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GAO

Report to the Secretary of Energy

May 1986

STRATEGIC PETROLEUM RESERVE

Low Oil Prices Favor Increased Purchases

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United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

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May 22, 1986

The Honorable John S. Herrington
The Secretary of Energy

Dear Mr. Secretary:

The General Accounting Office (GAO) has closely followed the development of the Strategic Petroleum Reserve (SPR) since its inception in 1976. During this time, the Department of Energy (DOE) has had the full support of the Congress in its efforts to develop and fill the SPR. Beginning in 1985, however, the administration initiated action through the budget process that would slow the future development of the SPR and indefinitely defer the completion of its agreed-on 750-million-barrel capacity. The moratorium on SPR development and oil fill proposed in the fiscal year 1986 budget—and subsequently rejected by the Congress—was proposed again in the fiscal year 1987 budget. Although final action on the budget has yet to be taken, it seems clear by the approval of the Consolidated Omnibus Budget Reconciliation Act of 1985 that an SPR moratorium is not in accord with past and current congresssional thinking regarding the nation's need for an emergency supply of crude oil.[1]

DOE plans to stop filling the SPR in July 1986 as both a budget-cutting measure and because it believes sufficient oil will be stored to meet a 90-day contingency supply commitment to cover import disruptions. In July, the SPR will have an inventory level of 502 million barrels of oil, which meets the 90-day supply commitment. However, if imports increase as expected, a larger inventory will be needed to meet the commitment. DOE officials have not scheduled resumption of oil purchases after July.

In our opinion, suspending oil purchases does not appear to be prudent given the present circumstances of (1) low oil prices, which are not expected to hold indefinitely, (2) nearly $580 million in the oil account, and (3) storage capacity which is or can be made available. Based on our assessment, we believe that filling the SPR should continue at maximum rates to attain the statutory requirement for a 527-million-barrel inventory.

[1] The Consolidated Omnibus Budget Reconciliation Act of 1985 requires that at least 527 million barrels of oil be stored by 1988 and that the SPR be filled at a minimum rate of 35,000 barrels per day in fiscal years 1986, 1987, and 1988.

We also believe that, because of the relatively small cost of leaching and injecting oil into the caverns and the prospect of rapidly increasing import levels, DOE should resume SPR storage capacity development and continue oil purchases beyond 527 million barrels taking into account expected oil prices and the status of oil import levels. About 73 million barrels of additional storage capacity could be made available in fiscal year 1987 with currently appropriated funds. This would provide the SPR with 600 million barrels of capacity. Filling this additional capacity, however, would require funds for oil purchases beyond the amounts already appropriated. Details supporting our position are given below.

Current and Projected Oil Prices and DOE Acquisition Policy

Since October 1, 1985, DOE has been buying all of its oil for the SPR from Mexico under a long-term contract to provide up to 50,000 barrels per day through the end of August 1986. In November 1985, just prior to the start of the current decline in oil prices, DOE paid $30 per barrel for Mexico's Isthmus sour crude oil. On March 31, 1986, the Isthmus sour crude oil was purchased for $11.37 per barrel. However, despite current low prices, future oil prices are generally uncertain and are affected by various factors. As a result, it is difficult to say what future prices will be; over the next year, the market is expected to remain somewhat volatile. Although some oil analysts expect the price of crude oil to continue to decline, a more general consensus is that by the end of 1986—or possibly early 1987—prices will tend to increase to the $14 to $16 range. Looking further to the future, analysts and oil company officials generally believe that oil prices are likely to move beyond that level by the early 1990's.

Despite declining oil prices, DOE has maintained its oil purchases through the fiscal year at a relatively low level—about 47,000 barrels per day. Further, we were recently informed by DOE officials that the SPR will continue to be filled at about the same rate until July 1986 when it will contain about 502 million barrels of oil. Additional oil purchases will then be suspended until fiscal year 1987. DOE has no schedule for resuming oil purchases. At the 502-million-barrel level, DOE will have added about 12.7 million barrels to the SPR in fiscal year 1986. When these purchases are averaged over the entire fiscal year, DOE will have filled the SPR at the minimum rate required by the Consolidated Omnibus Budget Reconciliation Act of 1985.

Unfilled Storage Capacity Exists at SPR Sites

Sufficient capacity currently exists at the SPR to store additional quantities of oil. According to DOE officials, the SPR sites have 511.5 million barrels of permanent storage capacity available. Stopping oil fill at 502 million barrels will leave 9.5 million barrels of unused capacity. In addition, DOE could store an additional 19 million barrels of oil in completed caverns for as long as 20 years.[2] This combination of permanent and long-term storage capacity would allow DOE to add up to 28.5 million barrels of additional oil to the SPR even if the cavern leaching program was not restarted in the near term.

However, DOE would not necessarily have to use its long-term storage capability. Within 4 months of resuming full-scale leaching at the West Hackberry and Bryan Mound sites, an additional 15.4 million barrels of capacity could be available. Consequently, if leaching were resumed on June 1, 1986, DOE would have enough capacity by September 30, 1986, to permanently store the required 527 million barrels of oil. Also, under a post-moratorium leaching schedule for West Hackberry and Bryan Mound,[3] and the scheduled completion date for cavern 17 at the Bayou Choctaw site,[4] an additional 73 million barrels—or a total of 600 million barrels—of permanent and long-term storage capacity would be available by the end of fiscal year 1987.

DOE's site management, operation, and maintenance contractor currently has about the same complement of staff at each site as it had when the leach-fill activities were ongoing. As a result, the incremental costs of developing more capacity and injecting oil are relatively small—primarily electric power costs for operating the pumps and some additional maintenance work. DOE currently estimates the incremental cost to leach storage capacity to be 45 cents per barrel at the Bryan Mound site and 35 cents per barrel at the West Hackberry site. Oil injection costs are estimated to be about 10 cents per barrel. Based on the remaining capacity to be leached, 600 million barrels of storage capacity could be made available at an incremental cost of about $15 million. About $7 million would be needed for oil injection costs.

[2]Each Phase II and III cavern is leached to about 11.2 million barrels. Ten million barrels is considered permanent oil storage with a 1.2 million barrel sump space. About 400,000 barrels of oil can be stored in this sump space for up to 20 years and an additional 200,000 barrels can be temporarily stored for 1 to 3 years.

[3]DOE stopped all leaching activities at SPR storage sites on December 31, 1985.

[4]This leached 10-million-barrel cavern was obtained from Allied Chemical Corporation in 1985 and is currently being prepared for oil fill.

In addition, the SPR's storage capacity potential will support a much higher fill rate than the current 47,000 barrels per day. Even with the West Hackberry brine disposal line temporarily out of service, currently DOE can inject oil into the West Hackberry storage caverns at about 60,000 barrels per day. When the brine disposal line is back in service and full leaching capability is restored, the fill rate can be increased to an annual average of over 150,000 barrels per day. The oil injection rate at the Bryan Mound site will be comparable to that at West Hackberry as the leach-fill process is resumed for the last of the phase III caverns and final oil fill occurs.

Funds Are Available for SPR Capacity Development and SPR Oil Acquisitions

Sufficient funding is available to resume leaching activities and continue oil purchases. As of March 31, 1986, DOE's facilities development and management account included $197.9 million of unobligated but deferred funds. On April 11, 1986, the Office of Management and Budget (OMB) made available for obligation $156.8 million of the deferred funds for the restart of construction activities that had been terminated in January 1986. Part of the remaining $41.1 million could be released by OMB and made available to fund the $15 million needed to complete SPR leaching to the 600-million-barrel level.

As of March 31, 1986, DOE's SPR oil account contained an estimated $644 million in unobligated funds. About $66 million was available for oil purchases and $578 million had been deferred. At the current price of $13 per barrel, it would cost about $65 million to fill the SPR to the 502-million-barrel level, leaving about $579 million for future purchases if the deferred funds are released. If oil prices continue at current levels, DOE could buy the additional oil needed to bring the SPR inventory to 527 million barrels for about $325 million. At DOE's estimated average oil injection rate for the West Hackberry and Bryan Mound sites, the 527-million-barrel inventory could be reached by early fiscal year 1987.

After the 527-million-barrel inventory is reached, DOE would have about $254 million in unobligated funds available for continued oil purchases. If oil prices increase to $15 per barrel as anticipated, these unobligated funds could purchase an additional 17 million barrels of oil for a total of 544 million barrels. DOE would need an appropriation of about $840 million to purchase the additional 56 million barrels needed to complete the oil fill to the 600-million-barrel level.

The uncertainty of oil prices over the next year makes the above SPR oil addition estimates tentative. A $2 per barrel increase from a $13 base price, for example, reduces the quantity that could be purchased with available funds by about 6 million barrels. Conversely, a $2 per barrel drop in price would increase the quantity that could be purchased by about 8 million barrels. While the current price volatility makes it difficult to optimize SPR oil purchases, the availability of storage capacity provides a measure of flexibility to DOE so that oil purchases could be adjusted to take advantage of low oil prices.

Relationship Between SPR Size and Import Levels Is Expected to Change

The administration has based its decision to limit SPR oil fill, in part, on the relationship that exists between the quantity of oil in the SPR and the need to maintain enough oil to cover 90 days of imports in accordance with the U.S. commitment to the International Energy Agency. As the administration points out, a 502-million-barrel SPR is enough to cover in excess of 100 days of imports at the 1985 level. Low oil prices, however, are expected to result in increased consumption and some loss of domestic production, which is expected to lead to increases in crude oil imports. Based on DOE's energy outlook projections, analysts expect net oil imports to rise to about 6 million barrels per day in 1987 based on a price of $20 per barrel. This represents about a 46 percent increase over 1985 imports. Import levels could be even higher if prices stay below $20. At the 6-million-barrel-per-day import level, DOE would have to fill the SPR to about 540 million barrels to meet a 90-day supply commitment—about 13 million barrels more than the current requirement for 527 million barrels. At the maximum oil injection rate of 300,000 barrels per day, it would take less than 2 months to add these 13 million barrels of oil to a 527-million-barrel SPR. A 600-million-barrel SPR would support import levels of up to 6.7 million barrels per day.

We recognize that events such as an Organization of Petroleum Exporting Countries (OPEC) agreement on production limits or increased military hostilities in the Middle East could change the world oil supply picture. It is the general view, however, that oil imports will increase and that in 5 to 10 years OPEC will likely be in a stronger position because of its large oil reserves. The latest estimates of free world oil reserves indicate that about two-thirds are located in the Middle East.

Conclusions

Despite continued congressional support for a 750-million-barrel SPR, DOE has slowed its efforts to continue developing and filling the SPR. DOE stopped all cavern leaching at the end of December 1985 and plans to stop further oil fill after July 1986 when the SPR will contain 502 million barrels of crude oil. This action is based primarily on budgetary constraints, but DOE also points out that a 502-million-barrel SPR more than meets the need to maintain enough oil reserves to cover 90 days of imports.

The statutory requirement that the SPR be filled to at least 527 million barrels by fiscal year 1988, coupled with the recent drop in oil prices, the expected loss of some domestic production with an increased dependence on imported oil, and the expectation that oil prices will increase in the future, raises questions about the prudence of DOE's decision on SPR development and oil fill. In our opinion, the current level of crude oil prices, the availability of storage capacity, and nearly $580 million in unobligated oil account funds provide DOE an opportunity to continue acquiring SPR oil and meet its statutory requirement to fill the SPR to 527 million barrels at low cost and with no additional appropriations. Furthermore, we believe that DOE needs to take advantage of the opportunity to increase its SPR storage capacity to 600 million barrels within a relatively short time and at low cost. This additional capacity would allow DOE to continue filling the SPR beyond the 527-million-barrel level as needed to balance reserve supplies with import levels.

While we recognize that budget cutting is a major concern, we believe it is shortsighted to suspend oil purchases at the 502-million-barrel level at this time.

Recommendations

We recommend that the Secretary of Energy direct the SPR project manager to:

- Continue oil purchases at maximum fill rates beyond the July 1986 cut off date and attain the 527-million-barrel inventory level.
- Resume cavern leaching activities as soon as possible with the objective of having 600 million barrels of capacity available by the end of fiscal year 1987.
- Continue filling the SPR beyond the 527-million-barrel level at rates commensurate with oil prices, import levels, and availability of funding and storage capacity.

We further recommend that, in order to undertake the above steps, the Secretary request Office of Management and Budget approval to release whatever amount of the deferred funds is needed.

As you know, 31 U.S.C. 720 requires the head of a federal agency to submit a written statement on actions taken on our recommendations to the Senate Committee on Governmental Affairs and the House Committee on Government Operations not later than 60 days after the date of this letter, and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the letter.

Copies of this letter are being sent to the Director, Office of Management and Budget; the Chairmen of the House and Senate budget and oversight committees; interested committees and Members of Congress; and other interested parties.

Sincerely yours,

J. Dexter Peach
Director

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