

Statement of David F. Johnson
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U. S. Department of Energy
before the
Committee on Energy and Natural Resources
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Mr. Chairman and members of the Committee, I am pleased to be here today to discuss the issue of developing refined products storage in the Strategic Petroleum Reserve. As you know, the SPR was established by Congress through passage of the Energy Policy and Conservation Act in 1975 in response to the Arab oil embargoes. The primary policy of the U.S. petroleum stockpiling program has been to store crude oil. The SPR has served to protect our Nation from crude oil supply interruptions for over three decades. This decision was based on the recognition that the United States has a robust, sophisticated and flexible refining industry. However, due to a temporary shipping disruption in Boston Harbor in 2000 prices for heating oil jumped dramatically for about a week in the midst of a very cold period. President Clinton directed the Department of Energy to establish a heating oil reserve and the Congress passed legislation authorizing the creation of the Northeast Home Heating Oil Reserve to address heating oil supply vulnerabilities in that region. These two stockpiles and our open, flexible, and competitive market have been adequate to effectively address our vulnerabilities.

DOMESTIC REFINING AND DISTRIBUTION INFRASTRUCTURE

The SPR currently consists of four storage facilities, two each in Louisiana and Texas, with a combined capacity to store 727 million barrels of crude oil in underground salt caverns. The current inventory of the SPR is just over 720 million barrels. The Gulf Coast region is the point of entry for over half of U.S. crude oil imports. Additionally, of

the 17.6 million barrels per day of operable refining capacity in the U.S., nearly half or 8.4 million barrels per day is located in the U.S. Gulf Coast region. Locating the SPR storage facilities along the Gulf Coast allows direct access to all major commercial supply and distribution infrastructure within the region in the event of a supply disruption and allows access to the region's vast salt domes, which provide the lowest cost storage option for crude oil.

From the Gulf Coast, domestic crude oil production and foreign imports flow inland to refineries within the region and in the Midwest. Once refined, products such as gasoline, diesel, and jet fuel are shipped around the country by marine vessels and pipelines. A major disruption to the supply and distribution systems of the Gulf Coast region can potentially affect the entire country. However, the majority of the refined products produced in the Gulf Coast region are shipped to the East Coast, the Midwest, or consumed within the region.

Refined products travel to the Midwest primarily via pipeline systems. Within the Midwest region, there is approximately 3.6 million barrels per day of refining capacity; however, the region also receives over 900,000 barrels per day of refined product from the Gulf Coast region. In the event of a Gulf Coast disruption, the SPR can supply Midwest refineries with crude oil to meet that region's refinery demand, but the Midwest must rely upon product stocks stored in the region or seek additional imports to offset losses in the refined products received from the Gulf Coast. The average storage for gasoline in the Midwest since 1990 has been about 50 million barrels, and the average storage of distillate (diesel and heating oil) was about 29 million barrels. The SPR is

currently unable to directly offset any additional loss in refined product supply to the region.

There is currently only 1.6 million barrels per day of refining capacity on the U.S. East Coast, none of which is north of New York City. As a result, the large population centers along the Eastern Seaboard must receive substantial fuels supplies, either imported or domestic, from outside the region. According to the Energy Information Administration, the U.S. East Coast consumes 40 percent to 45 percent, or over 3 million barrels per day, of the refined products produced in the U.S. Gulf Coast region. Between 500,000 and 600,000 barrels per day of Gulf Coast products are shipped to the East Coast on barges or other small vessels. However, a significant quantity of fuels supplied to the East Coast from the Gulf Coast arrives via pipeline. The Colonial Pipeline and the Plantation Pipeline systems have the ability to transport up to 2.4 million barrels per day and 600,000 barrels per day of petroleum products, respectively, to markets in both the South-Central and Eastern United States. These pipelines supply all or some of the refined products consumed in major population centers such as Nashville, TN; Atlanta, GA; Charlotte, NC; Washington, DC; Philadelphia, PA; and New York City. The East Coast receives an additional 1.5 million barrels per day of refined product imports. Aside from the relatively small quantity of heating oil stored in the Northeast Home Heating Oil Reserve, the region must rely upon product stocks stored in the region or seek additional imports to offset losses in refined products received from the Gulf Coast. The average storage for gasoline in the Northeast since November 1990 has been about 50 million barrels, and the average storage of distillate (diesel and heating oil) was about 48 million

barrels. The SPR is currently unable to directly offset any additional loss in refined product supply to the region.

In the event of a major petroleum supply interruption, it has long been assumed that the SPR could supply crude oil to our domestic refiners which would produce the necessary refined products or that we will be able to increase imports of available alternative supplies or strategic refined products stocks that were released by our International Energy Agency (IEA) partners. While this is still true, our recent experiences with hurricanes hitting the Gulf Coast have demonstrated that there are some regions that may not have access to alternative fuel supplies, leading to localized disruptions. However, these disruptions were of short-term duration.

HURRICANE VULNERABILITIES AND DISTRIBUTION IMPACTS

In a four-year period, the United States Gulf Coast bore the impact of two of the three most damaging hurricanes in American history.

Over the three-week period following Hurricane Katrina in 2005, the wholesale price of gasoline on the Gulf Coast increased by over 38 percent, to \$2.60 per gallon, before gradually retreating. The wholesale price of diesel fuel increased by 41 percent to \$2.70 per gallon over the same period. Within a month of Hurricane Katrina, product imports increased nearly 25 percent above the pre-hurricane level offsetting much of the decline in domestic production. This situation was mirrored in September 2008 when Hurricanes Gustav and Ike hit the Gulf Coast in close succession. Wholesale gasoline prices on the Gulf Coast increased by 22 percent to \$3.66 per gallon in the first half of September 2008 when Hurricanes Gustav and Ike both struck the U.S. Higher gasoline prices lasted

through October 2008. However, wholesale prices of diesel fuel actually fell over this period of time due to the rapidly decreasing prices of crude oil. By the end of September 2008, product imports increased by more than 30 percent above the pre-Hurricane Gustav level in response to the increase in fuel prices and helped address lower domestic production.

The SPR was utilized in response to the hurricanes of both 2005 and 2008. In both instances the Reserve provided loans of crude oil to Gulf Coast refiners that were operating but unable to secure crude supplies. Additionally, the SPR executed a Presidentially-ordered sale of crude oil in 2005 as part of a coordinated IEA response to the disaster. In 2005, our IEA partners released their stocks of refined products, which made available for sale additional fuel supplies to meet U.S. demand until domestic refining and distribution infrastructure was brought back online.

Despite the efforts of the U.S. SPR and IEA member countries, there were some markets that could not be immediately supplied with refined products. These markets, south of Virginia and north of Florida, lack the infrastructure to receive and distribute imports from the Atlantic coast to inland population centers. As such, this area is heavily dependent on gasoline supplies from the Gulf Coast refinery centers through major product pipelines. Disruptions to pipeline service were linked in many cases to electricity outages, rather than to damage to the pipelines themselves. This situation was realized again after Hurricanes Gustav and Ike damaged the Gulf Coast supply and distribution infrastructure in 2008. This time, however, the United States did not deem it necessary to request that the IEA initiate a coordinated emergency release of its stocks from our IEA partners.

It is also important to note that there are several areas in the United States that primarily receive their refined products through a single mode of transportation. For example, there are parts of the western United States that would be completely cut off from fuel supplies if an earthquake or other disaster affected refinery or pipeline operations.

SPR MISSION AND CAPABILITIES OF A REGIONAL PRODUCT RESERVE

The SPR was established in response to the Arab oil embargo of 1973 to protect the United States from interruption to our foreign crude oil imports. The decision to store only crude oil in the Reserve was based largely on the notion that our domestic refining industry was secure and had the ability to refine and distribute SPR crude oil to meet consumers' needs during an extended supply disruption. The Department of Energy still considers that a large SPR focused on crude oil storage to be the best way to protect the Nation from the negative impacts of a short-term international interruption to our crude oil imports. However, the events of 2005 and 2008 have shown us that this system may be limited in its ability to address some short-term interruptions to our domestic refined products supply and distribution infrastructure. The question now to be answered is: do we have an increased probability of events such as hurricanes in the Gulf of Mexico that lead to short-term disruptions of limited size that warrant the additional cost of developing a refined products reserve? The cost of storing refined products has also been a factor supporting the "all crude oil" SPR philosophy. The cost of storing refined products can be substantially higher than that of storing crude oil. As an example, it costs \$4.80 per barrel per year to store heating oil in the Northeast Home Heating Oil Reserve, whereas the cost to store crude oil in the SPR is \$0.21 per barrel per year. The costs

incurred from a domestic product reserve must then be carefully weighed against the benefits of a new product reserve.

TECHNICAL ISSUES

A major technical difference between storing refined products and storing crude oil is the relative stability of the commodity. When stored properly, as it is in SPR salt caverns, crude oil can be stored almost indefinitely without any impact on the quality or stability of the crude. However, refined products have a limited storage life. The products degrade over time and stocks require regular rotation and replenishment. The need to continuously rotate stocks adds logistical constraints and costs to any potential refined products reserve. There are also many different regional and seasonal product specifications, particularly for gasoline. Storing the right products and managing the rotation of these stocks could be a challenge. However, many countries and private companies, both here and abroad, have successfully built and maintained refined products storage. Therefore, there would be little or no technical uncertainty associated with building a refined products reserve.

CONCLUSION

I would like to conclude by saying that the Administration has not at this time formulated a position on this proposed legislation and has not made a decision on the need to alter our SPR Policy. The Strategic Petroleum Reserve currently with 720 million barrels of crude oil stands ready to provide crude oil to protect the U.S. in the event of a supply disruption. Additionally, we look forward to working with Congress to make sure that the SPR continues to meet the Nation's need for energy security into the future. This

concludes my prepared testimony, and I will be happy to respond to any questions you may have.