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Subcommittee on Fossil and **Synthetic** Fuels  
Committee on Energy and Commerce  
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Mr. Chairman, I am pleased to appear before this Subcommittee to discuss the status of the Naval Petroleum Reserve (NPR) and the consequences of alternative production decisions. In my remarks today, I will address the following issues:

- o The current status of the NPR;
- o Alternatives to the present production schedule;
- o The role of the NPR in international and domestic oil markets;
- o The strategic implications of the NPR; and
- o The budgetary impact of NPR production options.

#### Current Status of the NPR

The Naval Petroleum Reserve consists of federally held oil reserves at Elk Hills and Buena Vista, California (NPR 1 and 2), and Teapot Dome, Wyoming (NPR 3). These reserves currently produce about 180,000 barrels per day of crude oil, and over 300 million cubic feet of gas daily, of which 75 percent is **reinjecte**d and 25 percent sold. The Standard Oil Company of California (Chevron) is a **co-owner** of about twenty percent of the Elk Hills reserve. The NPR oil fields contain ultimately recoverable reserves of about 980 **million** barrels.

Under the Naval Petroleum Reserve Production Act of 1976 (Public Law **94-258**), production was reopened at the primary field, NPR 1, for the first time since World War II. The NPR 3 development program was initiated at the same time, but it is a much smaller reserve, producing about 3,500 barrels per day. NPR 2 has been leased and produced continuously since 1921.

The 1976 act provides that the NPR be produced at the maximum efficient rate (**MER**) consistent with good engineering practices. Producing at this rate would result in a production peak of about 190,000 barrels per day in fiscal year 1982, declining to about 80,000 barrels per day in 1990 and 30,000 barrels per day by fiscal year 2000. This production decline would probably average about 10 percent per year. At this rate, about 60 percent (600 million barrels) of the ultimately recoverable reserves would be produced by the year 2000.

However, Public Law **94-258** limited production to the six-year period that ends in April 1982. This period can be extended if the President finds continued production to be in the national interest. Such a finding has been made, and on October 6, 1981 the President notified the Congress that production should continue for three additional years. The Congress now has the prerogative of overriding the President's recommendation, thereby

terminating production, or of allowing it to stand, thereby continuing at the maximum efficient rate for three more years.

### NPR Production Alternatives

Two basic alternatives to continued production at the NPR are available: shutting down production completely, or reducing production to some level below the maximum efficient rate. With regard to the first, efficient oil production from the NPR requires management of water, gas, and oil pressures in complex subsurface geologic formations. Shutting production down entirely by capping the wells could result in water and gas invasion and oil migration that could render some of the oil unrecoverable. Such reservoir changes would not only reduce the ultimately recoverable quantity of **oil**, but also create uncertainty regarding the achievable production rate upon reopening the wells.

If the integrity of the oil reservoirs is to be assured, some level of continued activity is required. Operators could better control pressure gradients and manage the reserve at a reduced production level than if the wells were capped. The Department of Energy (DOE) estimates that restricting production to about 25,000 barrels per **day--less** than 15 percent of the current **rate--would** not jeopardize the integrity of the reservoirs or

the recoverable reserves. Lower rates might also be possible, but we have used the 25,000 barrels per day figure for purposes of analysis. Such a production level **would** also provide sufficient revenues to cover contractual obligations and to continue exploration and development activities.

### International and Domestic Oil Markets

The 180,000 barrels per day NPR production represents less than 4 percent of current U.S. imports, or slightly more than 1 percent of total domestic consumption. Reduced oil demand in the consuming nations relative to world production has stabilized prices on world oil markets. If the oil market conditions remain stable, ceasing or reducing production of the NPR should not have a major effect on aggregate supplies or prices.

Elk Hills production, however, plays a more significant role in the regional oil market in California. First, much of the gas produced at the NPR is burned to generate the steam used for heavy oil recovery in the San Joaquin Valley. The loss of this gas would require that some new heat source be found for approximately 20,000 barrels per day of heavy oil production, about 10 percent of total heavy oil output in the region. Second, NPR crude oil is generally light and low in viscosity, which allows it to be blended with heavier crudes for pipeline transportation. Without NPR oil,

moving heavy crudes within California by pipeline would become more difficult, perhaps inhibiting their production. Finally, a number of small California refineries depend on a **set-aside** of up to 25 percent of Elk Hills crude production. These refiners are, in effect, subsidized by lower prices than they would pay if they were forced to seek new sources of crude comparable to the quality of **Elk** Hills oil.

#### Strategic Implications of the NPR

It is important to distinguish two aspects of oil **supply** security. The first is essentially military in nature and concerns the availability of petroleum products to the armed forces in the event of war. The **CBO** has not analyzed the contribution of NPR to this aspect of oil security. The second is economic in nature and concerns the ability of the economy to withstand the negative effects of an interruption in foreign oil supplies. The consequences of such a **disruption--lower** output of goods and services, higher unemployment, and **inflation--vary** with its size, its duration, and the **nation's** preparedness.

The NPR and the Strategic Petroleum Reserve (SPR) can both be considered components of U.S. preparedness. But, because of its relatively small surge capacity, the NPR is less likely to be a decisive factor in

mitigating the economic consequences of **supply** disruptions of the kind experienced in 1973 and 1979. By contrast, the SPR is a true stockpile, intended to supply oil quickly in response to an unanticipated oil supply interruption. It could deliver oil at rates up to three million barrels per day; and this ability to deliver large volumes quickly is essential to the success of any strategic reserve. Surge production from NPR would be at most 250,000 to 300,000 barrels per day, a level that could supplement but not replace the SPR.

The three NPR production **options--continued** production at the maximum efficient rate, reduced production, and complete shut **down--provide** varied emergency response possibilities. With regard to the first option, continued production at the MER does not allow very much surge capacity without risking damage to the oil fields. DOE estimates that production could be quickly increased from the current 180,000 barrels per day level by 25,000 to 30,000 barrels per day without jeopardizing the fields. Increases above this level are possible, but could result in loss of ultimately recoverable oil.

If production were slowed to about 25,000 barrels per day, DOE estimates that the operators could subsequently increase production to a peak of 250,000 to 300,000 barrels per day in less than 90 days. This rate would have to be reduced within several months to the 150,000 barrels per

day level, and could continue along the maximum **efficient** production curve, declining at about 10 percent per year. Ceasing production entirely would create uncertain surge capacity, because the behavior of the reservoirs during the shut-in period could not be predicted. This would limit the usefulness of the NPR for emergency planning since the time required to activate the reserve and the resulting production rate would remain unclear until activities resumed.

Yet, no matter what is done with the NPR, its surge capacity is not sufficient to reduce the need for a large Strategic Petroleum Reserve to help the economy through an oil import disruption. Instead, it can be considered a small, **cost-effective** supplement to the SPR with strong regional implications. We have not analyzed the impact of the NPR in a wartime situation.

### Budgetary Impact

Whatever the impact of NPR production on the world oil market, certain domestic markets, and emergency preparedness, it does generate much revenue for the federal Treasury. At the current production level of about 180,000 barrels per **day--of** which Chevron receives 20 **percent--the** Treasury receives about \$2.0 billion per year in gross receipts from oil sales,



plus about \$40 million from Chevron's share of operating costs to produce the oil. This appears in the budget as net offsetting receipts (a negative entry on the expenditure side of the budget) and windfall profits tax receipts (entered on the revenue side). The combination of these entries is termed gross receipts.

In fiscal year 1981, for example, the NPR oil production resulted in net offsetting receipts of \$1.2 billion and windfall profits tax receipts (paid by the government from the NPR oil sales) of \$0.6 billion. In addition, the government received approximately \$0.1 billion in windfall profit taxes from **Chevron's** sale of its share of the oil. Assuming continued production at the maximum efficient rate, the CBO projects the gross receipts to peak in **1984** at approximately \$2.5 billion (see Table 1). The gross cost to the government for this production is approximately \$200 million per year, about one-half of which is for continued exploration and development.

TABLE 1. CBO PROJECTION OF NPR RECEIPTS (By fiscal year, in millions of dollars)

	1981	1982	1983	1984	1985	1986
Windfall Profits Tax	600	770	810	890	870	850
<b>Offsetting Receipts</b>	<b>1,160</b>	<b>1,450</b>	<b>1,480</b>	<b>1,580</b>	<b>1,550</b>	<b>1,500</b>
Gross Receipts	1,760	2,220	2,290	<b>2,470</b>	<b>2,420</b>	2,350

Shutting down production would affect the budget in several ways. The direct effect would be the **loss** of receipts from production, together with the short-term costs of closing the reserve. While the reserve was not producing, the operation and maintenance costs would be reduced, although not necessarily eliminated. Of the 800 jobs that the NPR currently provides, those lost would depend on the level of production cutback. Shutting operations down entirely would require preparing equipment for storage at an estimated cost of \$5 to \$10 **million**, based on extrapolation of recent estimates by the General Accounting Office. This might ultimately save payroll expenses in the range of \$15 to \$30 million annually. Subsequent reactivation would cost about \$10 to \$15 million, in addition to **rehiring** a significant portion of the required work force. If shut down entirely, the loss in receipts from April of 1982 through 1986 is projected to be about **\$11** billion, or more than \$2 billion per year.

Slowing production to the 25,000 barrels per day level would require little or no preparation of equipment for storage and would minimize reactivation costs. Operation and maintenance costs would not be significantly reduced, however, as a relatively high level of employment would be maintained. The 1982 to 1986 loss in receipts from slowing production in April 1982 to 25,000 barrels per day would be about \$9 billion. This figure reflects the contract requirement that Chevron receive most of this production for 18 months.

In either case, the annual loss of receipts is small in comparison with the total federal **budget--at** most, three-tenths of one percent. But everything is small as a proportion of the federal budget, and a better comparison might be the cost of the other major instrument of oil security, the Strategic Petroleum Reserve. For example, if the \$2 billion in NPR receipts were spent directly on oil purchases for the Strategic Petroleum Reserve, about 50 million barrels could be purchased annually. This **would** provide a fill rate of about 135,000 barrels per day, a large fraction of the estimated fiscal year 1982 fill rate of 180,000 barrels per day.

Although the SPR and the NPR entail very different activities and goals, there have been historical ties between them. The Energy Security Act of 1980 provides that if the SPR fill rate falls below an average of 100,000 barrels per day, Elk Hills production must be directed to the SPR or exchanged for oil to fill the SPR. Further, until recently, the NPR and the SPR were linked by contracts which exchanged Elk Hills oil for oil destined for the Strategic Petroleum Reserve.

Thus, both programs represent national oil reserves and both have been linked in the past. Despite this, the budgetary treatment of expenditures and revenues associated with them remains technically inconsistent. The SPR oil purchases are not considered within the unified budget for fiscal year 1982, even though they are clearly federal expenditures. The receipts

from NPR **sales**, however, are counted in the budget totals. While the NPR production could be traded for oil destined for the SPR, to do so with the current budget treatment would result in a net accounting loss equal to the NPR gross receipts of \$2.2 billion in fiscal year 1982 (assuming production were continued for that year.)

### Summary

In conclusion, **slowing** the NPR production to a level that would assure the integrity of the reservoirs does not reduce the need for a large Strategic Petroleum Reserve. Instead, it provides a small, **cost-effective** supplement to the SPR with strong regional implications. But whatever its addition to oil security, the contribution of the NPR must be weighed against the regional effects of a production slowdown, and the loss of receipts for the federal government. Further, if the loss of receipts should result in pressures to slow the rate of oil purchases for the SPR, the net effect could be reduced preparedness for oil emergencies. Finally, while the NPR and the SPR have been considered complimentary programs, the inconsistency in their treatment within the budget process can distort the outcomes of policy decisions.