



U.S. Department of Energy
Office of Inspector General
Office of Audit Services

Special Report

The Department of Energy's
Response to Hurricanes Katrina and
Rita



Department of Energy

Washington, DC 20585

November 9, 2005

MEMORANDUM FOR THE SECRETARY

FROM:

Greg Friedman
Gregory H. Friedman
Inspector General

SUBJECT:

INFORMATION: Special Report on "The Department of Energy's Response to Hurricanes Katrina and Rita"

The Office of Inspector General conducted a review to identify the actions taken by the Department of Energy (Department) in response to Hurricanes Katrina and Rita, specifically to assess whether these actions fulfilled the Department's obligations as outlined in the Department of Homeland Security's National Response Plan. The Katrina Hurricane disaster was the first Departmental mobilization to the National Response Plan under its current organization. In our judgment, under very difficult circumstances, the Department deserves high marks for its timely and responsive actions. While the actions were commendable, we identified certain additional approaches which we believe could improve the Department's response to future Emergency Support Function-12 (ESF-12) missions. These are discussed in the body of the report.

BACKGROUND

In accordance with Homeland Security Presidential Directive 5, in December 2004, the Department of Homeland Security issued the National Response Plan. The purpose of the Plan was to unify the Federal approach to domestic incident management, including natural disasters such as hurricanes. Under the Plan, the Department of Energy is the lead Federal agency for ESF-12, which addresses the restoration of energy systems after a natural disaster. The Department's Office of Electricity Delivery and Energy Reliability is responsible for the ESF-12 function and works with utilities, refiners and other energy providers, as well as state governments and Federal agencies, to prepare for and respond to energy emergencies. Although restoring normal operations at an energy facility is the direct responsibility of the facility owner, under ESF-12 the Department's national obligations include:

- Serving as the focal point for issues and policy decisions relating to energy;
- Identifying resources needed to restore energy systems; and,
- Monitoring energy system damage and repair work.



In August and September 2005, two major hurricanes hit the Gulf coast region of the United States: Hurricanes Katrina and Rita. The storms devastated the region and left about four million customers without electric power. The damage to oil production and refining infrastructure and the lack of electricity caused the shut down of large segments of the domestic petroleum industry. As of October 11, 2005, seven refineries had not resumed full operations due to hurricane-related damage, resulting in lost refinery production of about 1.9 million barrels per day. This represents about 11 percent of the Nation's total refinery capacity. The storms also caused extensive damage to the Gulf coast region's natural gas infrastructure. Despite the enormity of the damage, hurricane recovery is underway and considerable progress has been made. More is expected by the end of 2005.

CONCLUSIONS AND OBSERVATIONS

We found that the Department was effective in fulfilling its responsibilities under the National Response Plan. It took what we deemed to be a set of appropriate actions designed to assist in the restoration of energy systems after Hurricanes Katrina and Rita. The Department:

- Initiated policy and regulatory actions needed to assist energy recovery efforts and mitigate the impacts of the hurricanes;
- Coordinated with the energy industry and with other governmental agencies, both Federal and state, to identify supporting resources and facilitate the restoration of energy systems; and,
- Continuously monitored the status of energy system damage and repair work, and disseminated this information in a timely manner to interested entities in the governmental and private sectors.

The Department's senior management provided highly visible direction to the energy recovery effort. On August 31, 2005, you announced approval of the first loan of oil from the Strategic Petroleum Reserve to refineries whose supplies of crude oil had been disrupted during the disasters. Further, on September 28, 2005, the Department used its regulatory authority to hasten power restoration in East Texas when you signed an order that authorized and directed a connection of electrical transmission lines across regulatory boundaries. The Department also provided equipment and personnel in support of various emergency response centers to assist in the restoration of energy systems in the affected areas. A more detailed chronology of some of the Department's most significant actions is provided in Appendix 2 of the report.

While the Department's response mechanism was effective, as discussed previously, we did identify certain actions which could enhance future ESF-12 missions. These include improving communication channels between and among private and governmental bodies and the Department; strengthening the Department's ability to identify emergency response assets in advance of events such as natural disasters; and, augmenting the staffing and provisioning of ESF-12 emergency response teams which are the Department's most direct representatives in crisis situations.

In reaching our conclusions regarding the effectiveness of Department activities, we obtained information from and interviewed a number of individuals external to the Office of Electricity Delivery and Energy Reliability. This included private sector entities such as Exxon Mobile Corporation, Entergy Corporation, and Colonial Pipeline Company. We also discussed the Department's response with governmental officials from the Department of Homeland Security and the Federal Energy Regulatory Commission.

The Inspector General review began on October 5, 2005. Our observations regarding the Department's response to these natural disasters closely parallel your testimony before the Senate Energy and Natural Resources Committee on October 27, 2005.

This review was conducted as a part of the President's Council on Integrity and Efficiency's (PCIE) examination of relief efforts provided by the Federal government in the aftermath of Hurricanes Katrina and Rita. As such, a copy of the report has been forwarded to the PCIE Homeland Security Working Group which is coordinating reviews of this subject on a government-wide basis.

MANAGEMENT REACTION

The Director, Office of Electricity Delivery and Energy Reliability, concurred with the recommendations in the report. Management's comments are included in Appendix 3.

Attachment

cc: Deputy Secretary
Under Secretary for Energy, Science and Environment
Administrator, National Nuclear Security Administration
Chief of Staff
Director, Office of Electricity Delivery and Energy Reliability

SPECIAL REPORT ON THE DEPARTMENT OF ENERGY'S RESPONSE TO HURRICANES KATRINA AND RITA

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Department's Performance of the ESF-12 Mission

Department's Performance

Based on the results of our review, which included discussions with affected private corporations and government officials, the Department of Energy (Department) met its responsibilities under the National Response Plan by taking aggressive actions to restore energy systems in response to Hurricanes Katrina and Rita. This included serving as the focal point for numerous issues and policy decisions to assist recovery efforts relating to the devastating impact of the hurricanes, specifically concerning the energy sector. In addition, the Department coordinated with energy industries and governmental agencies to identify supporting resources and to expedite the repair and restoration of energy producing facilities. The Department also monitored energy system damage and repair work, disseminating status information to utilities, refiners, natural gas pipeline operators, as well as state and local governments and Federal agencies.

Focal Point for Policy Decisions

The Department's Emergency Support Function-12 (ESF-12) placed 35 responders at nine emergency operation centers to coordinate energy recovery responses with energy firms, state governments, and Federal agencies. We analyzed the activity logs for deployed ESF-12 personnel. The analysis showed that the Department was aggressive in collecting energy restoration information and that assistance requests were coordinated with appropriate parties throughout the affected geographic area. ESF-12 personnel also communicated with state energy representatives, providing the opportunity to share information on recovery issues and other actions taken in response to the hurricanes.

By serving as a focal point for critical energy-related data, the Department was able to identify situations requiring intervention by the Secretary of Energy (Secretary). Specifically, this allowed the Secretary to exercise his authority in making policy and regulatory decisions affecting energy supply and restoration. For example, on August 31, 2005, the Secretary announced his approval of the first loan of oil from the Strategic Petroleum Reserve to refineries whose supplies had been cut off by disruptions in production. On September 28, 2005, the Department used its regulatory authority to hasten power restoration in East Texas when the Secretary signed an order that authorized and directed a connection of electrical transmission lines across regulatory boundaries. Additionally, the Department worked with other Federal agencies and affected states to obtain regulatory

waivers for gasoline and diesel fuel formulations, safety regulations limiting driver service hours, and vehicle weight restrictions to mitigate the impact of fuel supply disruptions and ease recovery efforts.

Identification of Supporting Resources

The Department also identified needed supporting resources to facilitate the restoration of energy systems. For example, the Department provided assistance to the Colonial Pipeline Company (Colonial), which transports 100 million gallons of fuel daily throughout much of the southern United States, to obtain replacement generators to restart its pipeline. The Department worked with the Mississippi State Highway Patrol to allow delivery of the generators and provide security for Colonial's repair crews. In addition, Department personnel facilitated the reopening of a refinery in Port Arthur, Texas, by drafting access authorization letters, which allowed the delivery of equipment and personnel to the refinery after workers were prohibited from returning to the refinery by law enforcement officials. The Department also took numerous actions in cooperation with Federal agencies and industry to provide food, water, diesel fuel, and sleeper cars to emergency response and repair crews in Louisiana.

Monitoring Damage and Repair Work

Finally, the Department monitored energy system damage and repair work and disseminated updated status information in a timely manner to industry, state and Federal government agencies, and to interested citizens. The Department began posting situation reports on its website before Hurricane Katrina struck Louisiana and has continued to provide updates throughout the restoration process. As of October 20, 2005, the Department had placed on its website 63 Gulf coast situation reports and 10 power outage maps. The reports were an important tool in communicating the extent of damage to the Gulf coast's energy infrastructure and the progress of repair work. According to energy industry and agency officials at the Federal Energy Regulatory Commission and the Federal Emergency Management Agency, the timeliness and accuracy of the situation reports helped in assessing impacts to the energy supply while ensuring that reliable information was provided to the public. In addition, Departmental ESF-12 personnel provided information about power outages and estimated power restoration during Hurricane Rita. This information allowed officials to effectively allocate resources needed for emergency response.

Opportunities for Improvement

While the Department took, what we concluded to be, effective action to assist in restoring energy systems in response to Hurricanes Katrina and Rita, we identified opportunities to improve the Department's response in future ESF-12 missions. These opportunities include: streamlining communications, leveraging Department assets, adequately provisioning the ESF-12 emergency response teams, and determining appropriate emergency support staffing levels.

Communications Management

During the hurricanes, the Department received duplicative requests for information when external entities requested the same information from different ESF-12 personnel. Problems arose when several ESF-12 personnel were independently working to collect and provide the same information in response to the multiple requests. Because of the Department's mission to serve as a focal point for energy-related issues, the effective management of communications from external and internal sources is crucial to success. Accordingly, the Department needs to clarify the appropriate point of contact to whom external sources should direct future information requests. This information should be disseminated proactively to Department personnel and to appropriate external sources.

Department Assets

Although Departmental assets were used in response to energy restoration requests, the Department did not have a mechanism readily available to identify emergency equipment or personnel that could be used to assist in restoration efforts. In responding to the energy disruptions, the Y-12 National Security Complex provided surplus power generators for Hurricane Katrina relief in Louisiana, and the Southwestern Power Administration helped restore power to over 20,000 customers in Southeast Texas. However, officials acknowledged that while there is a cadre of knowledgeable Department personnel, there were difficulties in real-time identification of individuals who had the detailed knowledge to assist in particular situations caused by the hurricanes. These included those with expertise in energy markets, and distribution and delivery systems problems. Maintaining an inventory of Department assets which are available on a contingency or stand-by basis, both equipment and personnel, should improve future ESF-12 efforts.

Responder Equipment

The Department established so-called “Go Kits” of equipment to support responders during their deployment. Department managers and responders identified several equipment additions that would enhance the “Go Kits” to assist the responders during deployment. For example, we interviewed several responders who indicated their hurricane relief efforts would have been more effective if they had been equipped with mobile global positioning systems and properly-configured computer equipment. We concluded that the Department should develop a standardized suite of responder equipment that included all items needed for maximum self-sufficiency. This would assist responders in meeting their mission assignments during their deployment.

Emergency Support Staffing

The impacts of Hurricanes Katrina and Rita strained the Department’s ESF-12 staffing levels and its ability to respond to multiple disasters simultaneously. In 2005, the responsibility for the ESF-12 function was transferred to the Office of Electricity Delivery and Energy Reliability. While the organization had 8 personnel dedicated as initial emergency responders, the severity and magnitude of the hurricanes required the deployment of 35 personnel to 9 different emergency centers. The Department augmented its staffing during the crisis with trained contractor personnel and Federal employee volunteers from within the Department. In light of the multiple challenges faced in the recent efforts, staffing requirements necessary to fulfill ESF-12 requirements should be reexamined to ensure that the Department is in a position to fully meet its obligations under the National Response Plan.

RECOMMENDATIONS

We recommend that the Director, Office of Electricity Delivery and Energy Reliability:

1. Clarify with external sources the appropriate ESF-12 point of contact to whom they should direct information requests, and proactively disseminate such information to Department of Energy personnel and appropriate external sources;
2. Develop an inventory of available Department resources for emergency energy restoration;

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3. Ensure that deployed teams are adequately provisioned with a standardized suite of equipment; and,
 4. Determine whether additional personnel are necessary to meet the Department's National Response Plan obligations.

**MANAGEMENT
REACTION**

The Director, Office of Electricity Delivery and Energy Reliability, concurred with the recommendations in the report. Management was in full agreement with the four recommendations contained in the report and provided appropriate action plans to address the recommendations. Management's comments are included in Appendix 3.

OBJECTIVE

The objective of this review was to identify the actions taken by the Department in response to Hurricanes Katrina and Rita and to assess whether these actions fulfilled the Department's obligations as stated in the Department of Homeland Security's National Response Plan.

SCOPE

The review was performed in October 2005, at the Office of Electricity Delivery and Energy Reliability in Washington, D.C. In particular, we performed a review of specific ESF-12 actions taken by the Department in response to the hurricanes.

METHODOLOGY

To assess the Department's response to Hurricanes Katrina and Rita, we:

- Discussed actions taken by the Department with other Federal entities, including representatives from the Federal Emergency Management Agency (FEMA) and the Federal Energy Regulatory Commission;
- Interviewed Department officials from the Office of Electricity Delivery and Energy Reliability and the Office of General Counsel;
- Obtained information from the Bonneville Power Administration, Southwestern Power Administration, Southeastern Power Administration, and the Western Area Power Administration;
- Spoke with industry officials from Exxon Mobil Corporation, Entergy Corporation (Entergy), and Colonial Pipeline Company;
- Interviewed the Department's initial emergency response team members;
- Identified the Department's ESF-12 responsibilities contained in the Department of Homeland Security's National Response Plan;

- Reviewed the Office of Electricity Delivery and Energy Reliability's Emergency Support Function-12 Operations Manual;
- Examined the Department's Gulf Coast Hurricanes Situation Reports and emergency response team logs;
- Reviewed the Office of Electricity Delivery and Energy Reliability organizational structure;
- Reviewed the Department's listing of potential emergency response team members and deployment schedules;
- Evaluated the Department's communication channels;
- Examined Lessons Learned documents; and,
- Reviewed hurricane information posted on various internet websites, including the Energy Information Administration daily reports.

CHRONOLOGY OF SIGNIFICANT DEPARTMENT ACTIONS - 2005


- August 27** FEMA activates ESF-12.
- August 29** Hurricane Katrina makes landfall near the Louisiana-Mississippi border.
- August 31** The Secretary announces a loan from the Strategic Petroleum Reserve. The Department coordinates with the Environmental Protection Agency to grant waivers to use high-sulfur off-road diesel fuel.
- September 1** The Department assists Colonial in obtaining replacement generators to restart its pipeline and works with the Mississippi Highway Patrol to grant Colonial access to its damaged facilities to bring in the generators and provide security for repair crews. The Department also works with FEMA so shipments of food and water can be quickly delivered to Entergy repair crews.
- September 2** The Department works with FEMA and Amtrak to provide sleeper cars to first responders in New Orleans.
- September 3** The Department assists in making arrangements to distribute 1.2 million gallons of diesel fuel to first responders at 7 sites in Louisiana.
- September 24** Hurricane Rita strikes near the Texas-Louisiana border. ESF-12 staff assists workers at a refinery in Port Arthur, Texas to obtain clearances for restoration work.
- September 27** The Department facilitates the restoration of power to the Lake Livingston Pumping Station in Texas.
- September 28** The Secretary issues an order to authorize and direct CenterPoint Energy to temporarily connect and restore power to Entergy, providing power to Texas residents affected by Hurricane Rita.
- October 1** The Southwestern Power Administration helps restore power to over 20,000 customers and residents in North Jasper County, Texas.



Department of Energy
Washington, DC 20585

NOV 8 2005

MEMORANDUM FOR: WILLIAM S. MAHARAY
DEPUTY INSPECTOR GENERAL
FOR AUDIT SERVICES
OFFICE OF INSPECTOR GENERAL

FROM: KEVIN M. KOLEVAR 
DIRECTOR
OFFICE OF ELECTRICITY DELIVERY
AND ENERGY RELIABILITY

SUBJECT: Response to the Inspector General Draft Special Report
entitled "The Department of Energy's Response to
Hurricanes Katrina and Rita"

Thank you for the opportunity to review and comment on this draft special report concerning the Department of Energy's activities in support of the National Response Plan during two recent Gulf Coast hurricanes. The report accurately depicts both the events during that time period as well as Department of Energy activities in response to those events. We are in full agreement with the four recommendations contained in the draft report:

- 1. Clarify with external sources the appropriate ESF-12 point of contact to whom they should direct information requests, and proactively disseminate such information to Department of Energy personnel and appropriate external sources.**

This recommendation addresses one of the most trying problems faced by DOE responders – similar questions from multiply requestors (most often from different levels within the Department of Homeland Security) addressed to different DOE responders in different locations. We have decided to address this problem by making three changes in our procedures: (1) responders will e-mail, when possible, such questions to two headquarters point of contact even if, as will usually be the case, they answer them directly themselves; (2) the daily responders' telephone call-in will be expanded to include discussion of these specific questions received during the past 24 hours; and (3) we have already notified DHS that all of their questions need to be channeled through a single point of contact within OE. These steps should both improve internal communications and eliminate some duplication of effort

- 2. Develop an inventory of available Department resources for emergency energy restoration.**



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While the Department maintains an active list of personnel who are able to respond, we are not aware of a similar list of equipment (e.g., generators) which could be made available – either as a donation or a loan – to Federal, State or local responders. We will meet with the headquarters Office of Management and General Counsel to determine the best way to develop a protocol for equipment and to work with those DOE offices who have equipment to determine how best to develop an inventory.

3. Ensure that deployed teams are adequately provisioned with a standardized suite of equipment.

Each natural disaster seems to bring with it a new set of needs which confront the DOE responders. The recommendation is on target, but can be expanded to include software and data as well as equipment. We have begun to address this issue in two ways: (1) since communications problems are inevitably the first ones to plague responders in any emergency, we have made arrangements that an appropriate staffer from the DOE Office of the Chief Information Officer will accompany them in the next major response event to learn about these issues and make recommendations about equipment and (2) we are working with the National Energy Technology Laboratory to develop a library of key energy infrastructure facilities and assets which can be on a compact disk issued to responders to help them understand more about the facilities and their special needs.

4. Determine whether additional personnel are necessary to meet the Department's National Response Plan obligations.

Our human capital management planning, juxtaposed with our experience in the recent Gulf Coast hurricanes, has indicated several skill gaps within the Office. We hope to address those needs in the next budget cycle.

Finally, I would like to thank the IG team members for their solid professionalism as well as sensitivity during their review. In several instances, they rescheduled meetings or found ways to lessen our burdens in response to the stress of the almost-daily new developments caused by our National Response Plan responsibilities. This consideration was greatly appreciated.

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