REPORT BY THE U.S.

General Accounting Office

Status Of Strategic Petroleum Reserve Activities As Of December 31, 1984

The Department of Energy reported that the Strategic Petroleum Reserve contained 450.5 million barrels of oil on December 31, 1984. During the first quarter of fiscal year 1985, about 19.4 million barrels of oil were added for a fill rate of 211,000 barrels per day.

This report discusses the progress being made in filling, developing, and operating the Reserve. It also discusses other events and activities affecting the Reserve that occurred during the first quarter of fiscal year 1985.

126124

GAO/RCED-85-58
JANUARY 22, 1985

Request for copies of GAO reports should be sent to:

U.S. General Accounting Office
Document Handling and Information
Services Facility
P.O. Box 6015
Gaithersburg, Md. 20760

Telephone (202) 275-6241

The first five copies of individual reports are free of charge. Additional copies of bound audit reports are $3.25 each. Additional copies of unbound report (i.e., letter reports) and most other publications are $1.00 each. There will be a 25% discount on all orders for 100 or more copies mailed to a single address. Sales orders must be prepaid on a cash, check, or money order basis. Check should be made out to the "Superintendent of Documents".

UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

RESOURCES, COMMUNITY,
AND ECONOMIC DEVELOPMENT
DIVISION

B-208196

The Honorable James A. McClure
Chairman, Committee on Energy and
Natural Resources
United States Senate

The Honorable J. Bennett Johnston
Ranking Minority Member, Committee
on Energy and Natural Resources
United States Senate

On March 25, 1982, the Senate Committee on Energy and Natural Resources requested that we report on a quarterly basis, through fiscal year 1985, on the Department of Energy's (DOE's) progress in filling the Strategic Petroleum Reserve (SPR) and in complying with the requirements of applicable law. This is the 11th quarterly report. A list of our prior reports is contained in table 12 in appendix II.

In this report, we discuss events and activities related to the administration's progress in filling, developing, and operating the SPR during the first quarter of fiscal year 1985. Specifically, we note that during the quarter:

--The Secretary of Energy announced that DOE is considering a proposal to stop filling the SPR at the end of fiscal year 1985, when the SPR will contain about 489 million barrels of oil.

--DOE added 19.4 million barrels of oil, bringing the total amount of oil in the SPR to 450.5 million barrels. The oil fill rate averaged 211,000 barrels per day during the quarter. DOE paid $428 million for oil acquisition and transportation, had unpaid obligations of about $1,196 million, and had about $983 million in unobligated funds available for additional oil purchases.

--The storage capacity development program proceeded without any major problems, generally achieving DOE goals.

--DOE submitted a proposal to the Congress to reprogram about $50 million for SPR distribution system improvements.

--The National Petroleum Council approved its committee's report on the SPR. The report made nine recommendations to improve SPR oil distribution and use during an oil supply disruption.

--DOE submitted its final report to the Office of Personnel Management on the grade structure at the SPR Project Management Office in New Orleans, Louisiana. DOE downgraded 40 of the 84 positions that were reviewed.

This report also presents information on other SPR issues. These include (1) the selection of a new SPR management, operations, and maintenance contractor, (2) an amendment to the DOE/Department of Defense interagency agreement for SPR oil acquisition and transportation to improve oil accountability procedures, (3) DOE's compliance with the Cargo Preference Act of 1954 (46 U.S.C. 1241(b)), and (4) the SPR Project Management Office's efforts to implement the recommendations of two Oak Ridge Operations Office reports on the SPR program. (See app. I for more details and app. II for supporting tables and figures.)

OBJECTIVES, SCOPE, AND METHODOLOGY

We limited our review, because of the time allowed, to providing primarily statistical information and highlights of major activities that occurred during the period covered. To obtain this information, we reviewed DOE program documents, publications, and studies; and we interviewed DOE managers and operating personnel responsible for planning and managing activities associated with the development and operation of the SPR facilities. We also interviewed personnel from DOE contractors; the Defense Fuel Supply Center, DOE's purchasing agent for most of the SPR oil; and the National Petroleum Council's committee that assessed the SPR.

Our review was performed in accordance with generally accepted government auditing standards, except that we did not verify the volumes or quality of oil that DOE received nor the available capacity of SPR storage facilities. We did not do this because the effort required was beyond the scope of this report.

We did not obtain official agency comments because of the required time frame for issuing this report. However, we provided DOE and Defense Fuel Supply Center program officials with a draft of this report, discussed its factual accuracy with them, and made appropriate revisions.

- - - -

As arranged with your office, we plan no further distribution of this report until 7 days after the issue date, unless you publicly announce its contents earlier. At that time, we will provide copies to the Secretary of Energy and other interested parties and make copies available to the public upon request.

J. Dexter Peach
Director

Contents

ABBREVIATIONS

API	American Petroleum Institute
DFSC	Defense Fuel Supply Center
DOD	Department of Defense
DOE	Department of Energy
GAO	General Accounting Office
NPC	National Petroleum Council
OPM	Office of Personnel Management
PEMEX	Petroleos Mexicanos
POSSI	Petroleum Operations and Support Services, Inc.
SPR	Strategic Petroleum Reserve

STATUS OF STRATEGIC PETROLEUM RESERVE ACTIVITIES AS OF DECEMBER 31, 1984

The Energy Policy and Conservation Act (Public Law 94-163, Dec. 22, 1975) authorized the creation of a Strategic Petroleum Reserve (SPR) to store up to 1 billion barrels of oil. To meet the act's goals, the Department of Energy (DOE) is implementing a three-phase plan to store 750 million barrels of oil. Phase I of this plan, the storage of about 260 million barrels of oil, is complete. It consisted of acquiring and modifying for oil storage existing caverns in salt deposits at Bryan Mound, Texas; Bayou Choctaw, Sulphur Mines, and West Hackberry, Louisiana; and a salt mine at Weeks Island, Louisiana, as well as constructing a marine terminal at St. James, Louisiana. Phase II is scheduled for completion in 1987. It involves creating new caverns through a leaching program at three of the phase I sites to increase SPR capacity to about 550 million barrels. The leaching program entails pumping fresh water into salt deposits and removing the resultant brine. DOE injects oil into the top of the cavern as the leaching process creates the storage capacity. Phase III, which is scheduled for completion in 1990, will create additional capacity to reach the 750-million-barrel goal by expanding three existing storage sites and developing a new site at Big Hill, Texas. Because of the time needed to develop capacity, activities associated with phases II and III overlap.

The SPR storage sites are connected by pipeline to three marine terminals for oil fill and for oil drawdown and distribution during an oil supply disruption:

--Seaway complex: The Bryan Mound storage site is connected to Phillips Petroleum Co.'s terminal (formerly, the Seaway terminal) in Freeport, Texas.

--Texoma complex: The West Hackberry and Sulphur Mines storage sites are connected, and the Big Hill storage site will be connected, to Sun Oil Co.'s terminal in Nederland, Texas.

--Capline complex: The Weeks Island and Bayou Choctaw storage sites are connected to DOE's St. James terminal.

In June 1983, DOE reorganized the SPR project management structure. Responsibility for project direction was transferred from the Project Management Office (Project Office) in New Orleans, Louisiana, to the Oak Ridge Operations Office (Operations Office) in Oak Ridge, Tennessee. The SPR Program Office in Washington, D.C., retained responsibility for overall program management and planning.

This report discusses activities during the quarter ending December 31, 1984, that affect the SPR, including (1) the Secretary of Energy's announcement that DOE is considering a proposal to stop filling the SPR after fiscal year 1985, (2) the activities associated with adding 19.4 million barrels of oil to the SPR and the status of SPR oil acquisition and transportation funds, (3) the cavern leaching program at the SPR storage sites, (4) DOE's proposal to reprogram fiscal year 1985 funds for SPR oil distribution system improvements, (5) the National Petroleum Council's (NPC's) report on the SPR, and (6) DOE's review of the Project Office's grade structure. This report also provides information about the selection of a new SPR management, operations, and maintenance contractor; an amendment to the DOE/Department of Defense (DOD) interagency agreement for SPR oil acquisition and transportation to improve oil accountability procedures; DOE's compliance with the Cargo Preference Act of 1954 (46 U.S.C. 1241(b)); and the Project Office's efforts to implement recommendations of two Operations Office reports on the SPR program. Appendix II presents supporting tables and figures.

PROPOSAL TO LIMIT SPR SIZE

On December 11, 1984, the Secretary of Energy announced that DOE is considering a proposal to stop filling the SPR at the end of fiscal year 1985, when about 489 million barrels of oil will be in storage. To support the proposal, he cited budget savings and said that the mid-December 1984 SPR inventory was equivalent to about 98 days of U.S. crude and petroleum product imports. The Secretary of Energy pointed out that the original SPR goal was to store the equivalent of a 90-day supply of U.S. crude oil imports and that this fulfills the United States' commitment to the International Energy Agency. He said that under the proposal, DOE could resume filling the SPR if U.S. oil imports increased in the future, thereby requiring a larger SPR to protect the economy from an oil supply disruption.

If the administration's fiscal year 1986 budget proposes to stop filling the SPR at the end of fiscal year 1985, DOE will have to review fiscal year 1985 funding levels for SPR activities and some related issues. For example, the second Supplemental Appropriations Act for Fiscal Year 1984 (Public Law 98-396) appropriated $459.2 million. DOE had informed the Congress in its budget request that $324 million would be spent on the development of phase III storage facilities, including $289 million for construction of the Big Hill storage site. Phase III of the SPR program would not be necessary under the DOE proposal since it would add the final 200 million barrels of capacity to the 750-million-barrel SPR. (In his announcement, the Secretary of Energy stated that construction of the Big Hill site would not be needed if oil fill is stopped at the end of fiscal year 1985.)

In addition, the Continuing Resolution for Fiscal Year 1985 (Public Law 98-473, Oct. 12, 1984) appropriated $2.05 billion for SPR oil acquisition and transportation. This includes funds for a fill rate of at least 159,000 barrels per day in fiscal year 1985 plus funds for some purchases in fiscal year 1986. Using the administration's fiscal year 1985 budget assumption that oil acquisition and transportation would cost $30.79 per barrel in fiscal year 1985, about $760 million would remain available for fiscal year 1986 oil purchases. Using the fiscal year 1985 budget's oil acquisition and transportation cost assumption of $30.87 per barrel in fiscal year 1986, DOE could acquire an additional 25 million barrels of oil.[1]

A decision to limit the SPR's size to 489 million barrels of oil also could require changes to the Energy Policy and Conservation Act. First, section 160(c) of the act requires a minimum average annual fill rate of 300,000 barrels per day until at least 500 million barrels of oil are stored. (The section provides that if the President finds that this rate is not in the national interest, the minimum rate becomes 220,000 barrels per day or the highest practicable fill rate achievable with available funds.) Second, section 160(d) of the act prohibits the administration from selling or distributing its share of Elk Hills Naval Petroleum Reserve[2] oil other than to the SPR unless either the SPR oil fill rate for the given fiscal year is at least 100,000 barrels per day or the SPR contains at least 500 million barrels. Thus, if the administration wishes to sell additional Naval Petroleum Reserve oil after fiscal year 1985, it will have to seek repeal of the section 160(c) SPR fill rate requirement. The Energy Policy and Conservation Act expires on June 30, 1985. Congressional oversight committees plan to consider legislation to extend and/or amend the act, including sections 160(c) and 160(d).

If the fiscal year 1986 budget proposes to limit the SPR's size to 489 million barrels of oil, the administration will have to consider:

---

[1]World oil prices are lower than the fiscal year 1985 budget's estimated price. This would enable DOE to buy even more oil.

[2]The Elk Hills Naval Petroleum Reserve, located near Bakersfield, California, is jointly owned by the U.S. government and Chevron U.S.A., Inc. The government's share was 108,000 of the 138,000 barrels per day of oil produced in fiscal year 1984.

--submitting a rescission message to the Congress for the unobligated portion of the $324 million appropriated by the second Supplemental Appropriations Act for Fiscal Year 1984, which DOE intends to use for phase III activities;[3]

--submitting a rescission message to the Congress for the approximately $760 million that would be available for fiscal year 1986 oil acquisition and transportation;

--seeking repeal of the SPR oil fill rate requirements in sections 160(c) and 160(d) of the Energy Policy and Conservation Act when the Congress considers legislation to extend the act later this year;

--terminating the 1981 multiyear contract with Petroleos Mexicanos (PEMEX), the Mexican national oil company, that would provide the SPR with 16.8 million barrels of oil from October 1, 1985, to August 31, 1986, when the contract expires;

--amending the SPR Plan for the design, construction, and fill of SPR facilities to take account of the smaller SPR size; and

--revising its proposal to improve the SPR oil distribution system.

If, however, the administration and the Congress decide to continue filling the SPR, they will have to agree on an oil fill rate for fiscal year 1986. Figure 1 and table 1 on pages 17 and 18 show four alternative SPR oil fill rates for a 750-million-barrel SPR. The fill rates are based on the 300,000- and 220,000-barrels-per-day rates cited by the Energy Policy and Conservation Act and the 145,000-barrels-per-day rate and the storage capacity development schedule proposed in the administration's fiscal year 1985 budget. Assuming a fill rate of 159,000 barrels per day for fiscal year 1985 (which is the minimum fill rate that the continuing resolution established), the 300,000- and the 220,000-barrels-per-day rates would fill the SPR in fiscal years 1988 and 1989, respectively, but would require DOE to lease commercial interim storage. The 145,000-barrels-per-day rate would fill the SPR in fiscal year 1990--the same year as the storage-capacity-development rate. If the fill rate is reduced to 100,000 barrels per day, a 750-million-barrel SPR would be filled by the end of 1992.

---

[3]The Impoundment Control Act of 1974 (2 U.S.C. 683) requires the administration to make the funds covered by a rescission message available for obligation unless the Congress approves the rescission within 45 working days after the message is submitted.

SPR OIL FILL ACTIVITIES AND FUNDING

DOE reported that 19.4 million barrels of oil were added to the SPR during the quarter ending December 31, 1984, bringing the total SPR inventory to 450.5 million barrels. The average SPR oil fill rate for the quarter was 211,000 barrels per day. (See fig. 2 and tables 2 through 5 on pp. 19-23 for further information on the SPR oil acquisition and fill activities.) About 4.5 million barrels, or 23 percent, of the oil delivered in the first quarter of fiscal year 1985 came from the 1981 PEMEX contract. About 14.9 million barrels, or 77 percent, were delivered under contracts that the Defense Fuel Supply Center (DFSC--a DOD agency) had awarded through its open, continuous solicitation.[4] Of the 450.5 million barrels of oil in storage as of December 31, 1984, 38 percent was sweet (low sulfur) crude, 49 percent was sour crude, and 13 percent was a combination of lower quality crude oils. (See table 3 for SPR oil quality specifications.)

During the quarter, several oil-producing countries, mainly sweet crude oil producers, reduced their official selling prices. In particular, the United Kingdom reduced its prices by $1.35 per barrel--from $30 per barrel to $28.65 for North Sea oil from the Brent field--and Nigeria reduced prices for its three highest quality crude oils by $2 per barrel. DFSC awarded 15 contracts, totaling 12.6 million barrels, through the open, continuous solicitation during the quarter. On October 18, 1984, DFSC paid $27.50 per barrel for 500,000 barrels of Brent oil delivered to the SPR by a foreign-flag tanker (a tanker registered in a foreign country). According to DFSC officials, this was at a low point of the spot market during the quarter.

During the quarter, DOE made payments of $428 million for oil acquisition and transportation. Program Office personnel stated that as of December 31, 1984, DOE had unpaid obligations of about $1,196 million and unobligated funds of about $983 million. (See table 6 on p. 24.)

STORAGE CAPACITY DEVELOPMENT

During the quarter, the phase II storage capacity leaching program proceeded without any major problems, generally achieving DOE goals for capacity development. (See tables 7 and 8 on pp. 25 and 26.) Project Office officials stated that the West Hackberry instrumentation and control system is operating, but that some

---

[4]The open, continuous solicitation is a mechanism DFSC--the purchasing agent for most of the SPR oil--uses to purchase SPR oil. It involves the use of a purchasing solicitation that is not reissued but rather remains open, allowing offers of oil to be made about every 2 weeks. The offers usually involve oil that is available on the "spot," or short-term, market.

tasks remain before the system is completed. DOE continued its program to inspect SPR crude oil, water intake, and brine pipelines for corrosion. DOE also took some actions to develop the Big Hill storage site, but postponed contracting activities for construction of the Big Hill crude oil, water intake, and brine pipelines.

West Hackberry

The West Hackberry leaching program operated without major problems during the quarter, creating about 12.1 million barrels of permanent oil storage capacity. The brine disposal rate averaged 884,000 barrels per day as compared with the baseline brine disposal rate of 900,000 barrels per day. Of the 16 phase II caverns, 4 are full, 3 are in the final-fill stage, 3 are in the leach/fill stage, and 6 are in the initial leaching-only stage. Site preparation work continued for the phase III cavern, including construction of the well pad and surface pipeline tie-ins and installation of electrical conduits. The site construction work is scheduled for completion in mid-April 1985.

Our June 1983 quarterly report[5] discussed DOE's effort to install the West Hackberry instrumentation and control system. DOE will use the instrumentation and control system to centrally monitor the flow of crude oil, water, and brine into and out of the storage caverns. In December 1984, Project Office officials said the West Hackberry system was operating; however, the contractor has not yet tested all of the installed components. The following tasks need to be done before the West Hackberry instrumentation and control system is completed:

--The Project Office plans to complete the testing of the 4,000 control points in early January 1985. Over 90 percent of the system points have been tested.

--The contractor currently is working on software problems for the main computer, which will consolidate onto one console the operations data that are currently displayed on four pieces of equipment in the control room.

--Additional electrical work is needed before the water intake structure's[6] equipment can be connected to the instrumentation and control system. The Project Office expects this work to take about 2 months.

---

[5]Status of Strategic Petroleum Reserve Activities as of June 30, 1983 (GAO/RCED-83-203, July 13, 1983).

[6]The West Hackberry water intake structure, which is located on the Louisiana intracoastal waterway about 4.5 miles from the storage site, supplies water by pipeline for the Phase II leaching program and, in the event of an oil supply disruption, for withdrawing the oil from the storage caverns.

The Project Office plans to begin testing the West Hackberry site's instrumentation and control system in January 1985. Subsequently, it will test the system at the water intake structure once work is completed.

Our December 1983 report[7] discussed potential corrosion problems with the crude oil pipeline from the St. James terminal to Bayou Choctaw. DOE subsequently requested Petroleum Operations and Support Services, Inc. (POSSI), the SPR operations and maintenance contractor, to test all SPR crude oil pipelines for corrosion. POSSI hired C.E. Vetco, Inc., to identify any corrosion problems in the 42-mile crude oil pipeline from the Sun Oil Co. marine terminal to West Hackberry. According to POSSI personnel, Vetco's preliminary analysis of the mid-November 1984 test's data identified two potential problem points. Vetco wants to excavate the pipeline at these points to investigate before making a final report.

In our June 1984 report,[8] we discussed an onsite brine pipeline rupture at Bryan Mound that was caused by corrosion. In response to the pipeline rupture, the Project Office decided to test the water intake and brine pipelines at all of the storage sites to determine the extent of pipeline corrosion. The Project Office awarded a contract on October 26, 1984, to H&G Inspection Co., Inc., to conduct ultrasonic tests on the 10 water intake and brine disposal pipelines at West Hackberry. Test points on the pipelines are being excavated, and the ultrasonic testing is scheduled for January 1985.

Bryan Mound

The Bryan Mound leaching program operated without major problems during the quarter, creating about 9.9 million barrels of permanent oil storage capacity. The brine disposal rate averaged 617,000 barrels per day as compared with the baseline rate of 900,000 barrels per day. The rate was low mainly because the cavern leaching program was shut down from October 14 to 30, 1984, for scheduled maintenance. This included replacing valves, preventive maintenance for electrical motor control centers, cleaning the brine pond, calibrating water intake structure equipment, and dredging to remove silt from around the intake structure. Of the 12 phase II caverns, 7 are filled, 3 are in the final-fill stage, and 2 are in the leach/fill stage. All four phase III caverns are in the leaching-only stage.

---

[7]Status of Strategic Petroleum Reserve Activities as of December 31, 1983 (GAO/RCED-84-92, Jan. 13, 1984).

[8]Status of Strategic Petroleum Reserve Activities as of June 30, 1984 (GAO/RCED-84-182, July 13, 1984).

POSSI hired AMF Tuboscope to identify any corrosion problems in the crude oil pipelines between Bryan Mound and Phillips Petroleum Co.'s marine terminal and storage tank farm at Jones Creek. According to POSSI personnel, AMF Tuboscope's preliminary analysis identified two potential problem points between Bryan Mound and the Jones Creek tank farm. One point was excavated, and a box of welding rods was found near the line, which caused a false reading. The other point will be excavated in January 1985.

Project Office and Aerospace Corporation engineers have analyzed the results of the ultrasonic testing program to measure corrosion in the Bryan Mound water intake and brine disposal pipelines. The corrosion levels were not significant enough to warrant continued testing, so the Project Office decided to stop the testing program for the near future. However, the engineers were concerned about the amount of corrosion at one point near where brine is discharged into the brine pond, and they proposed that the point be tested annually beginning in late 1985.

Bayou Choctaw

On October 16, 1984, DOE completed leaching the phase II cavern, which has a gross capacity of 6.1 million barrels. DOE is pressure testing the cavern, and in accordance with a prior agreement,[9] will exchange it for a 10-million-barrel cavern that Allied Chemical Corp. owns. DOE expects that the transfer of ethane from the Allied Chemical cavern to the new cavern will begin in February 1985.

On October 26, 1984, the Project Office gave Dillco, Inc., notice to proceed with drilling the two wells for the phase III cavern. Drilling is scheduled to be completed in May 1985.

Weeks Island

DOE began work in December 1984 to replace a section of the crude oil pipeline between Weeks Island and the St. James marine terminal. The pipeline section had developed a "kink," which prevented an electronic measuring tool (known as an instrumented pig) from traveling through the pipeline. Work is scheduled for completion next quarter. DOE plans to send the instrumented pig through the crude oil pipeline and is negotiating with a contractor to analyze the electronic readings to identify any corrosion problems.

---

[9]According to Project Office personnel, in December 1982, Allied Chemical Corp. settled its law suit against DOE, which had used federal condemnation procedures to obtain Allied Chemical's land for the Bayou Choctaw SPR storage site. As part of the settlement, DOE agreed to leach a cavern with at least 4.5 million barrels of usable capacity and then exchange it for a 10-million-barrel cavern that Allied Chemical currently uses to store ethane.

Big Hill

During the quarter, DOE proceeded with some activities associated with the development of the phase III Big Hill storage site. On November 30, 1984, DOE gave Drillers, Inc., notice to proceed to drill the wells for the last 4 of the 14 caverns for Big Hill.[10] Completion of these wells is scheduled for September 1985. In our March 1984 quarterly report,[11] we noted that DOE had eight long-lead equipment contracts for Big Hill. As of December 31, 1984, all of this equipment had been delivered except for two vertical pumps, a distribution control center, and three electrical load centers.

A U.S. Army Corps of Engineers attorney responsible for Big Hill land acquisition stated that the government probably will acquire all of the rights-of-way for the crude oil pipeline from the Sun Oil Co. marine terminal to Big Hill by early 1985. The Corps of Engineers is using federal condemnation procedures to acquire the rights-of-way.

The Project Office postponed contracting activities associated with selecting contractors for the construction of the Big Hill crude oil, water intake, and brine disposal pipelines. DOE had planned to issue an invitation for bids for the crude oil pipeline and award a contract for the water intake and brine disposal pipelines in December 1984.[12]

SPR OIL DISTRIBUTION

In our June 1984 and September 1984[13] quarterly reports, we discussed DOE's proposal to correct problems in the SPR oil

---

[10]DOE drills wells several thousand feet underground into a salt dome formation. Once the wells are complete and water intake and brine pipelines and pumping equipment have been installed, the cavern leaching program can begin.

[11]Status of Strategic Petroleum Reserve Activities as of March 31, 1984 (GAO/RCED-84-148, Apr. 13, 1984).

[12]The Office of Management and Budget has informally advised us that, if a decision is made to stop filling the SPR, an impoundment message will be sent to the Congress at the time of submission of the President's budget in early February. A reasonable delay by the executive branch while the funds are being withheld, in order to make the decision and prepare and submit the message, is permissible under the Impoundment Control Act (B-200685, Apr. 13, 1981). GAO will monitor this situation to prevent any unreasonable delay in reporting the withholding to the Congress pursuant to the act.

[13]Status of Strategic Petroleum Reserve Activities as of September 30, 1984 (GAO/RCED-85-40, Oct. 15, 1984).

distribution system caused when Texoma Pipeline Co. and Seaway Pipeline Inc. sold their interstate crude oil pipelines. In an October 29, 1984, letter DOE notified the chairmen and ranking minority members of the congressional subcommittees responsible for SPR oversight and appropriations of its proposal to reprogram $49.5 million to implement the distribution system improvements. The proposal would shift storage facilities development funds provided by the second Supplemental Appropriations Act for Fiscal Year 1984 from phase III work to non-phase specific work.

DOE estimated that $97.2 million will be required for the distribution system improvements--$85.2 million for construction of DOE-owned pipelines and $12 million for modifications and tie-ins to commercially owned facilities. The reprogramming letter stated that the change in funding would not cause deletion or slowing of work schedules for phase III facilities development because DOE has continued to receive bids for phase III construction that are less than anticipated, owing to economic conditions in the oil drilling and construction industries.

On November 27, 1984, the chairman and the ranking minority member, Subcommittee on Interior and Related Agencies, House Committee on Appropriations, approved the reprogramming. As of December 31, 1984, the Subcommittee on Interior, Senate Committee on Appropriations, had not responded to the reprogramming letter.

The sale of the Texoma pipeline was completed on November 15, 1984, when Houston Natural Gas Corporation took title to the pipeline. Houston Natural Gas had obtained Federal Energy Regulatory Commission approval to use the pipeline for interstate natural gas transmission in October 1984, and it plans to begin transmitting natural gas in the section between Longview, Texas, and Nederland, Texas, in February 1985.

NPC REPORT

In November 1983, the Secretary of Energy requested that NPC study the types of crude oil stored in the SPR, capabilities to transport the oil from SPR storage sites to refineries, and long-term availability and movement patterns of oil tankers. As discussed in our March 1984 quarterly report, NPC established a committee with four task groups to study SPR oil drawdown and distribution. NPC approved the committee's report on December 12, 1984, and issued it on January 4, 1985.[14]

The NPC report, which assumed that the SPR will contain 750 million barrels of oil, made nine recommendations to ensure timely

[14]NPC, The Strategic Petroleum Reserve: A Report on the Capability to Distribute SPR Oil, December 1984.

and efficient drawdown, distribution, and refining of SPR crude oil. (See table 9 on p. 27.) In particular, NPC recommended that DOE (1) should change the SPR oil mix to increase the percentage of sweet (low-sulfur) oil from the currently planned 35 percent (262.5 million barrels) to at least 43 percent (322.5 million barrels) of a 750-million-barrel SPR, (2) provide ballast water treatment facilities[15] or alternative means of ballast water disposal for all SPR marine facilities, (3) implement its proposed construction projects to increase the SPR's distribution system capability, (4) consider shifting 100 million barrels of storage capacity from the Texoma complex to the Capline complex, and (5) conduct periodic drawdown exercises that include industry participation but that need not involve the physical sale of SPR oil.

The recommendations were based on NPC's analysis of the impact of a crude oil supply disruption in 1990. The analysis used a worst case assumption that the only U.S. crude oil and petroleum product imports during the disruption would come from Canada and that these imports would be balanced by an equal amount of oil exports to Canada. NPC made this assumption in part to constrain available oil supplies and thus require a maximum SPR drawdown of 4.5 million barrels per day. NPC found that while DOE plans to have 35 percent sweet crude oil in the SPR, NPC projects that in 1990 (1) sweet crude will be 42 percent of the U.S. crude oil imports for a business-as-usual scenario and (2) U.S. refineries would require that 43 percent of the SPR oil drawn down under its disruption scenario be sweet crude.

NPC noted that SPR marine terminals currently are not equipped with sufficient ballast water treatment facilities and that current DOE estimates for sustainable marine terminal loading rates do not include time for tankers to discharge dirty ballast water. As a result, NPC found that the estimated loading rates could be constrained by as much as 30 percent during an SPR drawdown, restricting SPR oil distribution accordingly. To determine the most effective way to resolve the ballast problem, NPC suggested that DOE conduct a cost-benefit study of (1) constructing ballast water treatment facilities at SPR marine terminals, (2) connecting SPR facilities with nearby terminals to increase dock utilization, (3) injecting ballast water discharge from tankers into SPR caverns, and (4) exempting tankers that load oil at SPR terminals during a disruption from the Act to Prevent Pollution from Ships (33 U.S.C. 1901-1911). DOE has initiated a study to evaluate NPC findings and recommendations on providing

---

[15]Ballast is seawater that is taken into the cargo tanks after oil is unloaded to submerge the tanker to a proper stability or draft. Federal law requires that adequate facilities be available at U.S. ports and terminals to receive and process a tanker's ballast to reduce pollution of U.S. coastal waters or the ocean.

APPENDIX I

ballast and barge facilities at SPR marine terminals and case-by-case waivers of the Jones Act requirement to use U.S.-flag vessels (vessels registered in the United States).[16] A DOE Program Office official stated that ballasting and barging facilities may not be needed if the Jones Act is waived for an SPR drawdown.

NPC endorsed DOE's decision to construct an approximately 50-mile pipeline to connect the Bryan Mound SPR storage site to refineries and a marine terminal in the Texas City/Houston, Texas, area. NPC pointed out that the Bryan Mound to Texas City pipeline is preferable to an alternative that would increase tanker movements through Freeport, Texas, because a pipeline would reduce oil tanker demand and movement scheduling during a disruption. The report also noted that the depth of the Freeport ship channel restricts the size of tankers that can be used and vessels over 615 feet long are required to move only during daylight. For the 1990 disruption scenario, NPC projects that Texas City/Houston area refineries will process 1.9 million (13 percent) of the 14.3 million barrels per day of U.S. refinery output.

NPC also supported DOE's decisions to construct a 9-mile pipeline from the West Hackberry SPR storage site to two Lake Charles, Louisiana, refineries and marine terminals; connect the Big Hill SPR storage site to a second marine terminal; and increase the Sun Oil Co. marine terminal's distribution capacity. In addition, NPC supported a DOE proposal to increase the St. James marine terminal's capacity from 880,000 barrels per day to 1.07 million barrels per day.

NPC found, however, that the sale of the Seaway and Texoma interstate crude oil pipelines had created an imbalance between the three SPR complexes that would require additional tanker or barge movements during an oil supply disruption to supply major Midwest and lower Mississippi River refining centers. NPC estimated that while the Texoma complex could supply local or pipeline-connected refinery capacity for 193 days, the Capline complex could supply local or pipeline-connection refinery capacity for only 28 days. Consequently, NPC recommended that DOE conduct a detailed economic evaluation of relocating 100 million barrels of storage capacity or connecting the Texoma complex by pipeline to the Capline complex. The DOE Program Office plans to institute a study that compares alternatives to shift storage capacity, build a DOE-owned pipeline, use commercial pipelines, or rely on waterborne transportation.

---

[16]The Jones Act (46 U.S.C. 883) requires the use of U.S.-flag vessels to transport cargo between two U.S. ports. The act can be waived at the request of the Secretary of Defense to the extent deemed necessary in the interest of national defense. (Public Law 81-891, 64 Stat. 1120.) If the Jones Act is waived for SPR shipments during an oil supply disruption, foreign-flag tankers could be used.

Regarding drawdown tests, NPC found that DOE needs to give special attention to conducting periodic training exercises of SPR facilities' physical capabilities and the administrative procedures to coordinate and process information requirements and bids for SPR oil. NPC stated that exercises to ensure physical deliverability of SPR oil, including marine and pipeline capabilities, need not involve the sale of SPR oil. Alternatively, NPC proposed that DOE could exchange SPR oil for an equivalent amount and quality of oil to be provided later. NPC stated that this would avoid unnecessarily impacting the crude oil market and would remove DOE's exposure to price changes for the replacement crude oil purchases.

In the transmittal letter for the report, the NPC chairman said that most of NPC's recommendations would continue to apply even if the administration stopped filling the SPR at the end of fiscal year 1985. He noted, however, that little opportunity would exist to change the SPR oil mix and oil fill locations.

PROJECT OFFICE GRADE STRUCTURE REVIEW

Our March 1984 quarterly report discussed the preliminary results of the Project Office's review of the grade structure for many of its employee positions. The Project Office initiated the review in response to an August 1983 Office of Personnel Management (OPM) report, which recommended that 7 classifications be upheld, 21 positions be downgraded, and 1 position be reclassified to a different occupation. OPM also required that DOE review 42 additional positions and report on its actions.

The Project Office added 13 positions to the 71 positions that the OPM report addressed in order to confirm the classification of supervisory positions covered by the OPM report and assure consistency in the classification of similar positions. The review covered employees in project planning and control; environment, safety, and health; accounting and budgeting; procurement and property management; administrative services; design engineering and construction management; security and telecommunications; crude oil logistics; operations and maintenance planning; and site operations.

The Project Office completed the review in six stages and issued its final report to OPM on October 9, 1984. With OPM concurrence, the review resulted in 40 positions being downgraded, 4 vacant positions being abolished, 1 position being reclassified, 2 new position classifications being established, and the grade levels or classifications of 36 positions being sustained. One position remains to be evaluated, but DOE does not need to obtain concurrence since it was among the 13 positions that DOE had added. (See table 10 on p. 29.)

OTHER ISSUES

During our review, we obtained information on the selection of a new SPR management, operations, and maintenance contractor; an amendment to the DOE/DOD interagency agreement for SPR oil acquisition and transportation; DOE's compliance with the Cargo Preference Act; and DOE's implementation of the recommendations made in the Operations Office's baseline report and its report on allegations about mismanagement or misconduct within the SPR program.

Management, operations, and maintenance contract selection

On December 27, 1984, DOE announced the selection of Boeing Petroleum Services, Inc., a subsidiary of Boeing Company, for negotiation of a contract to manage, operate, and maintain the SPR. DOE plans to negotiate a 5-year contract with Boeing Petroleum Services, using a cost-plus-fixed-fee contract for the first 6 months and then converting to a cost-plus-award-fee contract. Boeing Petroleum Services was 1 of 14 companies that submitted proposals and 1 of 3 firms, along with Dynalectron Corp. and Lockheed Engineering and Management Services Co., Inc., that the DOE selection board determined to be in the competitive range. DOE plans to negotiate a cessation of its current contract with POSSI effective April 1, 1985, when Boeing Petroleum Services takes over responsibility.

Kaneb Services, Inc., the parent company for POSSI, submitted a bid protest on the management, operations, and maintenance contract to the Comptroller General in October 1984 because, Kaneb contended, DOE wrongfully excluded it from the competitive range. Our Office of the General Counsel had not reached a decision on the bid protest by the end of the quarter.

SPR oil accountability

Since the inception of oil fill operations in 1977, DOE has maintained an oil accountability control system to measure and account for the oil that is purchased for the SPR, delivered to SPR marine terminals, and transported to and stored in underground caverns at the SPR storage sites. The U.S. government takes title to SPR oil either at the port of origin or port of destination, depending on the sales contract. For port of origin contracts, the government ultimately is responsible for any oil losses that occur in transit to the SPR marine terminals. (The supplier is responsible for any intransit marine oil losses for port of destination cargoes.)

In 1977, DOE and DOD signed an interagency agreement for SPR oil acquisition and transportation. DFSC agreed to purchase SPR oil, and the Military Sealift Command agreed to charter tankers to

transport SPR oil for origin cargoes. DOD also provides quality assurance representatives to witness oil measurements at the port of origin for origin cargoes and at SPR marine terminals for all cargoes.

Effective November 26, 1984, DOE and DOD amended their interagency agreement in order to tighten policies and procedures for identifying and pursuing intransit marine oil losses for origin cargoes. The amendment defines losses that will be pursued as (1) determinable losses, such as spills, contamination, fraud, or vessel inability to discharge pumpable oil quantities remaining onboard and (2) nondeterminable losses above 0.4 percent of the quantity loaded, which allows for some uncontrollable operating losses such as evaporation.

Cargo Preference Act compliance

SPR oil deliveries are subject to the Cargo Preference Act of 1954. The act requires that the SPR program, as a government procurement program using ocean-going vessels, transport at least 50 percent of the oil in commercial U.S.-flag tankers. DOE and the Maritime Administration, the agency in the Department of Transportation that administers the Cargo Preference Act, have agreed to use long-ton miles to measure compliance. (Long-ton miles combine both the amount of oil carried and the distance the oil is moved.)

Table 11 on page 30 shows the SPR program's compliance totals for each year since SPR oil fill began. Overall, U.S.-flag tankers accounted for 49 percent of the long-ton miles. (Since the beginning of 1981, U.S.-flag tankers accounted for 53 percent of the long-ton miles.) DOE estimates that U.S.-flag tankers accounted for 51 percent and foreign-flag tankers accounted for 49 percent of the long-ton miles in 1984.

Implementation of Operations Office recommendations

In June 1983, DOE transferred responsibility for SPR project management and direction to the Operations Office. The Operations Office evaluated the status of the SPR Project Office and, in October 1983, issued a baseline assessment report on the Project Office. This report made 170 recommendations, which predominantly sought to redirect overall SPR priorities, realign Project Office and contractor responsibilities, and implement existing DOE procedures. The Project Office currently is implementing the recommendations. According to the Project Office implementation plan, 154 recommendations were scheduled for completion by December 31, 1984. As of that date, the Project Office reported that the Operations Office had given final approval to close out 112 of the 142 recommendations for which it had completed close out documentation.

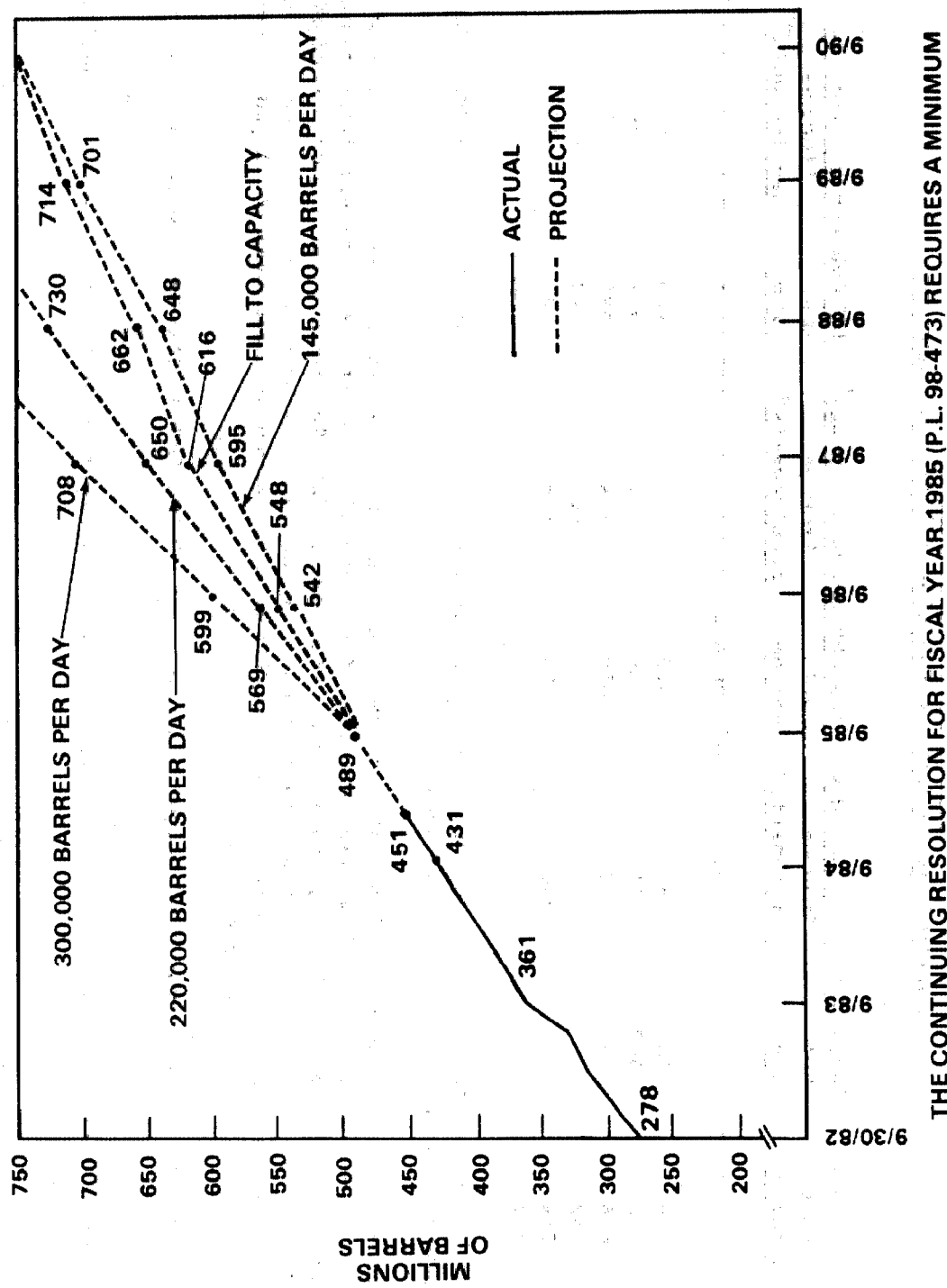
APPENDIX I

In March 1984, the Operations Office issued its report on allegations of mismanagement or misconduct regarding the SPR program. The report made 25 recommendations, which the Project Office currently is implementing. According to the Operations Office implementation plan, 17 recommendations were scheduled for completion by December 31, 1984. As of that date, the Project Office reported that the Operations Office had given final approval to close out 12 of the 22 recommendations for which it had completed closeout documentation.

APPENDIX II

FIGURES AND TABLES ON THE STATUS OF THE STRATEGIC PETROLEUM RESERVE

FIGURE 1: COMPARISON OF FILL RATES IN REACHING 750 MILLION BARRELS



THE CONTINUING RESOLUTION FOR FISCAL YEAR 1985 (P.L. 98-473) REQUIRES A MINIMUM FISCAL YEAR 1985 FILL RATE OF 159,000 BARRELS PER DAY.

Table 1

Comparison of Fill Rates and
Storage Requirements in Reaching 750 Million Barrels

Fiscal year	Fill to available storage capacity[a]	300,000 barrels per day[b]		220,000 barrels per day[b]		145,000 barrels per day[c]	
		Oil volume	Storage requirements[d]	Oil volume	Storage requirements[d]	Oil volume	Storage requirements[d]
	(millions of barrels)						
1985[e]	489	489	-	489	-	489	-
1986	548	599	-51	569	-21	542	+6
1987	616	708	-92	650	-34	595	+21
1988	662	750	-88	730	-68	648	+14
1989	714	-	-36	750	-36	701	+13
1990	750	-	-	-	-	750	-

[a]The available storage capacity is the amount that the administration's fiscal year 1985 budget shows will be available at the end of each fiscal year.

[b]The Energy Emergency Preparedness Act (P.L. 97-229) requires a minimum average annual fill rate of 300,000 barrels per day until at least 500 million barrels of oil are stored. If the President finds that this rate is not in the national interest, the minimum rate becomes 220,000 barrels per day or the highest practicable fill rate achievable with available funds. After 500 million barrels of oil are in storage, the act requires the President to seek to fill the SPR at the minimum average rate of 300,000 barrels per day until at least 750 million barrels of oil are in storage.

[c]The administration's fiscal year 1985 budget proposed to fill the SPR at the 145,000 barrels-per-day rate until the SPR is filled.

[d]A positive amount indicates excess capacity available while a negative number indicates that additional storage is needed.

[e]The Continuing Resolution for Fiscal Year 1985 (P.L. 98-473) established the minimum fill rate at 159,000 barrels per day for fiscal year 1985, which would result in an SPR inventory of 489 million barrels at the end of the fiscal year.

Source: DOE and GAO calculations.

APPENDIX II

APPENDIX II

Table 2

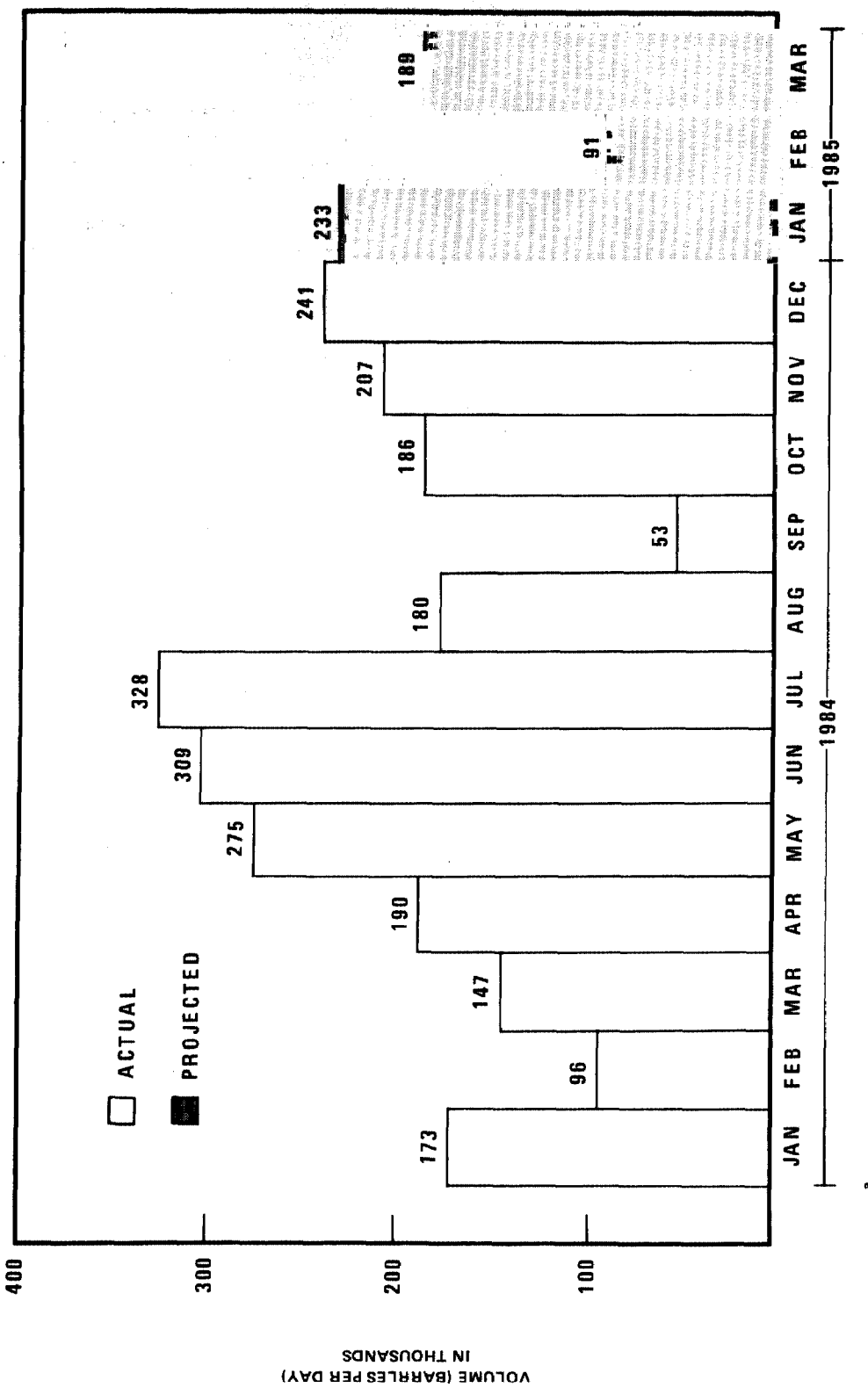
SPR Oil Deliveries
by Fiscal Year 1985 Quarter

Quarter	Oil volume at start of quarter	Deliveries	Oil volume at end of quarter	Average receiving rate For quarter	Average receiving rate Since 10/01/84
	(millions of barrels)			(thousands of barrels per day)	
Oct. 1, 1984 through Dec. 31, 1984	431.1	19.4	450.5	211.3	211.3

Source: DOE.

APPENDIX II

FIGURE 2: AVERAGE DAILY SPR OIL RECEIVING RATE[a]



[a]DAILY RECEIVING RATES FOR JANUARY, FEBRUARY AND MARCH 1985, ARE BASED ON DOE PROJECTIONS OF FUTURE DELIVERIES AND ARE SUBJECT TO CHANGE.

Table 3

SPR Oil Inventory by Crude Type as of December 31, 1984

	Type I[a]	Types II-V[b]	Type VI[c]	Type VIa[d]	Maya[e]	Total
	(millions of barrels)					
Volume delivered	220.2	170.7	31.4	16.6	11.6	450.5
	(percent)					
Percentage of total oil delivered	49	38	7	4	3	101[f]

[a]High-sulfur crude (from 0.5 to 1.99-percent sulfur content) with an API gravity range of 30 to 36 degrees. Type I oil includes Arabian Light and Isthmus crudes.

[b]High-quality crudes with a low sulfur content (maximum 0.5-percent sulfur content) and an API gravity range of 30 to 45 degrees. These types include some North Sea and West African crudes.

[c]Type VI was established for Alaskan North Slope crude, an intermediate-sulfur crude (maximum 1.25-percent sulfur content) with an API gravity range of 26 to 30 degrees.

[d]Type VIa was established for the Maya/Isthmus blend under the PEMEX contract. The blend is a high-sulfur mixture with an API gravity of at least 28 degrees.

[e]Maya crude is a lower quality oil that has a maximum sulfur content of 3.5 percent and an API gravity of at least 22 degrees. As of April 1984, Maya crude was no longer acquired as part of the PEMEX contract.

[f]Numbers do not add up to 100 percent because of rounding.

Source: DOE.

Table 4

Summary of Oil Acquisition Activities for Fiscal Year 1985

	Oil deliveries for quarter ending 12/31/84	Oil under contract as of 12/31/84[a]	Oil to be contracted[b]	Total
	(millions of barrels)			
Open, continuous solicitation[c]	14.9	5.8	19.0	39.7
PEMEX contract	4.5	13.8	-	18.3
Total	19.4	19.6	19.0	58.0

[a]Represents the amount of oil that is under contract and to be delivered in fiscal year 1985.

[b]Represents the amount of oil that remains to be contracted for and delivered in fiscal year 1985.

[c]The open, continuous solicitation involves making contract awards without reissuing the solicitation for offers of oil that is available on the "spot," or short-term, market. (See table 5 for individual contract awards.)

Source: DOE.

Table 5

Open, Continuous Solicitation Awards for Quarter Ending December 31, 1984

Contract date	Supplier	Oil type[a]	Total barrels (millions)
10/04/84	Amerada Hess Trading Co.	Sweet	0.69
10/04/84	BP Petroleum Development, Ltd.	Sweet	.50
10/04/84	Phibro Energy, Inc.	Sour	1.90
10/18/84	Scan Oil International, S.A.	Sweet	.50
10/18/84	T.W. Oil, Inc.	Sour	.50
11/01/84	Amerada Hess Trading Co.	Sweet	.65
11/15/84	Tradax Petroleum, Ltd.	Sweet	.50
11/15/84	T.W. Oil, Inc.	Sweet	.55
11/15/84	BP Oil Development, Ltd.	Sweet	2.00
11/15/84	Mitsui & Co. (USA), Inc.	Sweet	.50
11/29/84	Phibro Energy, Inc.	Sweet	.50
11/29/84	T.W. Oil, Inc.	Sweet	1.05
11/29/84	BP Oil Development, Ltd.	Sweet	.50
12/17/84	Sohio Supply Co.	Sweet	1.00
12/17/84	Amerada Hess Trading Co.	Sweet	1.30
Total			12.64

[a]DOE established quality specifications for SPR oil, including a range from 0.5 percent to 1.99 percent sulfur content for sour crudes and a maximum of 0.5 percent sulfur content for sweet crudes.

Source: DFSC.

Table 6

Status of SPR Oil Acquisition and Transportation Funds as of December 31, 1984[a]

Funds made available	Amount (millions)
Carryover from fiscal year 1981	$1,806
Fiscal year 1982 appropriations	3,684
Fiscal year 1983 appropriations	2,074
Fiscal year 1984 appropriations	650
Fiscal year 1985 appropriations	2,050
Total made available	$10,264
Funds used or committed	
Fiscal year 1982 payments	$3,687
Fiscal year 1983 payments	1,641
Fiscal year 1984 payments	2,329
Estimated fiscal year 1985 payments[b]	428
Estimated DOE unpaid obligations as of 12/31/84[c]	1,196
Total used or committed	$9,281
Estimated unobligated funds at DOE	$ 983

[a]The Omnibus Budget Reconciliation Act of 1981 (Pubic Law 97-35, Aug. 13, 1981) established the SPR Petroleum Account, effective October 1981, to pay for petroleum acquisition and transportation. This is an off-budget account.

[b]Amount consists of DOE's actual reported payments through November 1984 and DOE's estimated payments for December 1984.

[c]Unpaid obligations represent funds that have been committed to pay for fiscal year 1985 oil deliveries under the first PEMEX contract, or are obligated to DFSC for upcoming oil deliveries or purchases and expected transportation costs. DFSC estimates that of the funds obligated to it, about $378.4 million was available as of December 31, 1984, for future purchases.

Source: DOE and DFSC.

Table 7

Status of SPR Underground Capacity
as of December 31, 1984

Storage facilities	Permanent capacity available	Capacity filled
Phase I sites:	----(millions of barrels)----	
Bayou Choctaw	46.4	45.6
Bryan Mound	67.1	64.4
Sulphur Mines	26.4	26.2
Weeks Island	73.0	72.7
West Hackberry	49.1	48.7
Total	262.0	257.6
Phase II sites:	Planned Capacity	Capacity filled
Bayou Choctaw	10.0	(a)
Bryan Mound	120.0	113.3
West Hackberry	160.0	76.4
Total	290.0	189.7
Tanks and pipelines	-	3.2
Total for SPR	552.0	450.5

[a]A newly leached cavern with 4.5 million barrels of usable capacity will be exchanged for an existing 10-million-barrel cavern owned by Allied Chemical Corporation at the Bayou Choctaw site after leaching is completed. DOE completed leaching in October 1984.

Source: DOE.

Table 8

Summary of Leaching Activities for the Quarter Ending December 31, 1984[a]

	Brine disposal		Cumulative oil capacity[b]		Cumulative oil fill	
	Baseline	Actual	Baseline	Actual	Baseline	Actual
	(thousands of barrels per day)		(millions of barrels)			
Bryan Mound:						
October	900	373[c]	105.2	105.8	106.6	106.3
November	900	775	108.3	106.5	109.9	108.2
December	900	706	109.2	112.8	113.9	113.3
West Hackberry:						
October	900	849	71.6	68.9	69.4	68.5
November	900	914	73.4	76.1	74.2	74.0
December	900	889	79.9	80.3	76.5	76.4
Bayou Choctaw:						
October	53	47	6.1	6.1	[d]	-

[a]This table compares the actual leaching activities with baselines that have been established for the SPR contractor. To allow for contingencies, the contractor baselines are more stringent than the overall baselines established for the SPR program.

[b]Cumulative oil capacity represents the amount of cavern volume available for storing oil. The figures shown for Bayou Choctaw represent the cumulative leached volume.

[c]The Bryan Mound leaching program was stopped for 2 weeks in October to allow scheduled maintenance to be performed.

[d]The activities at Bayou Choctaw are directed at creating a cavern that will not store oil but will be exchanged for a larger existing cavern owned by Allied Chemical Corporation.

Source: DOE.

Table 9

National Petroleum Council Recommendations

1. SPR purchases should be reoriented to ensure that at least 43 percent of the planned 750-million-barrel reserve is low-sulfur crude oil.

2. Consider shifting at least 100 million barrels of the remaining SPR fill from the Texoma complex to the Capline complex since the Texoma crude oil pipeline is no longer available for use.

3. The following enhancements should be made to increase distribution capacity to match drawdown capability and provide additional flexibility in the system:

   --Seaway Complex: Construct a 1-million-barrel-per-day pipeline from Bryan Mound to the Texas City/Houston area and consider use of the Phillips dock to supplement the Seaway dock.

   --Capline Complex: Increase the St. James terminal capacity from 880,000 barrels per day to 1,07 million barrels per day.

   --Texoma Complex: Even if the future SPR fill is not shifted to the Capline area, the distribution system should be enhanced by 580,000 barrels per day by construction of a 9-mile pipeline from West Hackberry to Lake Charles and 280,000 barrels per day by increased terminal throughput capacity at Nederland. If a shift in remaining SPR fill is not made to the Capline area, DOE should increase available terminal throughput and marine loading capacity by an additional 730,000 barrels per day at Nederland.

4. Ballast water treatment facilities or alternate means of disposal must be provided for all SPR marine facilities.

5. Jones Act waivers, if necessary, should be expeditiously handled on a case-by-case basis. If the drawdown rate is such that case-by-case waivers cannot be administratively handled, a blanket waiver should be granted to U.S.-flag vessels that received construction differential subsidies. This would enable the Maritime Administration to concentrate on case-by-case waivers for foreign-flag tankers' participation in an SPR drawdown.

APPENDIX II

Table 9 (cont.)

6. Efficient use of tankers and barges should be promoted by (1) adopting minimum vessel lot sizes, such as 200,000 barrels for tankers and 40,000-60,000 barrels for barges; (2) relaxing maximum vessel length restrictions at the St. James marine terminal; and (3) substantially increasing barge berthing facilities.

7. A framework should be put in place that would facilitate and expedite the distribution of SPR crude oil during an emergency. To promote an efficient drawdown of the SPR and the timely distribution of petroleum products to consumers, it is recommended that SPR Drawdown Plan Amendment No. 4 be modified from the present position of being open ". . . to all interested buyers. . ." to a more restricted list of purchasers such as U.S. refiners, their purchasing agents, and/or traditional suppliers. Procedures should be established for precertification of qualified bidders.

8. Periodic drawdown exercises should be conducted by the entire SPR organization to achieve and maintain administrative and operational readiness. Industry participation in the planning, implementation, and evaluation of such test is vital. No physical sale of crude oil is needed to have an effective exercise.

9. Equipment and procedures at SPR sites should be improved. To increase the flexibility of the system, maximum use should be made of existing meters instead of tank gauges for custody transfer of SPR oil. Corrosion protection for water and brine systems should be improved, and a complete review of all spare pipe requirements should be made with a view toward reducing inventories and coating the remaining pipeline with a preservative. Security of water intake structures, which are critical to drawdown, should be ensured.

Table 10

Results of DOE's Review of the Project Office Grade Structure

DOE actions	Audited by OPM	Reviewed at OPM direction	Added by DOE	Total
Vacant positions that were abolished	0	4	0	4
Vacant positions that were downgraded	1	4	1	6
Encumbered positions that were downgraded	12	20	2	34
Encumbered positions whose classification was sustained	7	14	7	28
Encumbered position reclassified to new occupation	1	0	0	1
Encumbered positions OPM recommended for downgrade but DOE rebutted	8	0	0	8
New position classifications established	0	0	2	2
Position needs further study but no OPM concurrence	0	0	1	1
Total	29	42	13	84

Source: DOE.

Table 11

The SPR Program's Compliance With The Cargo Preference Act[a]

	U.S.-flag tanker		Foreign-flag tanker	
	Long-ton miles	Percent	Long-ton miles	Percent
	(billions)		(billions)	
1977	1.4	16	7.2	84
1978	27.1	54	23.4	46
1979	2.8	30	6.6	70
1980	1.8	11	14.9	89
1981	41.0	45	49.3	55
1982	29.0	63	16.7	37
1983	20.9	62	13.0	38
1984[b]	26.9	51	25.4	49
Total 1981-84	117.8	53	104.4	47
Total 1977-85	150.9	49	156.5	51

[a]DOE and the Maritime Administration have agreed to measure compliance using long-ton miles, which factors in both the quantity of oil being delivered and the distance the oil is moved.

[b]Preliminary data. The Maritime Administration verifies the DOE data on a voyage-by-voyage basis.

Source: DOE.

Table 12

Prior GAO Quarterly Reports

1. Progress in Filling the Strategic Petroleum Reserve Continues, but Capacity Concerns Remain (GAO/EMD-82-112, July 15, 1982).

2. Status of Strategic Petroleum Reserve Activities as of September 30, 1982 (GAO/RCED-83-29, Oct. 15, 1982).

3. Status of Strategic Petroleum Reserve Activities as of December 31, 1982 (GAO/RCED-83-93, Jan. 14, 1983).

4. Status of Strategic Petroleum Reserve Activities as of March 31, 1983 (GAO/RCED-83-136, Apr. 15, 1983).

5. Status of Strategic Petroleum Reserve Activities as of June 30, 1983 (GAO/RCED-83-203, July 13, 1983).

6. Status of Strategic Petroleum Reserve Activities as of September 30, 1983 (GAO/RCED-84-11, Oct. 14, 1983).

7. Status of Strategic Petroleum Reserve Activities as of December 31, 1983 (GAO/RCED-84-92, Jan. 13, 1984).

8. Status of Strategic Petroleum Reserve Activities as of March 31, 1984 (GAO/RCED-84-148, Apr. 13, 1984).

9. Status of Strategic Petroleum Reserve Activities as of June 30, 1984 (GAO/RCED-84-182, July 13, 1984).

10. Status of Strategic Petroleum Reserve Activities as of September 30, 1984 (GAO/RCED-85-40, Oct. 15, 1984).

(001761)

30339

AN EQUAL OPPORTUNITY EMPLOYER

UNITED STATES
GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE,$300

POSTAGE AND FEES PAID
U. S. GENERAL ACCOUNTING OFFICE

THIRD CLASS