hear the same example and I did hear about it in Israel and it certainly would be worth considering and I think the military would agree of control you have over the bases and the parking on bases and so forth, could lead the way in some of these kinds of things that may or may not work.

I think the military is going to have to take some initiative beyond what has already been done. I think you all have demonstrated that you are aware of the problem but I just wonder if you are going to take the kind of imaginative steps that can be taken in leading the way in this situation.

I believe that it is going to be absolutely necessary and I know that many people I talk to in our own State, General, don't believe it yet and they are going to be shocked, I am afraid, in the next month or so.

I do have a couple of questions for Mr. Port. You have heard my question oft repeated so far about the recycling, using oil. The Army I have been corresponding with on this subject. I don't know whether it has come to your attention or not. We got back an answer that basically said in effect that this is violative of our regulations and nobody ever thought that you might look at regulations themselves.

The second thing that we would have to take each batch, I think 7,500 gallons and so forth and test each batch to see if it met these specifications, and by the time you tested it would add 80 percent per gallon to the cost and, therefore, it was not feasible.

Now, I have been given many vague answers before but this one was right at the top. Because you can't test every batch of new petroleum. The civilians that utilized recycled oil don't test each batch. That is to me not a very responsive answer and I would ask you, Mr. Port, if you could look at that particular case because I think it does at least address itself to a direct answer whether you can do it or not, and if huge civilian chains are doing it in their vehicles I see no reason at all that Army automobiles could not do the same thing as a civilian automobile.

Do you have any knowledge of this situation or any comment?

Mr. PORT. Senator, I would be less than candid if I did not say I am now well aware of the correspondence you have had with the Army on this and I am prepared to ask the same question of the Army that

you have asked in this committee as of yesterday and today. I can say that as a result of the very brief research I have been able to do that the Army does now have a program to examine this problem. A research project has been established to examine this. I don't know any more about the subject at this time that I can report.

Senator NUNN. I might suggest if you look into the question of where the civilians are doing this it would be very easy to dispatch someone to go talk to them and find out what their experience is. Some of these things we are going to have to expedite, somebody is going to have to cut through red tape not on this but in all sorts of categories. If we go by the chain of command, and I am not suggesting we go around it, if you go through this long tedious process on this program to see whether it is going to work this energy crisis is going to be over before we get any answers.

Mr. PORT. I think the basic answer is that recycled oil has not been used by the military departments is a matter of policy. That was the response that the gentleman you have reference to received initially.

But the question of using recycled oils, if I understand anything about this, is not just a question of molecular structure and the technique that is used to bring recycled oil up to the specifications for the military by using additives. The question also runs into the environmental problem which is now very much with us. It simply is not a matter of how well they run in a vehicle but it is also a question of what happens to the emission control devices that are used in the vehicles as a result of the added chemicals and also what effect they have on the air.

Senator NUNN. I think these emission controls——

Mr. PORT. I am given to understand this is part of the problem.

Senator NUNN. We have a whole new game of rules now and emission control is going to be temporarily a thing of the past very rapidly, in my estimation. This is just an example, this may be completely nonfeasible, it may not have validity whatever—I am using as an example of what I think is a crucial problem that you all are going to have to take, not the standard military approach on, but recognizing we are in an emergency, we have got a January-February situation coming up. It is going to be, by all accounts, the worst experience we have had since the Depression, and I think we are going to have to cut through some red tape and somebody is going to have to do some real chopping in this situation; I want to make that point. This is only an example and it may not have any validity at all.

One other question I would be happy for anyone to answer. All of you have come up with your own list of various steps that are being taken and all the lists have variations in these steps. Is anybody trying to coordinate and if the Army has a good idea, at least try, or if the Navy or Air Force has a good idea, try it. Is anybody pooling these things together and seeing that you certainly get the benefit of the experience of the other services?

Admiral GADDIS. We consult together, Senator, and in addition, Admiral Sonenshein, who was here yesterday with Mr. Mendolia, is the director of the Defense Energy Task Force group which is supervisory to the services in this regard; his main job is to coordinate these kinds of things to insure that everyone takes advantage of good ideas.

Senator NUNN. Fine. I think that ought to be encouraged in every way possible and I would encourage you to take some imaginative steps, even if they don't work, and see if they can work, and see what we can do in this situation, because you are in a position to lead the way. I think you are going to have to do it.

I don't have any other questions. I would like to thank each one of the witnesses for being, I think, very honest and candid and responsive. I am sure that we are going to have to continue to monitor this situation very carefully in this subcommittee.

Senator CANNON. Thank you very much, gentlemen, we appreciate your assistance.

The committee will now stand adjourned subject to the call of the Chair.

[Whereupon, at 12 noon, the subcommittee adjourned subject to the call of the chair.]

APPENDIX

THE ASSISTANT SECRETARY OF THE NAVY,
INSTALLATIONS AND LOGISTICS,
Washington, D.C., December 6, 1973.

Hon. JOHN C. STENNIS,
Chairman, Committee on Armed Services,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: In connection with the President's stated interest in the temporary opening of Elk Hills Naval Petroleum Reserves for production, Joint Resolution 176 has been introduced for the consideration of the Congress. In connection with the Bill, as well as other legislation which has recently been considered which affect this Reserve, frequent questions have been raised.

Accordingly, the Navy Department has been requested to coordinate the compilation of questions with replies prepared by ourselves as well as other Departments of the Government. So that your Committee will have a full understanding of the responses which are being made to these questions, a complete compendium is enclosed for your information.

Sincerely,

JACK L. BOWERS,
Acting Secretary of the Navy.

Attachment.

QUESTIONS AND ANSWERS COVERING AREAS OF CURRENT INTEREST ABOUT THE NAVAL PETROLEUM RESERVES

1. Question. What are the Naval Petroleum Reserves?

Answer. The four reserves are oil fields on public lands of the United States set aside from disposition by executive orders issued between 1912 and 1924 and committed by act of Congress to the jurisdiction of the Secretary of the Navy.

2. Question. What are the purposes of the reserves?

Answer. Congressional policy for the reserves as expressed at 10 U.S.C. §§ 7421–38 is that the Secretary of the Navy should explore, develop, test, maintain and protect the oil deposits they contain and produce them on a large scale only when he determines production above the test and maintenance level is needed for national defense, when that determination is approved by the President, and when the production is further authorized by Congress in the form of a joint resolution.

3. Question. What does Standard Oil Company of California have to do with Naval Petroleum Reserve No. 1, Elk Hills?

Answer. At the time Naval Petroleum Reserve No. 1 was set up in 1912, Standard already owned in fee some 8,000 acres of the 45,000 acres within the exterior boundaries of the reserve as described in the executive order. The Standard-owned land overlies some 30% of the oil producible from the Shallow Oil Zone and some 16.5% of the oil in the Stevens Zone. Thus, Standard is, in a sense, a "partner" in the reserve along with the Navy because they are each part owners.

Standard is also an "employee" of the Navy in that it is responsible for the operation of the reserve under the "Unit Operating Agreement," the current version of which dates from November 1971.

4. Question. Is Standard producing oil from its lands within Naval Petroleum Reserve No. 1?

Answer. No, it is not, because in 1944 it entered into the "Unit Plan Contract" with the Navy whereby it agreed to let the Navy have complete control over the amount of oil produced from its lands. Consistent with statutory requirements, the Navy keeps the entire reserve, both Standard lands and its own, shut-in, except for the relatively small amount of oil (2,900 barrels per day) produced incident to testing wells and saving oil which might otherwise be lost to adjoining lands by drainage. Standard shares in this small production because of its partial ownership of Elk Hills and because it is entitled to oil to cover costs and taxes as explained in the answer to the next question.

5. Question. What are the other basic terms of the Unit Plan Contract?

Answer. Like the many "unit agreements" common in the oil industry, the Unit Plan Contract (UPC) contemplates that each party will receive, eventually, an amount of oil from the Elk Hills Field equal to the amount of oil which underlies the land it owns, irrespective of the location of the wells which actually produce the oil. Similarly, each party is expected to pay its pro rata share of the costs necessary to get the oil. However, the UPC has had to take into account the fact that the Elk Hills Field, unlike a commercial oil field, is not to be produced except upon an uncertain contingency, namely a national defense need for its oil. It would have been unfair to ask Standard, as a private corporation to pay its share of costs of developing the field when there was no guarantee that it would ever receive its share of the oil. Accordingly, the Navy agreed to pay all such costs "currently" and to defer the obligation of Standard to pay its share until such time as it actually received oil.

Thus, the UPC allows Standard to build up a deficit in costs, and it requires that it wipe out that deficit by paying more than its share of costs as it actually receives its share of production from the field. That "deficit" amounts to about $10.5 million at present. Standard starts getting its share of the oil in Elk Hills, in the terms of the UPC, when "production balance" is achieved.

The concept of production balancing was made necessary by the fact that the UPC allows Standard to receive oil ahead of schedule, as a deviation from the general rule that each party should share in the oil as it comes out of the ground according to its percentage ownership of the total oil in the field. At the start of the period of the UPC, Standard received all production from the Elk Hills Field until it had gotten 25 million barrels, as consideration for its agreement to give Navy control over production. So as to relieve Standard from being "out of pocket" during periods when the field is largely shut-in, the UPC allows it to receive enough oil to cover its share of current expenses and the local taxes on its Elk Hills land. These provisions of the UPC do not have the effect of giving Standard more than its percentage share of the total oil in Elk Hills, because its receipts pursuant to them are charged against its ultimate share, but they do have the effect of putting Standard "ahead" of the Navy in receipt of production to date, or, in the terms of the UPC, "out of balance" with respect to production. Thus, as of the present time, Standard has actually received a percentage of the oil withdrawn from Elk Hills to date greater than its percentage of ownership of the total oil in the field.

Foreseeing such a situation, the drafters of the UPC provided that when major production should occur, Standard would be limited to taking only one-third of its percentage share of the production, with Navy taking the other two-thirds, until such time as the percentage of Standard's receipts was brought back down to the percentage of its ownership in the field. At this time the oil Standard would have to forego receiving in order for "production balance" to be achieved stands in an amount worth $13.5 million.

6. Question. Does Standard Oil Company of California owe the United States $24 million?

Answer. No. As can be seen from the answer to the previous question, Standard does not owe the Government $24 million in money at this moment. Rather, under the UPC, it has a contingent obligation worth $24 million to the United States. The contingency occurs as production satisfying the requirements of the UPC takes place, at which time Standard first has to let Navy take two-thirds of its share of the oil extracted until $13.5 million worth goes to the Navy, and

then must pay more than its share of costs until the excess payments it makes amount to $10.5 million.

7. Question. If large scale production were to be undertaken at Elk Hills, what would be the effect on the Unit Plan Contract?

Answer. The answer to this question could depend on what the purpose of the production is and how the Government chooses to authorize it. Recital 8 of the UPC states the parties' understanding that Elk Hills will be subjected to production in accordance with the requirements of the law then governing the naval petroleum reserves. That law (10 U.S.C. § 7422) specifies that major production will be undertaken to meet the needs of "national defense" upon the authority of a "joint resolution of Congress." Thus, if Congress were to authorize Elk Hills production to fill a recognized national defense need, the UPC would be satisfied, the unit operation would continue, and the balancing of production and costs as discussed previously would take place. However, if production were authorized for some purpose other than national defense, within the meaning of that phrase as the parties understood it when they signed the UPC in 1944, Standard could argue that the production would not be taking place under the UPC, that the obligation to come into production and cost balance would not be triggered, and that the UPC itself would be voided by changed condition, returning to Standard the rights it had before the contract existed, namely to produce oil from its own lands in Elk Hills without restriction. It is far from clear, however, that Standard could show that it would be in any way prejudiced by this changed condition, or that the change is one that would excuse performance on its part. They Navy acknowledges that there is a potential problem, but does not concede that Standards contention would be meritorious.

8. Question. How would major production from Elk Hills be disposed of?

Answer. As provided by law (10 U.S.C. Chapter 641) the Secretary of the Navy is authorized to sell the production or exchange it for refined products for military use. Sales must be public and arrived at by competitive means. The proposed joint resolution submitted by the Administration to Congress to authorize a limited open-up of Elk Hills under present law reiterates and expands the requirement that competitive dispositions "shall be so arranged as to give full and equal opportunity for acquisition of the oil by all interested companies, including major and independent oil refineries alike." The formulation of the actual procedures by which the competitive fairness will be assure will be undertaken in consultation with the Anti-Trust Division of the Department of Justice. By law, all contracts for sale of production from the naval petroleum reserves must be signed by the Secretary of the Navy, consulted on by the House and Senate Armed Services Committees, and approved by the President. As a matter of course, all such contracts will be reviewed in the Department of Justice.

In the case of the sale of test and maintenance production to Shell, the contract was arrived at by competitive bid and public sale. Bids were invited to be made in terms of a premium or discount added to or subtracted from "crude base price," defined as the average of prices for similar crude oil posted at commercial fields in the same area as Elk Hills. Shell and Standard of California both bid "crude base price," without premium or discount. The winner was determined by lot.

9. Question. What is the role of the Shell Oil Company regarding Elk Hills?

Answer. Under a five-year contract dating from May, 1970, Shell is the purchaser of Navy's share of production from the unitized area of Naval Petroleum Reserve No. 1. It was intended that the Shell contract be used to dispose of the routine, relatively minor, test and maintenance production from that area. Although the contract is worded so that it could accommodate deliveries of production at increased rates, it was recognized at the time of its drafting that an open-up of Elk Hills, with vastly increased production rates would necessitate disposal by other means to best serve the interests of the United States. Accordingly, a clause was included in the contract which allows diversion of Elk Hills Unit production to such other sales, uses, or exchanges as Congress authorizes or directs, upon ten (10) days notice to Shell. Since increased production from Elk Hills requires Congressional action. Congress need only specify that the production be disposed of by new sales or exchanges and the Navy ceases to be obliged to make deliveries to Shell. The proposed joint resolution mentioned in the answer to the preceding question specifies that the production under its authority should be disposed by sales and exchanges concluded after the date of the resolution. It should further be noted that the Shell contract is terminable at the convenience of the Government upon 180 days notice.

10. Question. What can the Government do to stop production on land adjoining Naval Petroleum Reserve No. 1 which endangers oil inside the reserve?

Answer. The land adjoining the naval petroleum reserves is either privately owned or federal public domain land under the jurisdiction of the Bureau of Land Management. To avoid creating unnecessary threats to the reserves, the public domain land in a one-mile wide strip around the reserves was withdrawn from the federal oil and gas leasing program by an Interior Department regulation published in 1938. The "buffer zone" thus created is discussed in answer to later questions. With regard to threats posed by oil and gas operations on privately owned lands, the Secretary of the Navy is authorized by law (10 U.S.C. § 7425) to use the most obvious method of gaining control over adjoining private land, condemnation, but only when the engineering evidence indicates that "substantial drainage" from the reserve is occurring. Before considering the condemnation alternative, the Secretary must first try to negotiate a contract of the type authorized by 10 U.S.C. § 7426 and, failing that, try to arrange a purchase of lands on the same geologic structure as the reserve. Since Section 7426 is the law which authorized UPC, its provisions are to be looked at first when and if it appears wise to gain control over production from Standard-owned lands on the periphery of Elk Hills. Section 15(b) of the UPC states the parties' recognition that "it may hereafter be desirable" to bring into the Unit lands outside the reserve but lying on the same geologic structures as those under the reserve. The parties are to attempt to agree on "terms and conditions," i.e. the amount of consideration in oil Standard would get for joining its land to the Unit and, failing agreement, the Secretary of the Navy is to decide the question unilaterally.

11. Question. What was the cause and result of the Navy's suit against Standard Oil Company of California?

Answer. The "Amendatory and Supplemental Agreement" (A&SA), another contract between Navy and Standard, dating from 1948, set up the "proposed extended area" comprised of both federal and Standard land adjoining the reserve which was believed likely to contain extensions of producing structures inside the reserve. The A&SA specified an exploratory program whereby the parties would seek to indentify any such extensions and called for joinder to the Unit of land overlying them. For Standard lands in the "proposed extended area" to be joined, the A&SA specifies that the consideration to Standard will be one-third of the oil estimated to underlie the joined land. After Standard discovered oil in its Section 25–Z, within the "proposed extended area" in 1963, it disagreed with Navy's view that the land was subject to joinder to the reserve under the A&SA. Initially, Standard took the position that there was no geologic connection between its lands and the reserve, and that at any rate the A&SA did not apply to the situation because the oil discovery it had made in Section 25–Z had been the result of its independent drilling efforts, not undertaken in accordance with the exploratory program specified by the A&SA. Standard was willing to concede that the land was subject to joinder under Section 15(b) of the UPC.

Following a protracted period of negotiation Navy referred the controversy over Section 25–Z to the Justice Department for an opinion on May 5, 1964. By internal memorandum of November 3, 1965 the Chief of the General Litigation Section was notified of the desirability of litigation and the need for the development of additional information. By letter of January 23, 1967 the Assistant Attorney General, Office of Legal Counsel advised the Acting Secretary of the Navy that the issue between Navy and Standard was one that could only be resolved by litigation and accordingly, if the Navy Department desired a judicial ruling, it should formally request one from the Department of Justice. This was done by letter of May 19, 1967. Numerous conferences were held between Justice and Navy and voluminous documentary material was compiled in aid of drafting a proper complaint. Action for a declaratory judgment bearing on the question of joining Standard land to the reserve and on the meaning of complex UPC provisions on cost accounting and production balancing was commenced in the U.S. District Court for the Northern District of California on September 29, 1967. The chronology of this lawsuit is found in the index to the record filed with the Government brief before the U.S. Court of Appeals, Ninth Circuit, a copy of which is appended.

The court did not issue an opinion but adopted the proposed findings of fact and conclusion of law, filed by Standard on July 2, 1971 as those of the District Court. Notice of Appeal was filed on July 13, 1972. The brief of the United States on appeal was completed by May 11, 1973. The United States reply brief was

completed by June 21, 1973. Although the appeal is currently scheduled to be heard during the late spring of 1974, action is being taken to expedite this hearing.

12. Question. What are the implications of Standard's recent oil discoveries next to Naval Reserve No. 1, and what has been the Navy's response?

Answer. The most recent drainage threat to the Elk Hills structure was the September 1973 discovery well of Standard in its Section 7–R. This discovery well is located near the boundary of Naval Petroleum Reserve No. 1 on privately owned land. During the week of November 17, 1973, Standard had three producing oil wells with daily production averaging in excess of 10,000 BOPD, a fourth well ready to be brought on production, and five more drilling wells in various stages of completion. The Navy moved promptly to undertake the drilling of wells within the reserve to discover whether the oil pool being produced by Standard did in fact extend across the boundaries of the reserve. These drilling operations are now in progress. The information developed by the Navy wells will permit a decision as to whether action to protect the reserve is called for and the form it should take.

13. Question. What is the "buffer zone" around the Naval Petroleum Reserve?

Answer. Title 43, Code of Federal Regulations, 3101.1(a)(6), Lands within one mile of Naval Petroleum or helium reserves states as follows:

> "no oil and gas lease will be issued for land within one mile of the exterior boundaries of a naval petroleum or a helium reserve, unless the land is being drained of its oil or gas deposits or helium content by wells on privately owned land or unless it is determined by the authorized officer, after consultation with the agency exercising jurisdiction over the reserve, that operations under such a lease will not adversely affect the reserve through drainage from known productive horizons."

14. Question. Are private operations being conducted within the "buffer zone?"

Answer. Yes, the following is a list of the federal oil leases within the buffer zone of Naval Petroleum Reserve No. 1. The total production from the listed leases is minimal.

Sacramento lease No.	
051077	Sec. 10, T30S, R22E,
041855	Sec. 22, T30S, R22E.
064410	Sec. 22, T30S, R22E.
071813A&B	Sec. 26, T30S, R22E.
019311A&B	Sec. 6, T31S, R23E.
019378–A	Sec. 24, T31S, R23E.
019378–B	Sec. 24, T31S, R23E.
019284A	Sec. 20, T31S, R24E.
019284B	Sec. 20, T31S, R24E.

The Navy owned lands within Naval Petroleum Reserve No. 2 comprise only about one-third of the total acreage, checkerboarded amid diverse private holding so as to make protection impossible. The Navy lands within Naval Petroleum Reserve No. 2 were leased by the Department of the Interior during the 1920's and most of the land in the buffer zone has been leased by Interior to protect the government from drainage by private lands both outside and inside the Naval Petroleum Reserve No. 2. Consequently, the buffer zone surrounding Naval Petroleum Reserve No. 2 has very little application. Leases surrounding Naval Petroleum Reserve No. 3 are discussed elsewhere.

15. Question. Why were leases issued in the one-mile buffer zones around the Naval Petroleum Reserves?

Answer. There was no prohibition to the leasing of public domain lands adjacent to the Naval Petroleum Reserve land prior to March 21, 1938. On March 21, 1938, a regulation was promulgated which prohibited the leasing of public domain lands within one mile of Naval Petroleum Reserves. Pursuant to regulations promulgated October 28, 1946, oil and gas leasing within one mile of Naval Petroleum Reserves was permitted with consent of the agency exercising jurisdiction over the reserve. These instructional procedures for leasing of public domain lands within one mile of Naval Petroleum Reserves were the guidelines of both Departments.

Then, in 1955 a letter from the Bureau of Land Management Land Office Manager, Sacramento, California to the Director, Naval Petroleum and Oil Shale Reserves, concerning Navy approval of leasing of certain public lands adjacent to Naval Petroleum Reserve No. 2, and the resultant reply by the Navy by letter

of August 9, 1955, was construed by Bureau of Land Management to grant approval for the instant case and was further construed to apply as "blanket" approval for like action concerning the leasing within one mile of all other naval petroleum reserves. This process was followed by Bureau of Land Management until cancelled by telegram of January 8, 1963 from the Director, Naval Petroleum and Oil Shale Reserves, and confirmed by letter of January 14, 1963. By letter dated January 3, 1963, the Officer in Charge, Naval Petroleum Reserves in California advised the Manager Land Office, Bureau of Land Management, Sacramento, California, that "it is the desire of Navy that no unleased public lands in the 'One-Mile Buffer Zone' surrounding Naval Petroleum Reserve No. 1 be leased or re-leased, if the original lease has terminated."

As near as can be determined, two leases in the one-mile buffer zone at Teapot Dome, Naval Petroleum Reserve No. 3 were issued without Navy concurrence. One was leased in December 1965, and one in May 1970. Action is pending to terminate these leases.

16. Question. What is the current situation of oil and gas producing activities in and adjacent to Naval Petroleum Reserve No. 3?

Answer. In the South Teapot Field, located at the southeastern edge of Naval Petroleum Reserve No. 3, there is one producing well (Dakota sand) about ⅞ of a mile from the boundary of Naval Petroleum Reserve No. 3. There are six abandoned wells between this one producing well and the Reserve. In the North Sage Spring Creek Field, located south of the Reserve, there are two producing wells (Dakota sand) within one mile of the Reserve. There are four abandoned wells between these two producing wells and the Reserve. In the East Teapot Field, located adjacent to the eastern boundary of the Reserve there are 155 producing wells (Shannon sand) within one mile of the Reserve. Production from several of these wells began in the 1920s on Federal leases issued before promulgation of the Department of Interior regulation (43 CFR 192.2, March 21, 1938). These wells posed no drainage problem until Federal lease operators in their area began the then new oil production technique called "sand fracturing" in 1958. The Navy, its petroleum consultants, and U.S. Geological Survey concluded that drainage from the eastern part of the Reserve in the Shannon sand was probably occurring. After consulting Congress, Navy obtained funds to drill several wells in the Shannon sand, in order to substantiate the engineering studies. All information indicated that it was necessary for Navy to produce oil from the lands adjacent to the East Teapot Field. To date Navy has drilled and completed 104 wells adjacent to the East Teapot Field. Through October 1973 Navy has produced 2,530,483 barrels of oil from its 104 Shannon wells. The East Teapot Field has produced 3,485,030 barrels of oil during the same period. In 1966 two Federal units were formed in the East Teapot Field for the purpose of conducting a secondary recovery water flood program, which is still in operation. All injection wells within these units were drilled in conformance with 30 CFR 221.20. In the Salt Creek Field in the South Salt Creek Unit, located adjacent to the northwestern boundary of Navay Petroleum Reserve No. 3, there are 63 Federal producing wells (Second Wall Creek Sand) within one mile of the Reserve. In 1965 a secondary recovery water flood program was commenced in the South Salt Creek Unit. The U.S. Geological Survey on March 18, 1964 approved a plan of development for eight water injection wells located 50 feet from the Naval Petroleum Reserve No. 3 boundary for the purpose of obtaining the maximum ultimate recovery of oil under the leased lands. This development plan approval involved the U.S. Geological Survey giving the unit operator an exception to 30 CFR 221.20. The Navy objected to the drilling of the water injection wells located 50 feet from the Reserve boundary, and subsequently drilled 18 wells (Second Wall Creek sand) all located beyond 200 feet from the common boundary.

Through October 1973 the Navy has produced 1,183,471 barrels of oil from its secondary Wall Creek wells offsetting the South Salt Creek Unit area. There are 63 producing wells in the one mile buffer zone. Of these 63 wells, 13 are considered to be in the B–1 area which is the same area that the Navy produces from within Naval Petroleum Reserve No. 3. Cumulative production from these 13 wells as of September 1973 is 1,892,586 barrels of oil.

17. Question. Has the Justice Department reviewed the Joint Resolution submitted by the President on November 7 to assure that enactment of the Resolution would not result in abrogation of the contracts with Standard Oil of California?

Answer. The Joint Resolution was drafted in cooperation with the Justice Department. The Department has advised that its enactment would not result in abrogation of the contracts.

United States District Court, Northern District of California

UNITED STATES OF AMERICA, PLAINTIFF-APPELLANT

v.

STANDARD OIL COMPANY OF CALIFORNIA, A CORPORATION, DEFENDANT-APPELLEE

Civil 47940—William C. Frey (SC)

INDEX

STANDARD OIL CO. OF CALIFORNIA,
San Francisco, Calif., December 12, 1973.

Senator HOWARD W. CANNON,
Chairman, Subcommittee on National Stockpile and Naval Petroleum Reserves, Washington, D.C.

DEAR MR. CHAIRMAN: In accordance with your request, this letter formally confirms our Company's position, as stated in testimony before your Committee on December 10, 1973 by Mr. J. E. Gosline, that Standard will consider actions taken by Navy pursuant to Senate Joint Resolution 176 as entirely in conformance with the express provisions for authorization of production for defense purposes required by the Unit Plan Contract between Navy and Standard. Standard would not view any such Navy actions as possible grounds for termination of the Unit Plan Contract.

We assume, of course, that any production under said Joint Resolution, if approved, would be shared by Navy and Standard in accordance with the provisions of the Unit Plan Contract.

Respectfully,

L. T. VICE.

○