U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON ENERGY AND COMMERCE

October 31, 2017

TO: Members, Subcommittee on Energy

FROM: Committee Majority Staff

RE: Hearing entitled "The 2017 Hurricane Season: A Review of Emergency Response and Energy Infrastructure Recovery Efforts"

I. INTRODUCTION

The Subcommittee on Energy will hold a hearing on Thursday, November 2, 2017, at 10:00 a.m. in 2123 Rayburn House Office Building. The hearing is entitled "The 2017 Hurricane Season: A Review of Emergency Response and Energy Infrastructure Recovery Efforts." The hearing will provide information to help assess energy infrastructure response and recovery efforts under the varying circumstances of the four hurricanes that made landfall this past season, including information concerning the use of the Strategic Petroleum Reserve in energy supply emergencies.

II. WITNESSES

Panel I

- **Patricia Hoffman**, Acting Under Secretary for Science and Energy, Principal Deputy Assistant Secretary for the Office of Electricity Delivery and Energy Reliability, U.S. Department of Energy;
- **Ray Alexander**, Director of Contingency Operations, U.S. Army Corps of Engineers;
- **DeAnn Walker**, Chairman, Public Utility Commission of Texas;
- **Robert Corbin**, Deputy Assistant Secretary for the Office of Petroleum Reserves, U.S. Department of Energy; and,
- **Frank Rusco**, Director, Natural Resources and Environment, Government Accountability Office.

Panel II

- **Thomas Fanning**, President and CEO, Southern Company, on behalf of the Electricity Subsector Coordinating Council;

- **Chet Thompson**, President and CEO, American Fuel and Petrochemical Manufacturers;
- **Max McBrayer**, Chief Supply Officer, RaceTrac Petroleum, Inc.;
- **Ramon Luis Nieves**, Attorney at Law, former member, Senate of Puerto Rico;
- **Cathy Kennedy**, Vice-President, National Nurses United; and,
- **Julio Rhymer,** Executive Director, Virgin Islands Water and Power Authority.

III. BACKGROUND

A. 2017 Hurricane Season Fuel Supply and Electricity Restoration

The 2017 Atlantic Hurricane Season produced four hurricanes that made landfall on the U.S. Gulf Coast, Puerto Rico, and U.S. Virgin Islands. These hurricanes caused widespread damage, resulting in fuel shortages and electricity outages in affected areas. Although fuel and electricity supply has largely been restored along the Gulf Coast, recovery efforts continue in Puerto Rico and the U.S. Virgin Islands, where the majority of residents still remain without power.

Following a disaster declaration, the Federal Emergency Management Agency (FEMA) provides federal assistance and coordinates federal recovery efforts through the National Response Coordination Center, in close cooperation with its Federal partners, including the Department of Energy (DOE) and the Army Corps of Engineers (USACE), and State and local officials.

Department of Energy. DOE is the designated Sector-Specific Agency for the Energy Sector under the National Infrastructure Protection Plan, and serves as the lead Federal coordinating agency for Emergency Support Function #12–Energy under the National Response Framework.[1] In addition, DOE is authorized under the Federal Power Act to address electricity shortages and secure the grid and authorized under the Energy Policy and Conservation Act to address fuel supply interruptions with drawdowns from the Strategic Petroleum Reserve (SPR).

During severe weather events, or in response to energy supply disruptions, DOE is responsible for providing clear and consistent communication to deliver situational awareness of energy sector impacts. DOE has been issuing situation reports on Hurricanes Nate, Maria, Irma, and Harvey to provide details on the storms' impacts, and the energy industry's recovery and restoration activities.[2] DOE responders have deployed to affected areas to facilitate subject matter expertise and assist with expedited waivers and special permits that aid industry restoration efforts. During emergencies, regulatory assistance and waivers are often used to expedite restoration when the situation warrants. DOE provides a central location for common

[1] See FEMA, Emergency Support Function Annexes, ESF 12 at https://www.fema.gov/media-library/assets/documents/25512
[2] DOE, Hurricanes Nate, Maria, Irma, and Harvey Situation Reports

waivers and special permits for energy response.[3] DOE's Western Area Power Administration deployed a team to the U.S. Virgin Islands in support of restoration efforts. DOE has also deployed subject matter experts to provide technical assistance to USACE for restoration planning on Puerto Rico.

U.S. Army Corps of Engineers. USACE is the designated Sector Specific Agency for public works and serves as the lead coordinating agency under Emergency Support Function #3—public works and engineering under the National Response Framework. Generally, its role in hurricane response includes debris management, commodities distribution, temporary housing, temporary roofing, emergency power, infrastructure assessment, and support to urban search and rescue.[4] USACE is working with DOE and the Puerto Rico Electric Power Authority (PREPA) to lead in the planning, coordination, and integration efforts to execute electrical power grid repair on Puerto Rico following Hurricane Maria.[5] USACE stood up a new Puerto Rico recovery field office and has begun to award contracts for personnel and equipment to repair the power grid.[6]

Hurricane Harvey. Hurricane Harvey made landfall on August 25, 2017, between Port Aransas and Port O'Connor, Texas as a category 4 storm. Harvey resulted in more than 275,000 customer power outages across Texas and shut down several Gulf Coast ports, along with oil and gas production, and refining operations. Historic rainfall and flooding occurred in Southeast Texas, including all-time record daily rainfall accumulations, displacing tens of thousands of residents from their homes.

Hurricane Irma. Hurricane Irma moved across the Virgin Islands and near the northern coast of Puerto Rico on September 6, 2017, causing damage and power outages throughout the region. On September 10, Irma moved across the Florida Keys as a category 4 storm before making landfall near Marco Island, Florida as a category 3. At peak, the storm caused power outages for 870,000 Puerto Rico customers, 29,000 Virgin Islands customers, more than six million Florida customers, and more than one million customers in Georgia and South Carolina.

Hurricane Maria. Hurricane Maria made landfall along the southern coast of Puerto Rico on September 20, 2017, as a category 4, after passing approximately 15 miles south-southwest of St. Croix, U.S. Virgin Islands. Heavy winds and flooding resulted in catastrophic damage to infrastructure and loss of electrical power to nearly all of the 1.57 million customers in Puerto Rico and 55,000 customers across the U.S. Virgin Islands.

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[3] DOE, Energy Waiver Library

[4] USACE, 2017 Hurricane Season.
[5] U.S. Army, U.S. Army Corps of Engineers awards first contract for power restoration
[6] See http://www.usace.army.mil/Media/News-Releases/News-Release-Article-View/Article/1344078/us-army-corps-of-engineers-awards-contract-for-personnel-and-equipment-for-powe/; http://www.usace.army.mil/Media/News-Releases/News-Release-Article-View/Article/1348360/us-army-corps-of-engineers-awards-additional-contract-for-puerto-rico-power-res/; http://www.usace.army.mil/Media/News-Releases/News-Release-Article-View/Article/1343376/us-army-corps-of-engineers-awards-first-contract-for-power-grid-restoration/

Electricity restoration remains a priority on Puerto Rico and the U.S. Virgin Islands. FEMA, USACE, DOE, and local power authorities are working with industry support to restore power. DOE has taken the lead for restoration planning on the U.S. Virgin Islands and USACE is leading efforts on Puerto Rico. At the same time, PREPA also has awarded a contract for power restoration on portions of Puerto Rico, which has generated questions concerning response coordination, and the contracting process, including letter requests from the Committee for information surrounding a contract with Whitefish Energy Holdings, LLC.[7]

Electricity Summary (as of 10:30 AM EDT October 26, 2017).[8]

Puerto Rico: Approximately 30.5 percent of normal peak load has been restored and 39 of 78 municipalities are partially energized or have energized facilities. Installation of two generators installed by USACE at the Palo Seco Power Plant site is complete. DOE continues to coordinate closely with FEMA, Puerto Rico, and USACE to support restoration efforts and facilitate industry support.

U.S. Virgin Islands: As of Monday October 23, 8,250 customers across the U.S. Virgin Islands have been restored (17 percent of total customers). Approximately 68.6 percent of customers on St. Thomas, 96.7 percent of customers on St. Croix, and 87.9 percent of customers on St. John remain without power. The undersea transmission line from St. Thomas to St. John was energized on October 26 and the U.S. Virgin Islands Water and Power Authority began restorations to the Cruz Bay area of St. John on October 27. Restoration efforts continue across the Territory, mainly focusing on the backbone feeders for the grid.

Hurricane Nate. Hurricane Nate made landfall on October 7, 2017, over the Gulf Coast, near the mouth of the Mississippi River, as a category 1 storm. Nate caused property damage and electricity outages across Alabama, Florida, and Mississippi. In preparation for Nate, approximately 92 percent of the oil production and 78 percent of the natural gas production in the Federally administered areas of the Gulf of Mexico were shut in and two refineries were shut down. Several ports in Louisiana, Alabama, and Florida that either import or outloaded petroleum products were also closed.

B. Strategic Petroleum Reserve

The Strategic Petroleum Reserve (SPR) is a stockpile of government-owned petroleum managed by DOE, which Congress authorized as a response to the Organization of Arab Petroleum Exporting Countries (OAPEC) 1973-1974 oil trade embargo. The SPR was created to reduce the impact of disruptions in supplies of petroleum products and to carry out obligations of the United States under the Agreement on an International Energy Program.[9] The Energy Policy

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[7] See October 26, 2017 letter to Andrew Techmanski, Chief Executive Officer, Whitefish Energy Holdings, energycommerce.house.gov/wpcontent/uploads/2017/10/20171026WhiteFish.pdf. On October 29, 2017, the Governor of Puerto Rico announced he would seek to cancel the contract.

[8] See DOE, Infrastructure Security and Energy Restoration, Hurricanes Irma and Maria, October 30 Event Summary (Report #72)

[9] IEA, Agreement on an International Energy Program, (as amended May 9, 2014).

and Conservation Act authorizes the President to draw down the SPR upon finding that there is a "severe supply interruption."

The SPR's crude oil storage facilities are comprised of 62 underground caverns mined in naturally occurring salt domes. Two sites are located in Texas, and two in Louisiana. The sites offer access to marine terminals and pipeline systems to move crude oil to and from the SPR. The SPR currently holds 672 million barrels of crude oil, representing 143 days of net import protection.[10] The U.S. exceeds its obligation as a member of the International Energy Agency (IEA) under the International Energy Program to maintain at least 90 days of strategic stocks. On June 20, 2014, Secretary Moniz established a one million barrel gasoline component of the SPR in the Northeast,[11] using funds collected from a test sale of crude oil that concluded in July 2014.[12] The Committee, as part of its ongoing oversight of DOE's management of the SPR, wrote to DOE on May 12, 2014, requesting information on the then-recently announced test sale and regional refined petroleum product reserve.[13]

The SPR's crude oil storage facilities were designed to achieve a drawdown rate of roughly 4.4 million barrels per day for up to 90 days; however, an audit conducted by the DOE Office of Inspector General (OIG) in July 2014 revealed that the SPR was "unable to achieve the maximum drawdown rate specified in its performance criteria, could not store oil to its full capacity, and had not ensured that its full inventory was available for drawdown."[14] The OIG also observed that DOE has not published a revised study on the optimal size of the SPR since 1990, and the last major assessment of the SPR's mission readiness was the Life Extension Program initiated in 1995. A September 2014 report by the Government Accountability Office (GAO) confirmed the OIG's findings, recommending that DOE "undertake a comprehensive reexamination of the appropriate size of the SPR in light of current and expected future market conditions."[15] DOE agreed with the findings, and in a letter to the Committee dated December 29, 2014, stated that it had initiated the process to conduct a comprehensive review.[16] In August 2016, DOE released its Long-Term Strategic Review, revealing that the effective distribution capacity could be more than two million barrels (MMbbl) below the design drawdown rate of 4.4 MMbbl per day in certain oil disruption scenarios.[17]

In response to changing market and supply conditions, and to address the building backlog of maintenance requirements for the SPR, Congress authorized an investment of up to $2 billion as part of a modernization program, $375,400,000 of which have been appropriated. Congress also authorized a series of drawdowns that could reduce the SPR's inventory to about

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[10] DOE, SPR Quick Facts and FAQs. Based on 2016 U.S. net imports of crude oil and refined products.
[11] DOE, Northeast Gasoline Supply Reserve.
[12] DOE, Strategic Petroleum Reserve Test Sale 2014 Final Report (November 2014).
[13] Letter led by Rep. Fred Upton, Chairman, House Committee on Energy & Commerce to Ernest Moniz, Secretary, Department of Energy (May 12, 2014).
[14] DOE, Office of Inspector General, The Strategic Petroleum Reserve's Drawdown Readiness (July 2014).
[15] GAO, Changing Crude oil Markets (September 2014).
[16] On file with Committee.
[17] DOE,U.S. Strategic Petroleum Reserve Long-Term Strategic Review. (August 2016).

500 MMbbl over the next ten years, provided the sales do not limit the ability of the SPR to prevent or reduce the adverse impact of an energy supply shortage.[18]

Given the significant federal investment in the SPR, and the need for Congress to evaluate whether the SPR should be maintained in its current configuration, the Committee requested that GAO undertake an assessment of the SPR and identify options to more efficiently and cost-effectively meet U.S. energy security needs and comply with international obligations.[19]

Emergency Exchanges. In the event of unexpected supply disruptions, the Secretary of Energy is authorized to utilize the SPR to loan crude oil to refineries on a temporary basis. In response to hurricane Harvey, six emergency exchange requests were authorized. In total, five MMbbl of oil were drawn down from the SPR's West Hackberry and Bayou Choctaw sites and delivered to refineries in Louisiana and Texas.

IV. ISSUES

The following issues may be examined at the hearing:

- Coordination of Federal/State/Industry emergency response and restoration;
- Assuring future critical energy infrastructure protection;
- Preparation for fuel and electricity supply disruptions;
- Emergency waivers; and
- Strategic Petroleum Reserve modernization.

V. STAFF CONTACTS

If you have any questions regarding this hearing, please contact Brandon Mooney or Mary Martin of the Committee staff at (202) 225-2927.

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[18] *See* H.R. 1314, the "Bipartisan Budget Act of 2015," 114th Cong. (P.L. 114-74); H.R. 22, the "Fixing America's Surface Transportation Act," 114th Cong., (P.L. 114-94); H.R. 34, the "21st Century Cures Act," 114th Cong. (P.L. 114-255); and, H.R. 2028, the "Further Continuing and Security Assistance Act, 2017," 114th Cong. (P.L. 114-254).

[19] *See* Letter led by Rep. Fred Upton, Chairman, House Committee on Energy & Commerce to Gene Dodaro, Comptroller General, Government Accountability Office (December 22, 2016).