

# CRS Issue Brief for Congress

Received through the CRS Web

## Strategic Petroleum Reserve

Updated February 22, 2006

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## Strategic Petroleum Reserve

### SUMMARY

Congress authorized the Strategic Petroleum Reserve (SPR) in the Energy Policy and Conservation Act (EPCA, P.L. 94-163) to help prevent a repetition of the economic dislocation caused by the 1973-74 Arab oil embargo. The program is managed by the Department of Energy (DOE). Physically, the SPR comprises five underground storage facilities, hollowed out from naturally occurring salt domes in Texas and Louisiana.

In the aftermath of Hurricanes Katrina and Rita, Secretary of Energy Bodman indicated on August 31 that the Bush Administration was authorizing releases of SPR crude oil. By September 19, seven requests for loans totaling roughly 13.2 million barrels were approved to operating refineries whose crude supply had been interrupted by the hurricanes. Delivery was taken on 9.8 million barrels; the companies that borrow oil return at a later date a slightly greater quantity than was borrowed.

On September 2, 2005, the International Energy Agency (IEA) indicated that IEA signatories would be releasing 60 million barrels of American, European, and Asian strategic stocks at the rate of 2 million barrels a day. Half of the total drawdown was 30 million barrels of SPR crude that were offered for bid. On September 14, DOE announced that bids for 11 million barrels had been accepted.

On August 8, 2005, the President signed the Energy Policy Act of 2005 (P.L. 109-58). The bill as enacted permanently authorizes the SPR and requires, "as expeditiously as practicable," expansion of the SPR to its authorized maximum of 1 billion barrels. Within one year of enactment, the Secretary will select sites — from among those that have been previously studied — for the expansion.

Among other provisions, the Secretary is also required to develop procedures for achieving the fill objective without "incurring excessive cost" or placing upward pressure on prices.

The SPR currently has a capacity of 727 million barrels. The SPR stood at 700 million barrels when RIK fill ended in August 2005; the Reserve held roughly 684 million barrels in early 2006, reflecting sales and loans of SPR oil. Loaned oil will be returned before summer 2006. A Northeast Heating Oil Reserve (NHOR) holds 2 million barrels of heating oil in above-ground storage. A formula governs its use; it has yet to be tapped.

On October 7, 2005, the House passed H.R. 3893 (212-210), the Gasoline for America's Security Act. The act would allow sales of SPR oil to finance the expansion of SPR capacity as required by P.L. 109-58. Proceeds from sales would be deposited to an SPR Expansion Fund. Additionally, the NHOR would be expanded to 5 million barrels. The legislation has been referred to the Senate Committee on Energy and Natural Resources. Some policymakers have urged the establishment of regional product reserves. In early January 2006, the Society of Independent Gasoline Marketers of America (SIGMA) requested that the National Petroleum Council (NPC) study the feasibility of establishing gasoline, diesel, and jet fuel reserves.

The Administration has requested \$155.4 million for the SPR for FY2007 and nearly \$5 million for the NHOR. Congress approved \$166.0 million (Energy and Water Development Appropriations Act, 2006, P.L. 109-103) to fund the SPR during FY2006. No new money was requested for the NHOR in FY2006, owing to prior year balances of \$5.3 million.

## MOST RECENT DEVELOPMENTS

In the aftermath of Hurricanes Katrina and Rita, oil from the Strategic Petroleum Reserve (SPR) was sold and loaned. On September 2, 2005, the International Energy Agency (IEA) indicated that IEA signatories would be releasing 60 million barrels of American, European, and Asian strategic stocks at the rate of 2 million barrels a day. Half of the total drawdown was 30 million barrels of SPR crude that were offered for bid. DOE accepted bids for 11 million barrels. Loans of 9.8 million barrels will be “repaid” with a slightly greater quantity when returned.

On October 7, 2005, the House passed H.R. 3893 (212-210), the Gasoline for America’s Security Act. The act would allow sales of SPR oil to finance expansion of the SPR to 1 billion barrels, as required by P.L. 109-58. Proceeds from the sale of SPR oil are to be deposited to an SPR Expansion Fund. Additionally, the Northeast Heating Oil Reserve (NHOR) would be expanded to 5 million barrels. The legislation has been referred to the Senate Committee on Energy and Natural Resources. Some policymakers have urged the establishment of regional product reserves. In early January 2006, the Society of Independent Gasoline Marketers of America (SIGMA) requested that the National Petroleum Council (NPC) study the feasibility of establishing gasoline, diesel, and jet fuel reserves. A request for the Council to undertake a study would have to originate from or be approved by the Secretary of Energy and be in the form of an official request letter.

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## BACKGROUND AND ANALYSIS

### **Use of the SPR After Hurricanes Katrina and Rita**

In the aftermath of Hurricanes Katrina and Rita, Secretary of Energy Bodman indicated on August 31 that the Bush Administration was authorizing releases of Strategic Petroleum Reserve (SPR) crude oil. By September 19, seven requests for loans totaling roughly 13.2 million barrels were approved to operating refineries whose crude supply had been interrupted by the hurricanes. Delivery was taken on 9.8 million barrels.

Although the originally conceived purpose of the SPR was to make crude available in the event of an interruption in oil imports from abroad, there is also authority to use the SPR to address oil emergencies internal to the United States. On September 2, 2005, the International Energy Agency (IEA) indicated that IEA signatories would be releasing 60 million barrels of American, European, and Asian strategic stocks at the rate of 2 million barrels a day. Half of the total drawdown was 30 million barrels of SPR crude that were offered for bid. On September 14, DOE announced that bids for 11 million barrels had been accepted.

Use of the SPR as a policy tool to respond to the hurricane-induced shortages was limited by the effect of the storms on U.S. refining capacity. A barrel of crude can contribute to product supply only if there is refining capacity to turn the crude into gasoline or diesel fuel. More than 5 million barrels per day (b/d) of U.S. refining capacity were shut down as a result of the storms. The more than 500,000 b/d of capacity still off-line at the end of January 2006 should be restarted by the end of March.

In the wake of the storms, some policymakers have urged the establishment of regional product reserves. In early January 2006, the Society of Independent Gasoline Marketers of America (SIGMA) requested that the National Petroleum Council (NPC) study the feasibility of establishing gasoline, diesel, and jet fuel reserves. This issue may get attention during the second session. A request for the Council to undertake a study would have to originate from or be approved by the Secretary of Energy and be in the form of an official request letter.

## History of the SPR

Congress authorized the Strategic Petroleum Reserve (SPR) in the Energy Policy and Conservation Act (EPCA, P.L. 94-163) to help prevent a repetition of the economic dislocation caused by the 1973-1974 Arab oil embargo. The program is managed by the Department of Energy (DOE). Physically, the SPR comprises five underground storage facilities, hollowed out from naturally occurring salt domes, located in Texas and Louisiana. Oil stored at one of the sites, Weeks Island, was transferred after problems with the structural integrity of the cavern were discovered in the mid-1990s.

Congress agreed to a funding level of \$174.6 million for the program in the Consolidated Appropriations Act for FY2005 (P.L. 108-447). This figure included \$4.9 million for the NHOR. Congress agreed to the \$166 million Administration request in the Energy and Water Development Appropriations Act, 2006 (P.L. 109-103) to fund the SPR during FY2006. No new money was requested for the Northeast Heating Oil Reserve (NHOR) in FY2006, owing to prior year balances of \$5.3 million.

It was generally believed that the mere existence of a large, operational reserve of crude oil would deter future oil cutoffs and would discourage the use of oil as a weapon. In the event of an interruption, introduction into the market of oil from the Reserve was expected to help calm markets, mitigate sharp price spikes, and reduce the economic dislocation that had accompanied the 1973 disruption. In so doing, the Reserve would also buy time — time for the crisis to sort itself out or for diplomacy to seek some resolution before a potentially severe oil shortage escalated the crisis beyond diplomacy. The SPR was to contain enough crude oil to replace imports for 90 days, with a goal initially of 500 million barrels in storage. In May 1978, plans for a 750-million-barrel Reserve were implemented.

The program fell increasingly behind schedule. By the end of 1978, the SPR was supposed to contain 250 million barrels, but contained only 69 million barrels. When the Iranian revolution cut supplies in the spring of 1979, purchases were suspended to reduce the upward pressure on world oil prices. Filling of the Reserve was resumed in September 1980 following enactment of the Energy Security Act (P.L. 96-294), which established a minimum fill rate of 100,000 barrels per day (b/d). An amendment to the FY1981 DOE appropriations legislation required that the Administration accelerate the fill rate to 300,000 b/d, subject to

adjustments for cost and other market factors. The fill rate was 292,000 b/d in FY1981, but steadily declined to a low of 34,000 b/d in FY1990.

Filling of the SPR was suspended during 1990-1992 after the Iraqi invasion of Kuwait, but was resumed at a modest rate. Fill declined to 16,500 b/d during FY1994 before being suspended at the end of that fiscal year; by then the SPR itself held 592 million barrels. Owing to sales of SPR oil during 1996, the level in the Reserve had fallen to 563.5 million barrels by the early spring of 1997. (At the prices prevailing in the late spring of 1998, that inventory would have declined to roughly 542 million barrels had a sale authorized for FY1998 been carried out.) In mid-November of 2001, President Bush ordered fill of the SPR to 700 million barrels, principally through oil acquired as royalty-in-kind (RIK) for production from federal offshore leases.<sup>1</sup> Deliveries scheduled for late 2002 and the first months of 2003 were delayed due to tightness in world oil markets. Deliveries of RIK oil, and oil that was still owed from an "exchange" held in 2000, resumed in the spring, exceeded 200,000 barrels per day during summer 2003, and variously averaged between 60,000 and 200,000 b/d through October 2004. Oil obligations to the SPR from the 2000 exchange were satisfied in January 2004.

Efforts in the 108<sup>th</sup> Congress to compel a cessation of RIK fill were unsuccessful. On March 11, 2004, in its debate on the FY2005 budget resolution, the Senate called for a suspension of deliveries and a sale instead of 53 million barrels of RIK oil. Proceeds (pegged at \$1.7 billion) would have been used for deficit reduction and increased homeland security funding for states. The Administration remained firm that it would maintain its current fill policy, and that it would not defer RIK deliveries. Another effort to suspend deliveries to the SPR of RIK oil occurred on September 14, 2004, during debate on H.R. 4567, the FY2005 Department of Homeland Security appropriations bill. Senator Byrd proposed suspension of RIK fill in order to provide \$470 million in additional funding for homeland security purposes. The amendment fell on a point of order.

Estimates of the effect on prices of continued SPR fill varied widely, with some arguing that the effect would be negligible, while one economist argued that the removal of RIK oil from the market during 2003 had added \$6/barrel to the price of crude and \$.25 to a gallon of gasoline. Others argued that the volumes involved in the RIK program were too small to affect prices. The question became moot (for the moment, at least) when RIK deliveries ended in August.

If the Administration wishes to resume RIK fill at any time in the future, its decision will be affected by provisions in the enacted Energy Policy Act of 2005 (P.L. 109-58) that require the Secretary to develop and publish for comment procedures for filling the SPR that take into consideration a number of factors. Among these are the loss of revenue to the Treasury from accepting royalties in the form of crude oil, how the resumed fill might affect prices of both crude and products, and whether additional fill would be justified by national security.

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<sup>1</sup> Current capacity is 727 million barrels following a re-evaluation of the cavern formations and other work. Water injections into caverns when oil has been moved have added capacity, as has completion of the project to remove excess gas from stored petroleum.

Crude prices exceeded \$50/barrel during October 2004, accompanied by declines in crude and product inventories. A major factor was Hurricane Ivan, which rampaged through the Gulf Coast in mid-September, and temporarily interrupted more than 70% of offshore crude production, affecting crude oil deliveries to refineries. On September 23, 2004, the Administration agreed to a request placed to the Department of Energy from a couple of refineries seeking to borrow crude oil from the SPR, to be replaced within a short period of time. Subsequent requests raised the amount of borrowed crude to roughly 5.4 million barrels. The volume of oil returned was greater than the volume borrowed, in keeping with the mechanics of a “swap” of oil conducted in 2002 under comparable circumstances.

Critics claimed that it was a belated and insufficient use of the SPR, and that it even “backfired” in terms of calming the market. However, because the swap was limited and sharply focused, and represented such a tiny volume of oil, it may have been a misinterpretation to see it as intended to do anything more than it did — which was to provide supply to refiners to whom deliveries of crude were temporarily affected by Hurricane Ivan. As there is provision in law for limited uses of the SPR to mitigate the effects of domestic interruptions in supply, the Administration argued that the decision to loan oil to these refineries was consistent with its overall SPR policy not to suspend fill or to authorize a broader drawdown for the purpose of reducing high prices. The swap was not characterized as a broader market-calming measure. The fact that the price of oil rose even after the announcement was a reflection of much stronger factors and uncertainties then prevailing in world markets than could be offset by such a limited swap.

Hurricane Katrina shut down production of nearly 1.4 million barrels per day of crude production. On August 31, the Administration announced that it would consider requests from refiners for loans of SPR oil. By September 13, loans of more than 13.2 million barrels of SPR crude had been approved. In the end, delivery was taken on 9.8 million barrels of the volume approved for loan.

On September 2, 2005, the International Energy Agency (IEA) indicated that IEA signatories would be releasing 60 million barrels of American, European, and Asian strategic stocks at the rate of 2 million barrels a day. Half of the total drawdown was 30 million barrels of SPR crude that were offered for bid. On September 14, DOE announced that bids for 11 million barrels had been accepted. When loaned oil is fully returned in 2006 and deliveries of sold oil are taken, the SPR would theoretically settle to a level of roughly 690 million barrels.

Owing to threats to oil supply in Nigeria, crude prices exceeded \$65 in mid-January 2006, even while prices for gasoline, diesel, and home heating oil were off of previous highs but still significantly higher than year-earlier levels. Growing stocks of crude and petroleum products by the end of January 2006 led to a drop in crude prices below \$60/bbl and some drop in gasoline and distillate prices. Nonetheless, prices overall remain substantially higher than year-earlier levels. There have been no calls for use of the SPR going into 2006.

With respect to the program’s budget, the Administration has requested \$155.4 million for the SPR for FY2007 and nearly \$5 million for the NHOR. Congress approved \$166.0 million (Energy and Water Development Appropriations Act, 2006, P.L. 109-103) to fund the SPR during FY2006. No new money was requested for the NHOR in FY2006, owing to prior year balances of \$5.3 million.

## Reauthorization of the SPR

The authorities governing a drawdown of the SPR are included in the Energy Policy and Conservation Act (EPCA, P.L. 94-163). These authorities also provide for U.S. participation in emergency-sharing activities of the International Energy Agency (IEA) without risking violation of antitrust law and regulation. The Energy Policy Act of 2005 (P.L. 109-58) permanently authorized the SPR. This should avoid the repeat of an episode in the past when the authorities expired and remained so for a number of months. While a legal argument was made that the SPR can be used without its underlying authorities active (see section below), having the authorities permanently in place will simplify use of the SPR in the future.

## The Drawdown Authorities

The Energy Policy and Conservation Act (EPCA) authorizes drawdown of the Reserve upon a finding by the President that there is a “severe energy supply interruption.” This is deemed by the statute to exist if three conditions are joined: If “(a) an emergency situation exists and there is a significant reduction in supply which is of significant scope and duration; (b) a severe increase in the price of petroleum products has resulted from such emergency situation; and (c) such price increase is likely to cause a major adverse impact on the national economy.”

Congress enacted additional drawdown authority in 1990 (Energy Policy and Conservation Act Amendments of 1990, P.L. 101-383) after the *Exxon Valdez* oil spill, which interrupted the shipment of Alaskan oil, triggering spot shortages and price increases. The intention was to provide for an SPR drawdown under a less rigorous finding than that mandated by EPCA. This section, 42 U.S.C. § 6241(h), allows the President to use the SPR for a short period without having to declare the existence of a “severe energy supply interruption” or the need to meet obligations of the United States under the international energy program.

Under this provision, a drawdown may be initiated in the event of a circumstance that “constitutes, or is likely to become, a domestic or international energy supply shortage of significant scope or duration” and where “action taken ... would assist directly and significantly in preventing or reducing the adverse impact of such shortage.” This authority allows for a limited use of the SPR. No more than 30 million barrels may be sold over a maximum period of 60 days, and this limited authority may not be exercised at all if the level of the SPR is below 500 million barrels. This was the authority behind the Bush Administration’s offer of 30 million barrels of SPR oil on September 2, 2005, which was part of the coordinated drawdown called for by the International Energy Agency. The same authority may have been the model for a swap ordered by President Clinton on September 22, 2000 (see p. 13). As noted above, agreement on extension of the EPCA authorities was not reached until the final days of the 106<sup>th</sup> Congress (P.L. 106-469). During the roughly seven months that no formal authorities were in place, the Administration’s position was that the existence of an annual appropriation for the SPR conveys Congress’s intention to maintain the SPR irrespective of whether the statutes have lapsed. The existence of legislative proposals in both the House and Senate to fund the SPR in FY2001 and to reauthorize the program were also interpreted by DOE counsel as further evidence of Congress’ intention toward the SPR. As noted previously, the Energy Policy Act of 2005 (P.L. 109-58) made the SPR authorities permanent.

## Establishment of a Regional Home Heating Oil Reserve

While a number of factors contributed to the virtual doubling in some Northeastern locales of home heating oil prices during the winter of 1999-2000, one that drew the particular attention of lawmakers was the sharply lower level of middle distillate stocks immediately beforehand. It renewed interest in establishment of a regional reserve of home heating oil. The Energy Policy and Conservation Act (EPCA, P.L. 94-163) includes authority for the Secretary of Energy to establish regional reserves as part of the broader Strategic Petroleum Reserve. With support from the Administration, Congress moved to specifically authorize and fund a regional heating oil reserve in the Northeast. The FY2001 Interior Appropriations (P.L. 106-291) provided \$8 million for the Northeast Heating Oil Reserve (NHOR). The regional reserve was filled by the middle of October 2000 at two sites in New Haven, Connecticut, and terminals in Woodbridge, New Jersey, and Providence, Rhode Island. The NHOR would provide roughly 10 days of Northeast home heating oil demand.

There was controversy over the language that would govern its use. Opponents of establishing a regional reserve suspected that it might be tapped at times that some consider inappropriate, and that the potential availability of the reserve could be a disincentive for the private sector to maintain inventories as aggressively as it would if there were no reserve. The approach enacted predicated drawdown on a regional supply shortage of “significant scope and duration,” or if — for seven consecutive days — the price differential between crude oil and home heating oil increased by more than 60% over its five-year rolling average. The intention was to make the threshold for use of the regional reserve high enough so that it would not discourage oil marketers and distributors from stockbuilding. The President may also authorize a release of the NHOR in the event that a “circumstance exists (other than the defined dislocation) that is a regional supply shortage of significant scope and duration,” the adverse impacts of which would be “significantly” reduced by use of the NHOR.

During mid- and late December 2000, the 60% differential was breached. However, this was due to a sharp decline in crude prices rather than to a rise in home heating oil prices. In fact, home heating oil prices were drifting slightly lower during the same reporting period. As a consequence, while the 60% differential was satisfied, other conditions prerequisite to authorizing a drawdown of the NHOR were not.

The general strike in Venezuela that began in late 2002 resulted, for a time, in a loss of as much as 1.5 million barrels of daily crude supply to the United States. With refinery utilization lower than usual owing to less crude reaching the United States, domestic markets for home heating oil had to rely on refined product inventories to meet demand during a particularly cold winter. Prices rose, and there were calls for use of the NHOR; still, the price of heating oil fell significantly short of meeting the guidelines for a drawdown.<sup>2</sup> In the FY2004 Interior appropriations, both the House and Senate Committees included language asking that DOE advise Congress as to the “circumstances” under which the NHOR

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<sup>2</sup> DOE updates and posts a table weekly which shows the various inputs that go into the calculation to determine the current differential. (For additional information on the establishment of the NHOR, see CRS Report RL30781, *U.S. Home Heating Oil Price and Supply During the Winter of 2000-2001: Policy Options*, by Robert L. Bamberger.)

might be used. The provision implied that some in Congress were not satisfied with the formula currently in place that would permit drawdown of the NHOR. The language was not included in the final FY2004 Interior appropriations bill. As the sharp increases in home heating oil prices during 2005 are averaged into the five-year rolling average, the price differential needed to trigger use of the NHOR will increase.

On October 7, 2005, the House passed H.R. 3893 (212-210), the Gasoline for America's Security Act. Among other provisions, it would expand the NHOR to 5 million barrels.

## Purchases of Crude Oil

With the expiration in the late 1980s of an agreement with Petroleos Mexicanos (PEMEX), the Defense Fuels Supply Center resumed making purchases for the SPR on behalf of DOE from the spot market until fill was suspended for a second time after FY1994. The federal deficit was a major concern, and in light of the common interests established between consuming and producing nations during the Gulf War, the Reserve was deemed by a majority in Congress to be sufficiently filled.

Alternatives to the direct purchase of oil for the Reserve were studied and debated during the 1980s. Most alternatives had distinct disadvantages or risks. Among the options examined at length were the sale of oil-denominated bonds with the revenues applied to oil purchases; imposition of SPR-dedicated fees on gasoline or oil imports; and sale of the Naval Petroleum Reserves (NPR) or dedication of NPR revenues to SPR purchases. The only option examined thought to have the same advantages as direct purchases was oil leasing.

In the 102<sup>nd</sup> Congress, omnibus energy legislation in the House (H.R. 776) included a provision that would have required that refiners of domestic and imported oil be assessed 1% of their domestic and imported crude and products — or the cash equivalent — to provide 150,000 b/d for the SPR. The George H. W. Bush Administration and the industry were opposed to this approach, arguing that a set-aside would be the equivalent of a tax and that it would be borne disproportionately by certain companies. The contentious set-aside language was struck on the House floor, and a similar provision in the Senate was defeated during committee markup.

From 1995 until the latter part of 1998, sales of SPR oil, not acquisition, were at the center of debate. However, reduction and elimination of the annual federal budget deficit and the precipitous drop in crude oil prices into early 1999 generated new interest in replenishing the SPR, either to further energy security objectives or as a means of providing price support to domestic producers who were struggling to keep higher-cost, marginal production in service. As an initiative to help domestic producers, Secretary of Energy Bill Richardson requested that the Office of Management and Budget (OMB) include \$100 million in the FY2000 budget request for oil purchases. The proposal was rejected. It was also periodically suggested that it be U.S. policy to purchase domestic oil for the SPR as a means of keeping marginal wells in production. The SPR reauthorization enacted by the 106<sup>th</sup> Congress (P.L. 106-469) included an amendment authorizing purchase of oil from U.S. wells producing 15 barrels or less (25 or less if there is a high water content to the recovered oil) in the event that the price of crude falls to \$15/barrel or below. In September 1998, the Big Hill SPR site in Texas was activated as a foreign trade subzone, which would enable foreign

countries to store surplus production in the Reserve without paying customs fees and taxes, but there have been no developments in this regard.

## Royalty-in-Kind Acquisition for the SPR

When OMB turned down DOE's request to fund purchases for SPR oil in FY1999, DOE suggested as an alternative that a portion of the royalties to the government from oil leases in the Gulf of Mexico be accepted "in kind" (in the form of oil) rather than as revenues. The Department of the Interior (DOI) was reported to be unfavorably disposed to the royalty-in-kind (RIK) proposal, but a plan to proceed with such an arrangement was announced on February 11, 1999. (Legislation had also been introduced — H.R. 498 — in the 106<sup>th</sup> Congress to direct the Minerals Management Service to accept royalty-in-kind oil.) Producers have favored institution of such a program because they maintain the current system for valuation of oil at the wellhead is complex and flawed. Acquiring oil for the SPR by RIK avoids the necessity for Congress to make outlays to finance direct purchase of oil; however, it also means a loss of revenues in so far as the royalties are paid in wet barrels rather than in cash.

Final details were worked out during the late winter of 1999. The ultimate intention was to replace the 28 million barrels that were sold in recent years; it would take about 10 months to replenish this volume at the anticipated rate of roughly 100,000 b/d. At its inception, the RIK plan was greeted as a well-intended and helpful first step. This Clinton program, and the return of oil that was "swapped out" from the SPR in 2000 by the Clinton Administration, was to account for a total of 47 million barrels restored to the SPR. Deliveries of RIK oil ordered by the Bush Administration in 2001 ended in August 2005 when the SPR reached 700 million barrels.

**Table 1** summarizes the number of sources that provided oil for the Reserve from the program's inception until the end of 1995, when conventional fill was suspended. Following the test sale and actual drawdown of SPR oil during the Persian Gulf War, the SPR's holdings declined to 568.5 million barrels. Purchases restored the reserve to nearly 591.6 million barrels before they were suspended.

The terrorist attacks upon the United States on September 11, 2001, accelerated interest in acquiring crude for the SPR. Some thought, in the short term, that depending upon the nature of the U.S. response and potential reprisals, the possibility existed for a politically driven interruption in oil exports bound for U.S. shores, a threat to waterborne tankers, or sabotage of oil facilities in the United States itself. On November 13, 2001, President Bush ordered fill of the SPR to 700 million barrels, relying upon oil acquired by the government through royalty-in-kind. During 2002, nearly 40 million barrels of oil were deposited in the SPR, some of which was oil returned under the terms of a "swap" in the fall of 2000 (for details, see "September 2000: A Swap Is Announced" section below).

However, in light of tightness in world oil markets and increasing prices, the Administration agreed to delay deliveries scheduled for late 2002 and the first months of 2003. The Administration had intended to boost deliveries to the SPR to 130,000 barrels per day during April 2003, a total of 3.9 million barrels. But, on March 4, 2003, DOE delayed delivery of all but 15,000 b/d of RIK oil. With the declared end of the military phase of the

war in Iraq and little effect on oil markets, deliveries of RIK oil were resumed, as well as delivery of oil still owed from a “swap” held in 2000 (see p. 13).

Deposit of 40 million barrels into the SPR during 2002 was criticized in a report released on March 3, 2003, by Senator Levin, representing the minority on the U.S. Senate Permanent Committee on Investigations. The study argued that this increment of fill had been a major contributor to oil price increases during that year. A number of industry analysts quickly dismissed the study, arguing that the quantity of SPR fill was not significant enough to have driven the market. On August 5, 2003, Senator Levin reiterated his charges in a letter to Secretary of Energy Abraham, requesting that DOE suspend acquisitions for the SPR until crude prices decline. The study was posted on the Web at [<http://www.access.gpo.gov/congress/senate/pdf/108hr/85551.pdf>].

Efforts in the 108<sup>th</sup> Congress to compel suspension of RIK fill were unsuccessful. An amendment to the FY2005 Interior Appropriations bill (H.R. 4568) to suspend RIK deliveries and cap the SPR at 647 million barrels was defeated on the House floor (152-267) on June 17. Another effort to suspend RIK deliveries to the SPR occurred on September 14, 2004, during debate on H.R. 4567, the FY2005 Department of Homeland Security appropriations bill. Senator Byrd proposed suspension of RIK fill in order to provide \$470 million in additional funding for homeland security purposes. The amendment was set aside.

As noted earlier, deliveries of RIK oil ended in August 2005. As also noted previously, provisions in the Energy Policy Act of 2005 will require review of the potential impact of removing RIK oil from the market if there is intention to resume RIK fill in the future.

**Table 1. SPR: Crude Oil Received Through 1995**  
(millions of barrels)

Source	Net contract/quantity	Percentage of total/%
Mexico	256.7	41.9
North Sea (U.K.)	147.3	24.0
United States	48.1	7.8
Saudi Arabia	27.1	4.4
Libya	23.7	3.9
Iran	20.0	3.3
UAE	18.4	3.0
Nigeria	15.1	2.5
Norway	11.9	1.9
Oman	9.0	1.5
Egypt	8.9	1.5
Ecuador	6.2	1.0
Algeria	6.2	1.0
Cameroon	3.4	0.6
Iraq	3.4	0.6
Gabon	2.4	0.4
Qatar	2.3	0.4

Source	Net contract/quantity	Percentage of total/%
Angola	1.0	0.2
Venezuela	0.9	0.1
Peru	0.4	0.1
Argentina	0.4	0.1
<b>Total receipts</b>	<b>612.8</b>	<b>100.0</b>

Source: U.S. Department of Energy.

## Drawdown of the Reserve

### Drawdown Capability

The resources of the Strategic Petroleum Reserve are of little value unless DOE can remove, transport, and sell the oil expeditiously and in significant volume during a supply emergency. The SPR could be drawn down initially at a rate of 4.3 million barrels per day (mbd) for up to 90 days; thereafter, the rate would begin to decline. Although fears were expressed periodically during the 1980s whether the facilities for withdrawing oil from the Reserve were in proper readiness, the absence of problems during the first real drawdown in early 1991, during the Persian Gulf War, appears to have allayed much of that concern. However, some SPR facilities and infrastructure were beginning to reach the end of their operational life. A Life Extension Program, initiated in 1993 upgraded or replaced all major systems to ensure the SPR's readiness to 2025.

Concern was also periodically raised about whether the SPR would be able to provide meaningful relief to Hawaii. Reauthorization legislation enacted late in the 105<sup>th</sup> Congress (P.L. 105-388) included new provisions that would allow companies servicing Hawaii to enter into a binding agreement for purchase of SPR oil during a drawdown. The state would be assured some quantity of oil at a price that would be an average of all successful bids. The volume sold to Hawaii in this manner could be subject to certain limits.

### Debate Over When to Use the Reserve

A debate during the 1980s over when, and for what purpose, to initiate a drawdown of SPR oil reflected the significant shifts that were taking place in the operation of oil markets after the experiences of the 1970s, and deregulation of oil price and supply. Sales of SPR oil authorized by the 104<sup>th</sup> Congress — and in committee in the 105<sup>th</sup> — renewed the debate for a time. The intended use of the SPR has become an issue again, beginning with the rise in home heating prices during the winter of 1999-2000.

The SPR Drawdown Plan, submitted by the Reagan Administration in late 1982, provided for price-competitive sale of SPR oil. The plan rejected the idea of conditioning a decision to distribute SPR oil on any “trigger” or formula. To do so, the Administration argued, would discourage private sector initiatives for preparedness or investment in contingency inventories. Many analysts, in and out of Congress, agreed with the Administration that reliance upon the marketplace during the shortages of 1973 and 1979 would probably have been less disruptive than the price and allocation regulations that were imposed. But many argued that the SPR should be used to moderate the price effects that

can be triggered by even small shortages (like those of the 1970s or the tight inventories experienced during the spring of 1996) and lack of confidence in supply availability. Early drawdown of the SPR, some argued, was essential to achieve these desirable objectives.

The Reagan Administration revised its position in January 1984, announcing that the SPR would be drawn upon early in a disruption. This new policy was hailed as a significant departure, easing considerably congressional discontent over the Administration's preparedness policy, but it also had international implications. Some analysts began to stress the importance of coordinating stock drawdowns worldwide during an emergency lest stocks drawn down by one nation merely transfer into the stocks of another, and defeat the price-stabilizing objectives of a stock drawdown. In July 1984, responding to pressure from the United States, the International Energy Agency agreed "in principle" to an early drawdown, reserving decisions on "timing, magnitude, rate and duration of an appropriate stockdraw" until a specific situation needed to be addressed.

This debate was revisited in the aftermath of the Iraqi invasion of Kuwait on August 2, 1990. The escalation of gasoline prices and the prospect that there might be a worldwide crude shortfall approaching 4.5-5.0 million barrels daily prompted some to call for drawdown of the SPR. The debate focused on whether SPR oil should be used to moderate anticipated price increases, before oil supply problems had become physically evident.

In the days immediately following the Iraqi invasion of Kuwait, the George H. W. Bush Administration indicated that it would not draw down the SPR in the absence of a physical shortage simply to lower prices. On the other hand, some argued that a perceived shortage does as much and more immediate damage than a real one, and that flooding the market with stockpiled oil to calm markets is a desirable end in itself. From this perspective, the best opportunity to use the SPR during the first months of the crisis was squandered. It became clear during the fall of 1990 that, in a decontrolled market, physical shortages are less likely to occur. Instead, shortages are likely to be expressed in the form of higher prices as purchasers are free to bid as high as they wish to secure scarce supply.

Within hours of the first air strike against Iraq in January 1991, the White House announced that President Bush was authorizing a drawdown of the SPR, and the IEA activated the plan on January 17. Crude prices plummeted by nearly \$10/barrel in the next day's trading, falling below \$20/bbl for the first time since the original invasion. The price drop was attributed to optimistic reports about the allied forces' crippling of Iraqi air power and the diminished likelihood, despite the outbreak of war, of further jeopardy to world oil supply. The IEA plan and the SPR drawdown did not appear to be needed to help settle markets, and there was some criticism of it. Nonetheless, more than 30 million barrels of SPR oil was put out to bid, and 17.3 million barrels were sold and delivered in early 1991.

The Persian Gulf War was an important learning experience about ways in which the SPR might be deployed to maximize its usefulness in decontrolled markets. As previously noted, legislation enacted by the 101<sup>st</sup> Congress, P.L. 101-383, liberalized drawdown authority for the SPR to allow for its use to prevent minor or regional shortages from escalating into larger ones; an example was the shortages on the West Coast and price jump that followed the Alaskan oil spill of March 1989. In the 102<sup>nd</sup> Congress, omnibus energy legislation (H.R. 776, P.L. 102-486) broadened the drawdown authority further to include

instances where a reduction in supply appeared sufficiently severe to bring about an increase in the price of petroleum likely to “cause a major adverse impact on the national economy.”

A new dimension of SPR drawdown and sale was introduced by the Clinton Administration’s proposal in its FY1996 budget to sell 7 million barrels to help finance the SPR program. While agreeing that a sale of slightly more than 1% of SPR oil was not about to cripple U.S. emergency preparedness, some in the Congress vigorously opposed the idea, in part because it might establish a precedent that would bring about additional sales of SPR oil for purely budgetary reasons, as did indeed occur. There were three sales of SPR oil during FY1996. The first was to pay for the decommissioning of the Weeks Island site. The second was for the purpose of reducing the federal budget deficit, and the third was to offset FY1997 appropriations. The total quantity of SPR sold was 28.1 million barrels, and the revenues raised were \$544.7 million.

What follows is a brief history of circumstances prior to Hurricanes Katrina and Rita when there have also been calls for use of the SPR. A review of these events captures the difficulty of reconciling market developments with the authorities that govern an SPR drawdown. This history also touches upon how the SPR was used in the past when the authorities governing the SPR had expired — a scenario that, owing to the permanent authorization of the program in the Energy Policy Act of 2005 — will not be repeated in the future.

## **Calls for a Drawdown: Home Heating Oil, Winter 1999-2000**

At the start of 2000, reducing the federal budget deficit was no longer the argument for a sale of SPR oil. Some argued that a leap in home heating oil prices from the winter of 1998-1999 to the winter of 1999-2000 was a rationale for drawing down the SPR. As the price increases generalized to diesel fuel, heating oil, and gasoline, the calls for an SPR drawdown began to multiply. At issue during the winter of 1999-2000 was whether the price for home heating oil had reached a level severe enough to stir a shift in policy governing SPR use — and whether the SPR could be any sort of remedy. Though the price of heating oil and other petroleum products is inextricably tied to oil supply, policy governing SPR use has generally been that SPR oil is to be used primarily to ameliorate oil supply shortages and their consequences (including higher prices), but not to be used to explicitly regulate prices.

Additionally, some argued that a drawdown of the SPR would not alleviate the problem. The Clinton Administration’s contention was that high prices were the consequence of a number of temporary factors that could not be resolved any faster by intervention. This was because the tight supply of home heating oil in the Northeast was due in part to idle refinery capacity and refiners’ drawdown of stocks during recent months while crude prices were escalating. Refiners preferred to use lower-cost inventory rather than purchase higher-priced crude. Prolonged freezing temperatures also had made certain ports less accessible, adding to distribution problems. The Administration argued that the high prices prevailing would encourage increased production of home heating oil, a shift of refined product stocks to the Northeast, and additional product imports that would arrive in due course. Though it would take some weeks for these effects to take hold, the argument was that these developments would alleviate the supply problem long before a drawdown from the SPR could help. In the

meantime, some governors received additional funds from LIHEAP, the Low-Income Home Energy Assistance Program administered by the Department of Health and Human Services.

As gasoline and diesel fuel prices began to increase in the late winter of 2000, the calls for an SPR drawdown began to come from sections of the country other than the Northeast. The Administration continued to oppose a drawdown, investing its efforts instead in a number of trips by then-Secretary Richardson to the Middle East and elsewhere to talk with OPEC oil ministers, and the oil ministers of other oil-exporting nations. Following OPEC's commitment on March 28, 2000, to boost production, crude price began to decline to the mid-twenties. The pressure for an SPR drawdown had subsided by the first week of April 2000; however, it resumed in June 2000 when gasoline prices began to reach and breach \$2.00/gallon in the Midwest.

### **September 2000: A Swap Is Announced**

As the summer of 2000 ended, crude oil prices continued to escalate despite boosts in production by the OPEC cartel. Stocks of home heating oil had been at historic lows, and concern was growing about the fresh pressure that escalating crude prices, colder weather, and anticipated refinery maintenance might have on home heating price and supply during the winter. On September 22, 2000, President Clinton announced a swap of 30 million barrels of oil from the SPR, and contracts were awarded on October 4. Interested parties bid to borrow quantities of not less than 1 million barrels. Contracts were awarded on the basis of how much oil bidders offered to return to the SPR between August 1 and November 30, 2001. In effect, bidders based their offers on their best models of what it would cost them to acquire replacement crude, weighed against the benefit to them of having additional supply at the beginning of the winter. Although there were reports that interest in the swap was thin, this proved not to be the case. DOE awarded 24 million barrels of sweet crude, and 6 million barrels of sour. Under the contracts accepted by DOE, a total of 31.5 million barrels were to be returned to the SPR in 2001.

Over the course of the days between announcement of the swap and the day after the awards were made, crude prices softened from \$37 to less than \$31/bbl. It was arguable how much of this was attributable to the swap, or whether, absent the escalation in Middle East tensions during the week of October 9, 2000, the decrease would have been maintained anyway. It may have been that U.S. willingness to use the SPR temporarily took the wind out of a speculative element in the futures market. Some argued that the Administration announcement was a calculated political gesture to affect price, that the circumstances did not merit a drawdown of SPR oil, and that adding crude to the market would do little to boost home heating oil supply because refineries were operating at near capacity. Others contended that there was a legitimate need to call upon SPR supply, because it would increase supply and exert some stabilizing influence.

The preponderant risk in the transaction was borne by the oil companies or refiners who placed bids. The volume a refiner promised to return, and the price at the time the refiner acquired the replacement crude, determined the refiner's effective return on participating in the swap. However, in the absence of congressional appropriations to acquire oil for the SPR in recent years, the Reserve received under the swap a net acquisition that it would not have otherwise had. In that sense, it is not especially material whether or not the quantity of oil returned to the SPR was at price parity with the quantity originally borrowed. Criticism of

the swap was renewed when three bidders awarded a total of 10 million barrels of sweet crude were having difficulties securing letters of credit. Two were unable to meet the deadline; on October 14, 2000, DOE awarded the 7 million barrels they controlled to three firms who had been successful bidders in the initial solicitation.

The peculiar circumstances surrounding some of the original bidders spurred fresh criticism and congressional hearings into the swap, as did reports that higher prices for home heating oil in Europe were likely to draw product refined from the SPR crude to overseas market. Senator Frank Murkowski, Chairman of the Senate Energy Committee, issued a press release on October 6, 2000, underscoring the irony that oil from the U.S. SPR might relieve European, rather than domestic markets. While it can be argued that, in a world market, it does not greatly matter where the product goes, a principal issue here appeared to be the reluctance among some European nations to draw upon their own strategic stocks. Some European officials called for a coordinated stock drawdown by the European Union in light of the U.S. action, but opinion was divided among the membership. An advantage of any European drawdown is that stocks are held in the form of both refined products and crude; product would reach markets faster. European Union distillate stocks were reported to cover 100 days' demand. In October 2000, several domestic refiners indicated to DOE that they would temporarily cease exporting home heating oil.

On March 29, 2001, the repayment schedule was renegotiated to allow five companies to return nearly 24 million barrels of the swapped oil between December 2001-January 2003. To compensate for the extension of the schedule, DOE received additional oil, bringing the total projected repayment to 33.54 million barrels. Some assert that the schedule was renegotiated to keep pressure off crude markets, and to keep this volume of oil in the private sector where it could be tallied in industry stocks going into the winter of 2001-2002. Delivery of the last 5.9 million barrels yet to be replaced was renegotiated in December 2002 and again at the end of January 2003 as the fall in crude exports from Venezuela contributed to a tightness in world oil markets. Obligations were fully satisfied by January 2004.

## CHRONOLOGY

**10/07/05** — The House passed H.R. 3893 (212-210), the Gasoline for America's Security Act. Among other provisions, it would expand the NHOR to 5 million barrels.

**09/02/05** — The Administration announced it was making 30 million barrels of SPR oil available for bid. On September 14, the Administration announced it had accepted bids for 11 million barrels.

**08/31/05** — The Administration announced that it would make SPR oil available to refiners who requested a loan of crude supply. By mid-September, seven loans totaling 13.2 million barrels had been approved.

**08/08/05** — The President signed the Energy Policy Act of 2005 which, among other provisions, permanently authorizes the SPR, and calls for fill of the SPR to 1 billion barrels, subject to consideration of the effect upon markets of acquiring oil for the Reserve. There are other factors the Secretary will be required to weigh.

**09/23/04** — The Administration announced it would loan less than 2 million barrels of SPR crude to refiners that had been adversely affected by interruptions in normal crude deliveries owing to Hurricane Ivan. Loan of SPR oil ultimately reached 5.4 million barrels.

**02/14/04** — A less costly version of H.R. 6 (S. 2095) was introduced in the Senate. It did not provide funds for expansion of the SPR, but otherwise included the SPR language approved by the conferees on H.R. 6. The 108<sup>th</sup> Congress would adjourn without passing comprehensive energy legislation.

**11/23/03** — A cloture motion to limit debate on the conference report on comprehensive energy legislation (H.R. 6) in the Senate failed (57-40).

**07/31/03** — The Senate passed its version of H.R. 6. It would have permanently authorized the SPR and require that it be filled to its capacity, but did not include any provisions for its expansion.

**04/11/03** — The House passed its version of comprehensive energy legislation, H.R. 6, which would have permanently authorized the SPR and provided \$1.5 billion to finance expansion of the SPR to 1 billion barrels.

**02/13/03** — H.J.Res. 2, passed in both the House and Senate, included a five-year extension of the SPR and NHOR authorities through the end of FY2008 (P.L. 108-7).

**09/24/02** — Conferees on comprehensive energy legislation (H.R. 4) agreed to language that would permanently authorize the SPR and require fill to its capacity at that time of approximately 700 million barrels. The 107<sup>th</sup> Congress would adjourn without enacting this legislation.

**11/13/01** — President George W. Bush ordered that the SPR be filled to its capacity at that time of 700 million barrels with oil paid to the government as royalty-in-kind.

**11/09/00** — President Clinton signed legislation (P.L. 106-469, H.R. 2884) reauthorizing the SPR and permanently establishing a Northeast Heating Oil Reserve (NHOR).

**09/22/00** — President Clinton authorized a “swap” of 30 million barrels from the SPR.

**02/11/99** — Secretary of Energy Bill Richardson announced a plan that would provide 28 million barrels of oil to the SPR at the rate of 100,000 b/d of crude oil as payment “in-kind” of royalties on federal leases in the Gulf of Mexico.

**11/13/96** — DOE accepted another \$53.5 million in bids for SPR oil authorized to be sold during FY1997, raising total sales for the fiscal year to \$142 million, roughly two-thirds of the amount authorized by P.L. 104-208.

**04/29/96** — President Clinton ordered the release of 12 million barrels of SPR oil to help blunt a recent runup in crude and product prices.

**03/00/96** — DOE completed sale of SPR oil authorized to finance emptying and decommissioning of the Weeks Island site. Owing to higher crude prices, sale of 5.1 million

barrels, at an average price of \$18.92/bbl, was sufficient to generate \$96.4 million in revenues.

**09/30/94** — The FY1995 Department of the Interior and Related Agencies Appropriations Act (P.L. 103-332) essentially curtailed oil purchases and fill of the SPR for FY1995, in keeping with the Clinton Administration's budget proposal.

**10/24/92** — P.L. 102-486 enacted, broadening the circumstances under which the SPR could be tapped, providing for expansion of the SPR to 1 billion barrels.

**06/19/92** — The SPR took delivery of the first oil since fill was suspended in 1990.

**02/25/91** — The George H. W. Bush Administration announced it was preparing to resume purchase of oil for the SPR on international spot markets at a rate of 25,000 b/d for three months.

**01/16/91** — Within hours of the initial air attacks on Iraq, President George H. W. Bush authorized a drawdown of the Strategic Petroleum Reserve in support of a plan agreed to just days earlier by the International Energy Agency.

**08/08/90** — The George H. W. Bush Administration indicated its willingness to use the SPR in the event of "any severe supply interruption," but indicated that any release of SPR crude would be coordinated with U.S. allies.

**08/01/90** — Iraqi forces invaded Kuwait. Acquisition of oil for the SPR was suspended.

**07/11/84** — The IEA agreed in principle that government-owned or -controlled oil stocks should be used early during a supply disruption if deemed helpful to calming nervous oil markets and restraining price increases. The agreement did not supersede the emergency sharing program already in place, but was intended to broaden the repertoire of emergency responses that the IEA may consider.

**01/24/84** — Secretary of Energy Donald Hodel testified before the Senate Subcommittee on Energy, Nuclear Proliferation, and Government Processes of the Committee on Governmental Affairs that the Reagan Administration supported early use of the Strategic Petroleum Reserve during a disruption.

**05/00/82** — DOE released a report required by the Omnibus Budget Reconciliation Act of 1981, which concluded that a Reserve larger than 750 million barrels would not provide net economic benefits to the United States.

**06/30/80** — Congress passed the Energy Security Act requiring that the SPR be filled at a rate of at least 100,000 b/d for FY1981 beginning October 1, 1980. Fill was resumed in late September 1980.

**03/00/79** — Purchase of oil for the SPR was suspended because of the tight international crude oil market, Saudi objections, and budget considerations.

**08/00/77** — First crude oil pumped into SPR.