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REPORT BY THE

113677

Comptroller General

OF THE UNITED STATES

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Using Elk Hills And Alaskan North Slope Oil To Supply The Strategic Petroleum Reserve

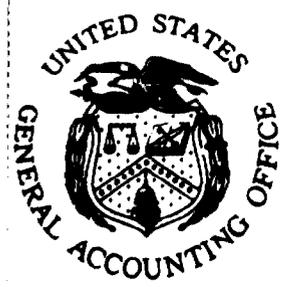
The Chairman, Subcommittee on Limitations of Contracted and Delegated Authority, Senate Committee on the Judiciary, raised questions about the feasibility of using crude oil from the federally owned Elk Hills Naval Petroleum Reserve and the Alaskan North Slope for the Strategic Petroleum Reserve.



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The Department of Energy has recently taken actions to allow their use by soliciting for 100,000 barrels a day of oil for the reserve in exchange for a like quantity of Elk Hills oil. The solicitation now allows for suppliers of Alaskan oil to respond.

Because of the high priority of obtaining oil as soon as possible for the reserve, GAO recommends that the Secretary of Energy issue an open solicitation to select those sources which most nearly meet the Government's objectives. This should encourage the availability of a wide range of sources including Elk Hills and the Alaskan Slope oil.



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OCTOBER 21, 1980

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

B-200780

The Honorable Max S. Baucus
Chairman, Subcommittee on
Limitations of Contracted
and Delegated Authority
Committee on the Judiciary
United States Senate

Dear Mr. Chairman:

Your letter of April 14, 1980 (see appendix II), expressed concern that the Department of Energy (DOE) was not actively attempting to fill the Strategic Petroleum Reserve (SPR), and noted that two available, domestic sources of crude oil from the Alaskan North Slope and Elk Hills Naval Petroleum Reserve could be used for that purpose.

You requested that we determine why these domestic sources of crude oil were not used for the SPR, whether they could be used for the SPR, what effect such purchases would have on the U.S. balance of payments, and our recommendations concerning such purchases. Appendix I contains our responses to these questions.

This review assesses the feasibility of acquiring Elk Hills and Alaskan North Slope oil for the SPR and discusses some factors which must be considered in using these sources--supply potential and quality, transportation requirements, and impact on refiners. We did not analyze and compare all potential domestic oil supply options for the SPR nor did we analyze the optimum rate and timing of oil fill for the SPR.

Our review covered the period May 4, 1980, to October 7, 1980. We interviewed DOE officials and reviewed legislation, publications, studies, and DOE program documents pertinent to the acquisition of Elk Hills and Alaskan North Slope oil for the SPR program. We discussed these issues with officials in the Department of the Treasury, the Department of Commerce's Maritime Administration, the Alaska Department of Natural Resources, the Independent Refiners Association of California, and major oil producers of Alaskan North Slope oil.

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The recently enacted Energy Security Act requires the President to resume filling the SPR at an average rate of at least 100,000 barrels a day (bbl/d) for fiscal year 1981 and succeeding years. This rate, however, was intended by the Congress to be a minimum and not the appropriate rate of injection. DOE has taken actions to meet the Energy Security Act minimum oil fill requirement by soliciting 100,000 bbl/d of oil for the SPR in exchange for Elk Hills oil. Although Elk Hills has the advantage of being an assured, high quality source of oil, this option may adversely affect the small and independent refiners in California.

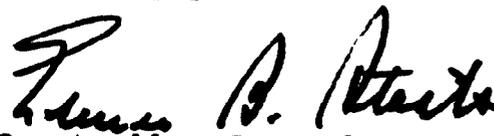
Another domestic oil supply option for filling the SPR is Alaskan North Slope oil. DOE has only recently included a specification in an exchange solicitation which would allow suppliers of this oil to respond. However, DOE officials would prefer storing higher quality oil if possible since they believe that during a supply interruption, higher quality oil would have a more universal application to U.S. refiners and would provide higher quality product yields.

Given the high priority of obtaining oil as soon as possible for the SPR, we believe DOE should aggressively pursue available sources of supply such as Elk Hills and Alaskan North Slope oil. We note, however, that in view of the factors affecting Elk Hills and Alaskan North Slope oil, it appears that neither of these sources is without problems. DOE has not completed its analysis of oil supply options for the SPR. As a result, DOE has not demonstrated that exchange of Elk Hills oil is the most effective means of meeting the minimum requirements of the Energy Security Act. The current Elk Hills exchange solicitation limits potential offerors to those (1) willing to acquire Elk Hills oil and (2) having access to a guaranteed source of crude oil for exchange. Accordingly, [we recommend that the Secretary of Energy issue an open solicitation for oil for the SPR, which will encourage the availability of a wide range of sources including Elk Hills and the Alaskan North Slope oil, in order to select those sources which most nearly meet the Government's objectives.]

At the request of your office, we did not obtain agency comments. Further, as arranged with your office, unless you publicly

announce its contents earlier, we plan no further distribution of this report until 30 days from the date of its issuance. At that time, we will send copies to interested parties and make copies available to others upon request.

Sincerely yours,

A handwritten signature in black ink, appearing to read "James A. Stacks". The signature is written in a cursive style with a large initial "J".

Comptroller General
of the United States

BACKGROUND

The Energy Policy and Conservation Act of 1975 (P.L. 94-163) authorized the creation of a Strategic Petroleum Reserve (SPR) to provide for storage of up to 1 billion barrels of crude oil. The Department of Energy (DOE) is implementing a three-phased plan to achieve a 750-million-barrel oil storage capacity. Phase I, essentially completed in December 1979, involved the development of five oil storage sites on the Gulf Coast in Texas and Louisiana with a total capacity of 248 million barrels. Phase II involves expansion of three of these sites to bring total storage capacity up to 538 million barrels by 1986. Phase III involves developing an additional site and expanding current sites to achieve the 750-million-barrel total capacity.

DOE has experienced serious difficulties in developing storage capacity for the SPR. In past reports ^{1/}, we commented on the technical problems associated with DOE's selection and preparation of existing caverns and mines for oil storage. DOE has taken steps to resolve many of these problems.

DOE has also been faced with complicating factors in acquiring oil for the SPR--only 92 million barrels of crude oil have been acquired and placed in storage. After a world oil shortage developed in early 1979, the United States and other Western countries agreed during a Tokyo, Japan, summit conference that no nation would purchase oil for stockpiling without consulting the others. These countries also agreed that oil purchases would not be made when they would place undue upward pressure on the world oil market price. Thus, because of the early 1979 world oil shortage and the Tokyo summit, DOE curtailed its SPR oil procurement.

The Congress has expressed its concern with DOE's SPR purchase policy. Title VIII of the recently enacted Energy Security Act (P.L. 96-294) requires DOE to acquire crude oil for the SPR at an average of at least 100,000 barrels per day (bbl/d) for fiscal year 1981 and for each fiscal year thereafter until the SPR is filled. The act restates the President's discretionary authority to use or exchange crude

^{1/}"Need to Minimize Risks of Using Salt Caverns for the Strategic Petroleum Reserve" (EMD-78-25, Jan. 9, 1978) and "Questionable Suitability of Certain Salt Caverns and Mines for the Strategic Petroleum Reserve" (EMD-78-65, Aug. 14, 1978).

oil received as royalties from production on Federal lands, and from the Naval Petroleum Reserve to fill the SPR. According to the conference committee's report on S. 932, the precursor of the Energy Security Act, the specified 100,000 bbl/d average fill rate is intended to be a minimum and is not to be considered the appropriate rate of injection. If only a 100,000 bbl/d rate is undertaken, the SPR will not reach 500 million barrels until 1992, some 10 years longer than was originally set forth in the law. The conference committee report also stated that high priority is to be given to the use of Federal royalty oil for the SPR.

The act requires that unless this minimum fill rate is achieved, crude oil from the Naval Petroleum Reserve cannot be sold or otherwise generally disposed of except to fill the SPR. Also, the act requires DOE to amend its entitlements program ^{1/} to enable the Government to only pay the lower tier crude oil price--about \$7 a barrel at current prices--for each barrel of oil purchased for the SPR.

On August 11, 1980, DOE's oil purchasing agent for the SPR, the Defense Fuel Supply Center, solicited offers for oil to fill the SPR in exchange for 100,000 bbl/d of oil from the Elk Hills Naval Petroleum Reserve. On October 1, 1980, DOE announced that it has accepted offers for the exchange of 65,000 bbl/d of Elk Hills oil. On October 3, 1980, Defense Fuel Supply Center resolicited for the remaining 35,000 bbl/d.

DOE is also considering other domestic oil supply options to augment the fill rate of the SPR. In September

^{1/}The entitlements program is designed to distribute the benefits of price controls on domestic crude oil among refiners, through the buying and selling of entitlements (defined as the right to refine a barrel of price-controlled domestic oil). Requiring refiners of less expensive controlled oil to buy entitlements and allowing refiners of more expensive decontrolled oil to sell entitlements generally results in refiners paying the national average composite price for their crude oil. In the past, DOE, by designating itself as a refiner for SPR oil purchases, paid the national average composite price. With the Energy Security Act amendment, DOE's acquisition price for the SPR will be reduced from the national average composite price of about \$24 a barrel to the lower tier price of \$7 a barrel at current prices.

1979, DOE undertook an examination of the potential for using domestic sources of crude oil for the SPR. A document "Revised SPR Crude Oil Acquisition Strategy" was prepared and released internally for comment on March 14, 1980. DOE is currently exploring these options in more detail. DOE has also issued the amendments to the entitlements program set forth in the Energy Security Act.

The following sections relate to the potential for using Elk Hills oil and Alaskan North Slope oil as supply sources for the SPR. It discusses supply potential and quality, transportation requirements, and impact on refiners related to use of this oil. We did not analyze and compare these two domestic sources of oil with all potential oil supply options.

ELK HILLS NAVAL PETROLEUM RESERVE OIL

Although Naval Petroleum Reserves exist at three different locations--Elk Hills and Buena Vista in California, and Teapot Dome in Wyoming--only one location, Elk Hills, with recoverable reserves of approximately 1 billion barrels, produces quantities that are significant in terms of SPR fill requirements. Current production from the Elk Hills reserve is about 160,000 bbl/d. The Government's share of this output is 80 percent or about 128,000 bbl/d (20 percent or about 32,000 bbl/d goes to Standard Oil of California--Chevron--, the producers of the reserve). Production is expected to peak in 1982 at 197,000 bbl/d.

The Elk Hills production comes from two different zones--the Stevens and the Shallow Oil Zones. The crude from the Stevens Zone is light, high quality crude oil $\frac{1}{2}$, whereas crude oil from the Shallow Oil Zone is heavy, lower quality crude oil. About two-thirds of the total production (about 114,000 bbl/d) comes from the Stevens Zone and about one-third from the Shallow Oil Zone (about 46,000 bbl/d). Since the

$\frac{1}{2}$ /Elk Hills production makes up almost 60 percent of California's production of very light crude oil--30 degrees American Petroleum Institute (API) gravity and above. API gravity is the measure of the mass of the fluid relative to water that ranges from about 10 degrees for very heavy crude oils to 45 degrees for very light crude oils.

Shallow Oil Zone is at peak production, the expected production increase at Elk Hills (37,000 bbl/d) will come from the Stevens Zone.

Why Elk Hills oil was not used for the SPR

DOE officials told us that the basis for the Government's initial decision not to acquire Elk Hills oil for storage in the SPR was contained in the Strategic Petroleum Reserve Plan. The plan, dated January 1977, stated that acquiring Elk Hills oil was not advantageous over the purchase policy the Federal Energy Administration (FEA) 1/ then chose to follow-- to purchase crude oil on the open market and use the entitlements program to acquire it at a price near the national average composite price. The plan stated that since Elk Hills oil was sold competitively at uncontrolled prices and was located at a great distance from the SPR storage facilities, it was more cost-effective for the Government to continue to sell the Elk Hills oil on the market, thus providing revenues which reduced the total Federal outlays. This cost advantage still exists. However, since early 1979, when foreign oil supplies were curtailed, the availability of supplies for the SPR has become the principal issue.

Can Elk Hills be used for the SPR?

Since 1975, DOE has had the legislative authority to use Elk Hills oil for the SPR. The Energy Policy and Conservation Act of 1975 authorized the Secretary of Energy to place in storage, transport, or exchange crude oil produced from Elk Hills. Also, the Naval Petroleum Reserve Production Act of 1976 (P.L. 94-258) provides authority for Elk Hills oil to be placed in SPR storage directly or through exchange agreements, if so directed by the President. The Energy Security Act reiterates this authority and stipulates that Elk Hills oil cannot be sold or otherwise generally disposed of for any purpose other than for the SPR unless SPR oil acquisition and injection activities are being undertaken at a level to assure the minimum 100,000 bbl/d average requirement.

1/The functions of the Federal Energy Administration were assigned to DOE on Oct. 1, 1977, pursuant to the Department of Energy Organization Act (P.L. 94-91).

DOE identified several factors to be considered in using Elk Hills oil for the SPR and discussed these factors in its March 14, 1980, document, "Revised SPR Crude Oil Acquisition Strategy." The following sections discuss these factors.

Recipients of Elk Hills crude oil

The Government's share of Elk Hills crude oil is presently sold to several refiners. Of this Government share, DOE, under authority of the Naval Petroleum Reserve Production Act, has been setting aside 25 percent for small refiners 1/ who provide certified data to DOE demonstrating that they cannot obtain adequate sources of supply.

The latest contracts for sales of Elk Hills oil were awarded to 15 refiners (12 small and independent refiners 2/ and 3 major refiners) and 3 traders. 3/ The contracts were originally for the period February through August 1980 and were then extended to December 1, 1980. However, two companies--Atlantic Richfield Company and Pacific Refining Company--receiving 25,000 bbl/d and 10,000 bbl/d, have requested and received cancellations of their contracts with DOE effective November 2, 1980, and November 14, 1980, respectively. Also, Pacific made an agreement with DOE that during the last 75 days of the contract period, September 1 to November 14, it would deliver its 10,000 bbl/d of Elk Hills oil to an SPR site. Because of a refinery closing, Pacific could no longer use the Elk Hills oil.

Transport facilities

Most of the Government's share of Elk Hills crude oil production is sold and delivered to California refiners by pipelines and tanker trucks. Pipeline capacity from Elk Hills to

1/A "small refiner," as defined in the Naval Petroleum Reserve Production Act in accordance with the Small Business Administration classification, has under 45,000 bbl/d of capacity.

2/Independent refiners engage in refining only, while major oil companies are engaged in other areas such as production and marketing.

3/Traders do not own refineries. Their business is to buy oil and then resell it.

various destinations is 212,000 bbl/d. In addition, up to 24,000 bbl/d can be transported by tanker trucks to local refiners. A portion of the pipeline crude goes eastward to Bakersfield, and the rest goes to refineries at Los Angeles and San Francisco (see map on p. 7).

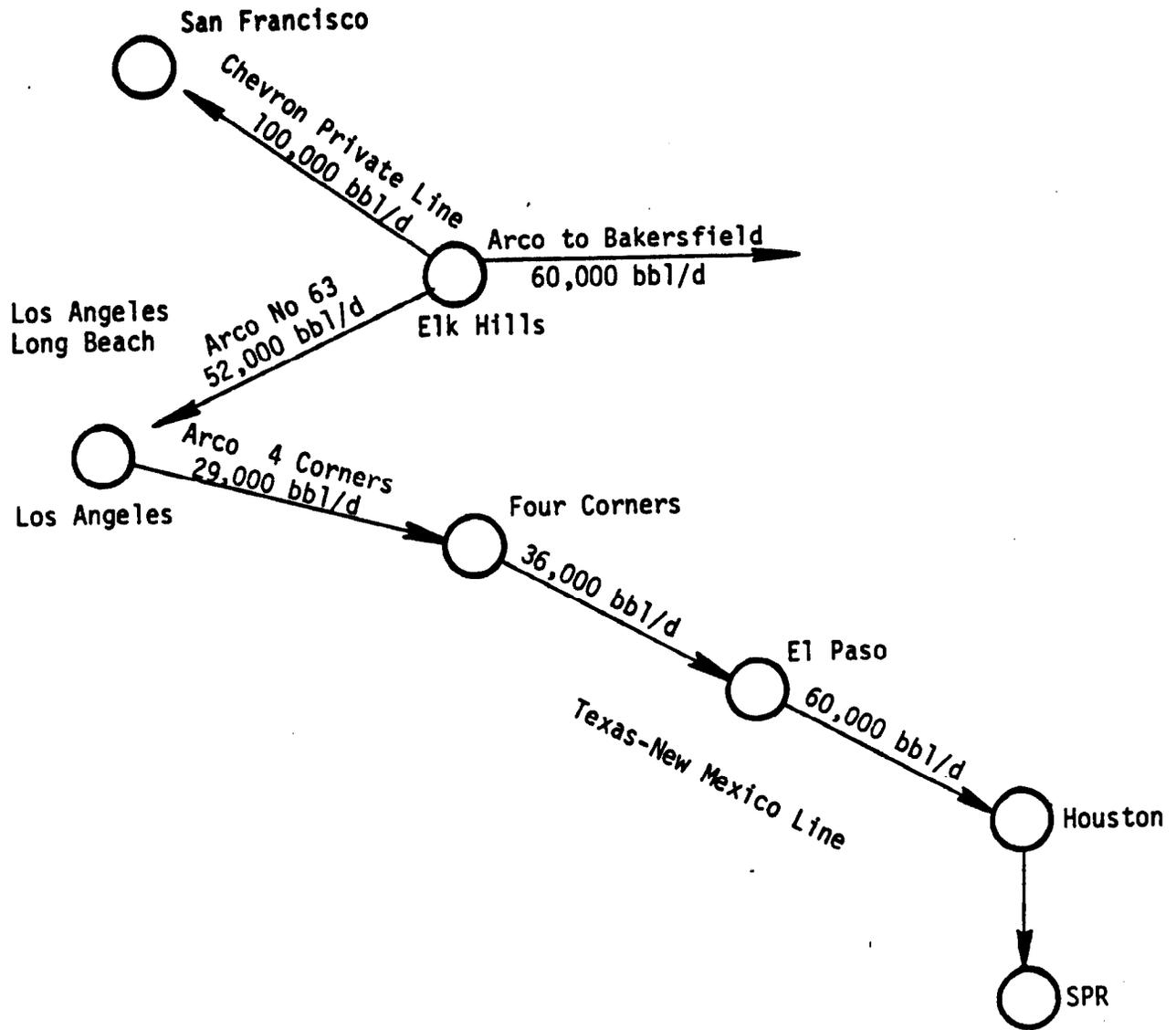
There is only limited capability to ship crude out of the Los Angeles and San Francisco ports. Except for a 15,000 bbl/d onloading facility near Los Angeles, the facilities at these ports are constructed for receipt of crude oil only. Building new facilities would be costly and could require considerable time to comply with Federal and State air quality standards. Therefore, current interest centers on pipeline transportation alternatives. At present, as the map on page 7 indicates, the only possible route to pipe Elk Hills oil out of California to the Gulf Coast area is the Four Corners pipeline connecting to the Texas-New Mexico pipeline which presently carries 20,000 bbl/d of Elk Hills oil.

The capacity of the Four Corners pipeline is 29,000 bbl/d and is expected to increase to 40,000 bbl/d in 1980. In addition, there are plans to further increase capacity to 75,000 bbl/d by the beginning of 1982. The Texas-New Mexico line, which originates in the Four Corners area and flows south to Texas, currently has a capacity of only 36,000 bbl/d. If the Four Corners pipeline is expanded as planned, the Texas-New Mexico pipeline will probably also be expanded. Because both the Four Corners pipeline and the Texas-New Mexico pipeline are common carriers, the amount of crude oil which could be transported to the SPR would be uncertain, since DOE would have to compete with others for the use of these pipelines. Therefore, this may not be a very reliable means of transporting Elk Hills oil for storage in the SPR. Consequently, DOE believes that the preferred approach for using Elk Hills oil for the SPR is to exchange the Elk Hills oil in return for like quantities of other oil delivered to the SPR storage sites on the Gulf Coast.

Exchange alternatives

On August 11, 1980, the Defense Fuel Supply Center issued a competitive solicitation asking for oil for the SPR in exchange for 100,000 bbl/d of Elk Hills oil. On October 1, 1980, DOE announced that offers for the exchange of 65,000 bbl/d had been accepted. Since acceptable offers were not received for the full 100,000 bbl/d, on October 3, 1980, the Defense Fuel Supply Center resolicited for the remaining 35,000 bbl/d. In the event that responsive offers on the

Existing Elk Hills Crude Oil
Pipeline Transportation Network



Source: Department of Energy, "Revised SPR Crude Oil Acquisition Strategy," March 14, 1980.

new solicitation are not received, the alternative is a regulatory approach to require private-sector deliveries of oil to the SPR in exchange for Elk Hills oil.

Competitive exchange

A competitive exchange involves requesting offers from private firms to exchange oil for a quantity of Elk Hills oil. Negotiations for the remaining 35,000 bbl/d will be conducted with all offerors within the competitive range to be determined by the Defense Fuel Supply Center and a slate of contracts awarded based on oil exchange ratios and other factors such as compatibility of the various proposals with SPR delivery and fill capabilities. Although offers to exchange a total in excess of the required 100,000 bbl/d were originally received, only offers for 65,000 bbl/d were accepted. A DOE official stated that the offers rejected were unacceptable due to the price requested and/or because the offeror could not guarantee the delivery rate specified.

Regulated exchange

DOE's authority under the Emergency Petroleum Allocation Act and the President's authority under the Naval Petroleum Reserve Production Act could be used to mandate an exchange for Elk Hills oil. For example, on August 8, 1980, DOE issued a notice of proposed rulemaking to amend its current mandatory allocation regulations which would require certain refiners to supply crude oil for the SPR. DOE is now evaluating industry responses to the proposed amendment to the regulations.

Both of these approaches require the development of a methodology for exchanging the oil on an equal-value basis, taking into account differing market values of crudes and transportation and location differentials. While the regulated approach could assure the desired quantity of oil needed for SPR fill, the competitive approach has the potential of offering supplies on more favorable terms to the Government.

Impact on refiners if Elk Hills oil is used for the SPR

Both the August 11, 1980, and the October 3, 1980, Elk Hills exchange solicitations require offerors to take a minimum of 5,000 bbl/d of Elk Hills production for a 1-year term and deliver an equivalent quantity to the SPR. According to the Independent Refiners Association of California, small and independent refiners do not have the petroleum supplies to participate in an exchange. Consequently, the Association argues this requirement will ultimately give control of the limited quantity, high quality Elk Hills oil to the major oil companies.

According to data provided by the Independent Refiners' Association of California, small and independent refiners received 66,057 barrels of the 127,465 barrels being produced daily at Elk Hills in 1980. By contrast, major companies bought only 29,365 bbl/d and traders bought the rest. The Association forecasts that all but about 30,000 bbl/d (the small refiners set-aside) of Elk Hills production would go to the major companies under an oil exchange plan.

The Association states that this Elk Hills oil may well stay in California since a number of major oil companies have California refinery operations. However, it questions how accessible that oil may be to the small and independent California refiners. The Association considers it highly unlikely that the majors would sell their competitors even a small portion of the high quality Elk Hills oil and if they were to sell these supplies, the price they might charge may be prohibitive.

ALASKAN NORTH SLOPE OIL

The majority of Alaskan crude oil is produced on the North Slope from the Prudhoe Bay reservoir. Current production has reached 1.5 million bbl/d, of which about 900,000 is currently delivered to the West Coast, 100,000 to the Virgin Islands, and 500,000 bbl/d to the Gulf Coast via the Panama Canal.

Alaskan North Slope production is privately owned and distributed primarily by U.S. oil companies and their subsidiaries. However, because significant production occurs on Alaska lands, the State collects a 12.5-percent royalty in oil from this production--about 185,000 bbl/d.

Why Alaskan North Slope oil
was not used for the SPR

As stated in our March 22, 1979, report "Information on Department of Energy's Management of the Strategic Petroleum Reserve" (EMD-79-49), DOE has not used Alaskan North Slope oil in the past for the following reasons:

- It did not meet DOE's existing crude oil specifications for the SPR.
- The requirements of the Merchant Marine Act, which stated that no oil shall be transported between points in the United States in any other tanker than a United States owned and built tanker, could not be met.

Specifications for oil to be stored in the SPR had been established for, among other things, API gravity, sulfur content, and desired refining yields. According to a DOE official, a 1978 test of the Alaskan North Slope oil determined that although the sulfur content was comparable to the SPR specifications, the API gravity and expected refinery yields were not.

The Merchant Marine Act of 1920 (P.L. 66-261) requires that no oil shall be transported between points in the United States, either directly or via a foreign port or for any part of the transportation, on any other tanker than a tanker built in and documented under the laws of the United States and owned by persons who are citizens of the United States.

Large U.S. tankers can be used to transport oil from Alaska to Panama, but small tankers (80,000 dead weight tons or less) are required to transport the oil through the Panama Canal to the Gulf Coast. At the time of our March 1979 report, DOE officials contended that although sufficient large U.S. tankers existed to transport the oil to Panama, there would not be enough small U.S. tankers available to transport the oil through the canal to the Gulf Coast.

In August 1980, we discussed these conditions with DOE and the Maritime Administration officials who told us that the Alaskan North Slope oil could potentially be used for the SPR. The Department issued its October 3, 1980, resolicitation which includes specifications allowing suppliers of this oil to respond. DOE officials stated that they would prefer to continue using higher quality oil, if available, since they believe that during an oil supply

interruption, higher quality oil would have a more universal application to U.S. refiners and would provide higher quality product yields. In addition, while DOE officials initially believed that separate facilities should be designated to store Alaskan oil, DOE recently investigated the feasibility of blending Alaskan North Slope oil with other crude oil and, according to a DOE official, found that it is feasible to store Alaskan oil with other crude oil.

Also, the transportation network for moving 500,000 bbl/d of crude from the Alaskan North Slope to the Gulf Coast is now in place. Very large crude carriers pick up the oil at the end of the pipeline in Valdez, Alaska, and transport it to the Panama Canal. The oil is then transferred to available smaller U.S.-flag tankers which transport it through the canal to ports on the Gulf Coast.

Can Alaskan North Slope oil
be procured for the SPR?

Explicit legislative authority was provided to acquire Elk Hills oil for the SPR; similar authority is not needed for the acquisition of Alaskan oil. The Government could procure the oil through competitive solicitation. In its March 1980 oil purchase strategy document, DOE discussed what must be considered prior to attempting to procure this oil. These are presented below.

Alaskan North Slope
crude ownership

There are 16 companies producing the 1.5 million bbl/d of Alaskan North Slope oil. Three companies--Sohio, with production of about 800,000 bbl/d, and Arco and Exxon, with production of about 300,000 bbl/d each--produce over 93 percent of the total. Each of the other producers make up 2 percent or less of the production.

Sohio has its refineries in the upper Midwest and, as a consequence, has been marketing its Alaskan crude on the West Coast or the Gulf Coast. About one-third of the Sohio Alaskan crude is sold to Chevron on the West Coast. The remainder is either sold to Amerada Hess in the Virgin Islands or shipped to the Gulf Coast via the Panama Canal.

Arco has two refineries on the West Coast capable of handling a total of 285,000 bbl/d and sends almost all of its Alaskan crude to these refineries. Exxon has a refinery

in California with a capacity of 90,000 bbl/d. The remaining 210,000 bbl/d is either sold or exchanged on the West Coast with other refiners, or it is shipped to the Exxon Gulf Coast refineries, depending upon Exxon's needs and the economics of the situation.

In regard to the sale of the State's 185,000 bbl/d of royalty oil, about 110,000 bbl/d is already committed under long-term contracts, but about 85,000 bbl/d is currently uncommitted and might be obtained through negotiations with the State of Alaska. An Alaskan Department of Natural Resources official indicated that the State will offer the uncommitted amount in public auction in spring 1981.

Impact on refiners if
Alaskan North Slope oil
is procured to fill the SPR

The economic impacts of obtaining Alaskan oil for SPR storage will depend upon the size and economic situation of the refiners receiving the oil. Because these refiners are generally large refiners, they would not be eligible for crude supplies from the Buy/Sell program. ^{1/} Consequently, they would have to go to the marketplace for replacement supplies.

It is uncertain what impact, if any, the storage of Alaskan North Slope oil will have on U.S. refiners during a supply interruption. Although DOE officials believe that Alaskan North Slope oil would have a less universal application to U.S. refineries under an oil supply interruption, no study has been performed to date by DOE analyzing the ability of U.S. refineries to process this oil. However, a DOE official stated that U.S. refineries, to date, have been able to use this oil to a greater extent than anticipated in 1977, when the quality specifications for the SPR were first developed. The official further stated that, in the future, U.S. refineries will need to adjust to decreasing availability of light, high quality crude oil.

^{1/}The purpose of the Buy/Sell program is to correct imbalances in access to crude that exist between the 15 major integrated refiners (refiner/sellers) and small and independent refiners (refiner/buyers). The program ensures that refiner/buyers obtain oil at the refiner/sellers' average imported crude acquisition cost.

BALANCE OF TRADE IMPACT

Oil purchases for the SPR, regardless of whether such purchases are from domestic or foreign sources, will probably increase the U.S. balance of trade deficit. During 1977 and 1978, our balance of trade deficit was increased by approximately \$376.5 million and \$557.2 million, respectively, due to purchases of foreign oil for the SPR. If DOE acquires Elk Hills or Alaskan North Slope oil for the SPR, a balance of trade deficit would occur to the extent U.S. refiners have to replace their former domestic purchases with imported oil.

Officials of DOE and the Treasury Department stated that calculations had not been made by their departments to show the effect of resumption of SPR purchases on balance of trade. However, they believe that a rough estimate could be obtained by multiplying the number of barrels of imported oil that must be purchased to replace the domestic oil going to the SPR by the current average Organization of Petroleum Exporting Countries price. For example, an average of 100,000 barrels per day at \$32.00 a barrel would increase the balance of trade deficit by \$3.2 million a day, or a total of about \$1.2 billion for fiscal year 1981. The ultimate deficit may be reduced if some of these funds flow back to the United States to purchase U.S. goods.

Although SPR purchases will increase the balance of trade deficit over what it would be otherwise, future increases in domestic oil production and/or decreases in energy demand could reduce the deficit. However, based on our report, "Oil and Natural Gas from Alaska, Canada, and Mexico--Only Limited Help for the U.S." (EMD-80-72, Sept. 11, 1980), in spite of increased drilling efforts, we expect domestic production to decline to about 8 million bbl/d by 1990 and then rise slightly from 1990 into the next century. The gap between domestic production (10.1 million bbl/d) and consumption of petroleum products (18.7 million bbl/d in 1978) is expected to widen, even in the event that energy consumption never exceeds 1978 levels. Under this set of assumptions, demand for imported oil can be expected to increase by about 2 million bbl/d by 1990 even if consumption holds constant, due to the decline in domestic production. Thus, it would appear that the oil used for SPR fill will create a need for additional imports, and cause a larger balance of trade deficit.

OBSERVATIONS AND CONCLUSIONS

The United States imports almost 50 percent of its petroleum supplies and, therefore, is likely to be extremely vulnerable to interruptions of these imports until alternative domestic supplies are available. Such interruptions can adversely affect our national security, economy, and foreign policy options. A Strategic Petroleum Reserve can help to mitigate these impacts. Although the SPR program was established in December 1975 and its goals called for 500 million barrels in storage by December 1980, it presently contains only 92 million barrels. The program has had many problems--one of the current problems involves oil supplies for the reserve.

The Congress expressed its concern about the SPR program in the recently enacted Energy Security Act, which requires the administration to resume filling the SPR. The act mandates an average fill rate of at least 100,000 bbl/d and restricts the use of Elk Hills oil to the SPR unless it is assured that acquisition and injection activities are being undertaken to meet the minimum requirement. DOE has taken actions to meet the minimum Energy Security Act requirement by soliciting for 100,000 bbl/d of oil for the SPR in exchange for a like quantity of Elk Hills oil. Although Elk Hills is federally owned oil, having the advantage of being an assured source of high quality supply, this option can adversely impact small and independent refiners in California.

Another domestic oil supply option for filling the SPR is Alaskan North Slope oil. DOE has only recently included specifications in its October 3, 1980, Elk Hills exchange solicitation allowing suppliers of this oil to respond. However, DOE officials would prefer storing higher quality oil if possible since they believe that during a supply interruption, higher quality oil would have a more universal application to U.S. refiners and would provide higher quality product yields.

Given the high priority of obtaining oil as soon as possible for the SPR, we believe DOE should aggressively pursue available sources of supply such as Elk Hills and Alaskan North Slope oil. We note, however, that in view of the factors affecting Elk Hills and Alaskan North Slope oil, it appears that neither of these sources is without problems. DOE has not completed its analysis of oil supply options for the SPR. As a result, DOE has not demonstrated that exchange of Elk Hills oil is the most effective means of meeting the minimum requirement of the Energy Security Act.

The current Elk Hills exchange solicitation limits potential offerors to those (1) willing to acquire Elk Hills oil and (2) having access to a guaranteed source of crude oil for exchange. Accordingly, we believe DOE should issue an open solicitation which will encourage the availability of a wide range of sources including Elk Hills and Alaskan North Slope oil, in order to select those sources which most nearly meet the Government's objectives.

RECOMMENDATION

We recommend that the Secretary of Energy issue an open solicitation for oil supplies for the Strategic Petroleum Reserve, to encourage the availability of a wide range of sources of supply from which to choose including Elk Hills and Alaskan North Slope oil.

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United States Senate

COMMITTEE ON THE JUDICIARY
 WASHINGTON, D.C. 20510

April 14, 1980

Honorable Elmer B. Staats
 Comptroller General
 General Accounting Office
 Washington, D. C. 20548

Dear Mr. Staats:

In a report dated March 22, 1979 (EMD-79-49), the General Accounting Office dealt with a number of questions bearing on how the Department of Energy manages the Strategic Petroleum Reserve. The report indicated poor progress was being made in fulfilling goals of setting up the Strategic Petroleum Reserve, all the SPR oil was being purchased from foreign sources, North Slope oil was not being used to fill up the reserve and other serious deficiencies existed.

Since that time, events have made creation of the entire reserve an even more vital national priority, for obvious reasons. Yet it does not seem that our government is pursuing an active policy of filling the reserve. No sense of urgency is evident.

There are two available, unutilized domestic sources of crude oil that could be used to meet storage goals: North Slope and Elk Hills, California. In each case the fields are mapped, most wells are already in place and production is immediately available for storage. None of this oil is entering the Strategic Petroleum Reserve. Therefore, I seek answers to the following questions:

1. Why is no North Slope oil being used to fill up the SPR?
2. Why is no Elk Hills Federal oil being used to fill up the SPR?
3. Could such oil from these two sources be used for the SPR?
4. Could purchase of North Slope oil and use of Federal Elk Hills oil effectively assist in creation of the SPR?
5. Do you recommend for or against use of North Slope oil to fill the SPR?

Honorable Elmer B. Staats
Page Two

6. Do you recommend for or against use of Elk Hills Federal oil to fill the SPR?
7. How would purchase and use of such domestic oil, much of it already Federally owned, for the SPR, do to our balance of payments?

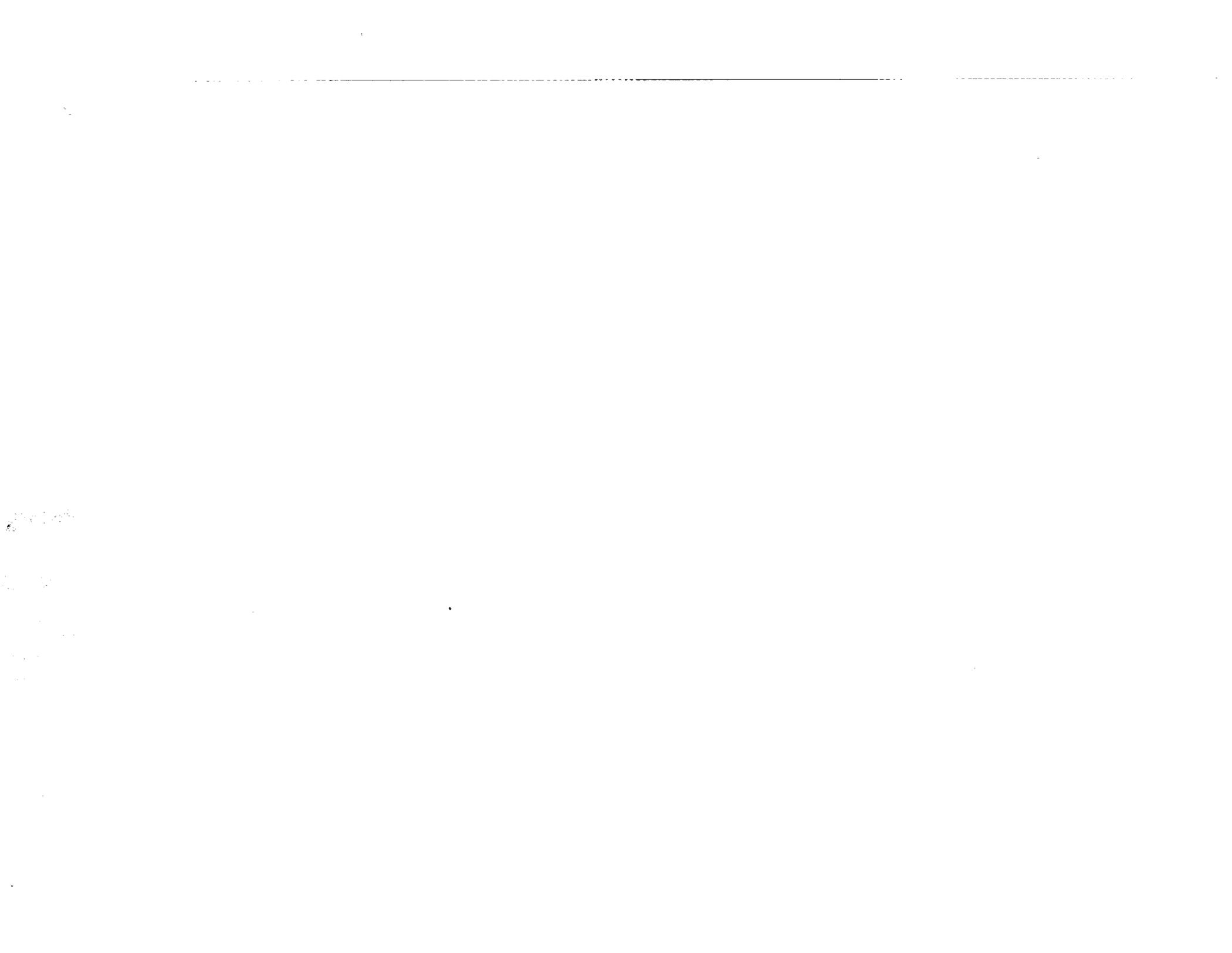
I believe the present and impending world energy situation requires swift, definitive action regarding the SPR. Your answers to these questions in the form of a report to me would go a long way towards giving Congress information it needs to act in an informed manner. Please let me hear from you soon on this request. Thank you.

Sincerely,



Max Baucus, Chairman
Subcommittee on Limitations of
Contracted and Delegated Authority

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