DRAFT
National Security Reform Project
Historical Case Studies
Case Study #6
February 22, 2007
Not for Further Distribution
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The National Response Plan and Hurricane Katrina

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Executive Summary

Historical Context

Introduction

When Hurricane Katrina struck the Gulf Coast in August 2005, the National Response Plan (NRP) was the document that governed the conduct of Federal participation in the management of that catastrophic emergency. The NRP had been finalized and approved in December 2004, and this was the first real test of the plan for a catastrophic emergency.

This paper examines how well the NRP worked in the response to the emergency that included Hurricanes Katrina and Rita and the flooding of New Orleans—all referred to in this paper as "Katrina." The response to Katrina involved the Federal Government, the governments of Florida, Alabama, Mississippi, Louisiana, and Texas, the City of New Orleans, other cities, parishes, and counties, as well as non-governmental organizations, and private sector companies. This paper is concerned primarily with some of the actions of the Federal Agencies.[1]

For the purpose of examining the interagency process, this paper will discuss how well the NRP served as the basis for the response to Katrina and to the extent possible determine why it did well in some instances and not as well in other instances. The focus of this paper is on the response phase, and the paper does not address the recovery phase.[2] This is an important but necessary limitation for the paper because it is recovery rather than response that is the source of many of the perceived problems.

Although much has been written about Katrina, it is hard to find reliable data and separate truth from biased reports. Sources consulted in the preparation of this paper vary greatly in quality and objectivity. Most press and weblog accounts are of little use. Journal articles are better but still exhibit a tendency to find fault without taking a larger view. Official publications available at this time are fairly reliable but reflect a defensive attitude, and the customary lessons-learned reports dwell in details and emphasize faults. An objective history has yet to be written.

Katrina was a very large emergency, and it is difficult to look at the whole thing and make sense of it. There are numerous aspects of how it was managed that merit study. One could, and someone should, examine the role that party politics plays in the relationships among city, country, and state governments and the Federal Government. Similarly, an examination of the ambiguous attitude of the Department of Defense toward providing support to civil authorities for domestic operations is in order. Another potential research topic is the effect formation of the Department of Homeland Security had on the ability of FEMA to manage emergencies, which that agency did admirably before and even after DHS was formed—until Katrina. In order to make a start on understanding Katrina, this paper is limited to describing the development of the NRP and presenting five vignettes that illustrate how well the NRP served as a basis for managing the consequences of Katrina during the response phase.

The National Response Plan

The National Response Plan (NRP) is an impressive tome measuring about 1½ inches thick and consisting of 456 pages, including a Base Plan, 7 Appendices, 15 Emergency Support Annexes, 9 Support Annexes, 7 Incident Annexes, a 27 page Quick Reference Guide, and in addition a 160 page Catastrophic Incident Supplement marked "For Official Use Only" published separately.[3] Appendices include definitions of 141 key terms, identify 153 acronyms, and cite 70 authorities and references. The Emergency Management Institute at the National Emergency Training Center at Emmitsburg, Maryland, provides an online course teaching the NRP. Altogether, the NRP is a formidable and almost incomprehensible document that nevertheless is very good in some respects and is better than nothing in all respects.

The idea of a single response plan that covers the full range of emergencies (the all-hazards approach) is obvious and attractive. This has been a goal since the formation of FEMA in 1979 that consolidated into one agency five different organizations each of which addressed a particular part of emergency management. The Defense Civil Preparedness Agency (DOD), Federal Disaster Assistance Administration (HUD), U.S. Fire Administration (DOC), Federal Preparedness Agency (GSA), and the National Flood Insurance Administration (HUD) were transferred to a new independent agency reporting directly to the President. [4] The idea was to blend in a harmonious manner these different programs and people into a unified approach.

From the outset, there was tension between the people working on national security emergency preparedness (civil defense, national mobilization, national stockpile, and counterterrorism) and those working on national disaster response, recovery, mitigation, and preparedness. This tension was never really resolved, but went away when after the end of the Cold War the national security emergency preparedness part of FEMA was dismantled, and management of natural disasters became the predominant focus of the agency. During the Clinton Administration, the management of natural disasters, particularly hurricanes, was improved greatly and widely admired.[5] When the Bush Administration took over, FEMA continued to function well for natural disasters, and few noticed the absence of attention to terrorism and other national security functions—until the attacks of 11 September 2001, which caused changes to be made in the Government that to some extent focused so much on terrorism that preparedness for natural disasters suffered.

The Emergency Management Cycle

The classical formulation of Emergency Management developed during the first 12 years of FEMA's existence posited four phases: response, recovery, mitigation, and preparedness. With the advent of terrorism, a fifth phase, prevention, has been added.[6] The phases of the Emergency Management Cycle occur both sequentially and simultaneously: They are defined as follows:[7]

- Prevention is a set of actions taken to avert an incident that would cause an emergency. It includes deterrence, protection, and defense.
- Mitigation is a set of actions taken to reduce the adverse consequences of an emergency.
- Preparation is the set of actions that get people, equipment, and supplies ready for response and recovery operations and mitigation programs.
- Recovery is a set of actions taken to restore the status quo ante or better after an emergency has occurred.
- Response is a set of actions taken during and after the incident to save lives and minimize disruption.

Response focuses on immediate actions to save lives and provide essential care and assistance to people affected by an emergency. Response is a short duration operation that does a few things very well and very quickly. Capabilities needed to have an effective response are management; situational awareness; control of people, life saving; life support, and administrative support. Trained professionals who work in law enforcement, fire fighting, emergency medical services, and emergency management agencies are usually the first officials to notice or be notified of the onset or existence of an incident that has adverse consequences—an emergency. Local and state governments manage most emergencies, but catastrophic emergencies that require immediate and proactive intervention by the federal government and are what the NRP addresses.

Evolution of Emergency Response Planning

From the start, there were two major problems in dealing with response. The first was the relationship among local, state, ad federal agencies. The second was the relationships of the federal agencies with FEMA and among themselves. In the pre-911 environment, the major thrust of FEMA was to coordinate the response activities of the Federal Executive Branch agencies that have roles to play in emergency response.

In that era, federal support of emergency response was entirely reactive, and coordination was arranged to meet the special needs of each different kind of emergency. A top-level coordination committee was established, an emergency coordinator was appointed by each department and agency, an operations center was established at FEMA, and programs were put into place to hire temporary workers and purchase emergency supplies. Courses were taught at the National Emergency Training Center on how to conduct response operations, and exercises

were held to practice them. Reliance was placed on voluntary collaboration, which for the most part was provided willingly by other agencies. Federal support and funding was to be provided incrementally in response to requests for assistance from the states. The prevailing rule was that the Federal Government could do nothing until and unless the Governor of a State asked for help. During this period, despite ups and downs in budgets and leadership, FEMA continued to improve the doctrine and practice of emergency response.

In 1992, Hurricane Andrew devastated Florida and resulted in much criticism of FEMA. Although the FEMA response was substantial, it was judged inadequate to meet the needs and the expectations and resulted in a public outcry that FEMA was unable to do its job properly.[8] The first overall plan—the Federal Response Plan (FRP)—had just been approved, and this was its first test for a catastrophic emergency. The major achievement of the FRP (and a very clever bureaucratic maneuver) was to have the heads of the agencies sign the document—thus obligating their subordinates to respect the plan.[9]

The 9/11 Attacks had great impact on FEMA as it did on the rest of the Government. Suddenly, preventing future terrorist attacks became the primary focus, and natural disasters receded in importance. The official definition of Homeland Security mentions only terrorism. Thus, when FEMA was folded into the newly formed DHS, it was outnumbered by law enforcement types concerned more with preventing terrorist attacks than cleaning up after hurricanes. Consequence management was deemed less important than deterrence, security, protection, and finding terrorists before they could strike. FEMA was looted for money and key personnel and the protests of the FEMA director were not only ignored but were resented by the leaders of DHS. The situation was not so bad during the Tom Ridge era but was exacerbated by the arrival from Justice of Secretary Chertoff accompanied by a gaggle of lawyers. A large number of senior people left FEMA, and many of them found jobs elsewhere in the emergency management community. The preparedness function and the crucial task of meting out federal dollars to the states and localities were taken away from FEMA and assignee to a domestic preparedness directorate was concerned only with terrorism. Despite these problems, FEMA did very well in dealing with declared disasters including numerous hurricanes up until the arrival of Katrina.

Preparation of the National Response Plan

On 23 February 2003, the President issued Homeland Security Presidential Directive/HSPD-5 that, among other things, required the Secretary of Homeland Security to "develop, submit for review to the Homeland Security Council, and administer a National Response plan (NRP) …This plan shall integrate Federal Government domestic prevention, preparedness, response, and recovery plans into one all-discipline, all-hazards plan." [10]

The initial version of the NRP was sent out for coordination in May 2003.[11] It was considerably different form the approved version that was issued in December 2004 and is in effect today. The initial plan was an ambitious effort by DHS to cover all homeland security functions in a single plan, as was the intent of HSPD-5. The initial version asserted the right of the Secretary of DHS to designate the duties and direct the activities of the other departments and agencies. The ten functions of this initial version were as follows:

Figure 1. Functions in the Initial National Response Plan, May 2003

I. Information/Intelligence, and Warning
II. International Coordination
III. Terrorism Preparedness
IV. Domestic Counter-Terrorism
V. Border and Transportation Security
VI. Infrastructure Protection
VII. Military Defense
VIII. Emergency Management
IX. Law Enforcement
X. CBRNE Hazards

The draft initial version provoked fierce opposition from DOD, DOJ, and many of the other agencies who would not cede directive authority over their organizations to the Secretary of DHS. DOD was particularly opposed to the initial version and made it clear that Military Defense was the responsibility of DOD and that DOD would participate in other homeland security functions only when directed by the President and if such participation did not interfere with other DOD operations. Faced with near unanimous non-concurrence from the Executive Branch, DHS retreated in some confusion and went back to the drawing board. The result was a final NRP that was limited to emergency management. The state goal of HSPD-5 to address all homeland security functions in a single plan was not achieved.

The National Incident Management System

The NRP is inextricably intertwined with another document, the National Incident Management System (NIMS),[12] although it is not necessarily a marriage made in Heaven. HSPD-5 specifies that the Secretary shall "develop, submit for review to the Homeland Security Council, and administer a National Incident Management System (NIMS). This system will provide a consistent nationwide approach for Federal, State, and local governments to work effectively and efficiently together to prepare for, respond to, and recover from domestic incidents, regardless of cause, size, or complexity."[13] NIMS is based on the Incident Command System (ICS) developed originally by the wildfire fighting community and later expanded for use mostly by local governments to solve the mystery of who is in charge of incidents that start small but grow as the extent becomes clear. NIMS instruction is required for emergency managers and is taught by the National Emergency Training Center and numerous academic institutions.

The NIMS and the NRP are basically incompatible. NIMS builds a command structure from the bottom up based up the Integrated Command system (ICS) principle that the senior fire captain on the scene remains in charge of suppression operations no matter how many bells the fire triggers. The NRP imposes a top-down command structure that consists of a wide variety of Washington-based committees and regional committees to manage the operation collaboratively along with the appointment of numerous senior officials to be in charge of response operations in the field, plus a similar hierarchy of committees and officials for each of the numerous

participating agencies. This is like tunneling independently from two sides of a mountain hoping the two tunnels meet in the middle. Somehow, the two systems manage to meet in the middle, although not always cleanly. This discontinuity was duly noted in the White House Lessons Learned, and the recommended solution is to amend the NRP to fit better with the NIMS. Since the two plans have different constituencies, this effort to force fit the two approaches is unlikely to work very well. In any case, any command structure that is assembled *ad hoc* after the emergency has started will not work very well for the situations we face now.

The NRP as a National Plan

The goal of HSPD-5 was, among other things, to have a "single national plan." This goal has not been achieved. Appendix 4 to the NRP lists 12 plans that are not covered by the NRP, including most importantly the DOD Civil Disturbance Plan that deals with the use of federal troops to quell riots and deal with civil disturbances. Some of these additional plans are international and deal with cooperation with Canada and Mexico. Recently, there have been several special plans promulgated for the anticipate H5N! Influenza pandemic. Prior to the formation of DHS there was one National Security Strategy and many plans for responding to emergencies. We have not been able to consolidate the plans, but we have added numerous national strategies that cover a wide variety of matters large and small. In addition to somewhat overlapping National Strategies for National Security and Homeland Security there are national strategies for Combating Terrorism, Combating WMD, Pandemic Influenza, Securing Cyberspace, Border Patrol, Maritime Security, Suicide Prevention, Drugs, and Bicycle Safety to name just a few.[14] Instead of unification and simplification, there has been proliferation and complication.

The Importance of Being There

The creation of DHS has caused an unforeseen problem in achieving willing collaboration from other agencies. During the Cold War, FEMA was charged with formulating policy, preparing plans, providing instruction, and conducting exercises for all of the agencies. FEMA had no authority to order the agencies to do anything, no funds to give to the agencies for emergency preparedness, and was meant to be only a coordinating agency. FEMA's effectiveness (or lack thereof) came from obvious Presidential support and access and effective agency leadership. While emergency preparedness and response was a part-time thing for the other agencies, it was a full-time job for FEMA. In this role, FEMA was apart from the agencies, somewhat elevated above them for this purpose, and was not a competitor or threat—although perhaps a nuisance.

When FEMA was moved into DHS, the situation was changed. As a subordinate element of a cabinet level department, FEMA was no longer set apart from the daily fray and became just another bureau competing for funds, staff, and influence within its own department and with the other departments. DHS now had the job of coordinating the efforts of other agencies, but while DHS was equal it was not necessarily accepted as first among equals. The big alpha males of the Executive Branch—DOD and DOJ—did not cede turf to DHS willingly, and the Departments whose earlier, orderly fields of action had been disrupted by transfers to DHS, were miffed and unwilling to cooperate. In that respect, the new set up was rife for bureaucratic wrangling. The

initial result was at best half-hearted compliance and at worst indifference. But it is better now. Just as the 9/11 Attacks changed attitudes toward the threat of terrorism, Katrina changed attitudes toward emergency management.

Emergency Support Functions

The basic organizational scheme of the National Response Plan is the division of the response operation into 15 Emergency Support Functions—ESFs. The FRP had 12 ESFs. Three more (13, 14, and 15) were added during the preparation of the NRP, and some changers were made in content and emphasis in some of the other functions. Figure 2 shows the ESFs as they were for Katrina. The letter "C" stands for Coordinator and "P" for Primary Agency. Other agencies that participate in an ESF are listed as "S" for Support Agency. An ESF coordinator is in effect the overall manager of an ESF and is responsible for pre-incident planning, maintain contact with P and S agencies in the ESF, holding periodic meeting and conferences, and coordinating ESF activities for catastrophic incident planning and critical infrastructure protection. When an ESF is activated for an operation, a Primary Agency becomes a Federal Executive Agent reporting to the Federal Coordinating Officer to accomplish the ESF mission. Coordinators are peacetime managers responsible for readiness to perform, and Primary Agencies are operational managers responsible to get things done. This is a reasonable division of labor.

Figure 2. Emergency Support Functions of the National Response Plan

ESF	Name	Coordinator	Primary Agencies
1	Transportation	DOT	DOT
2	Communications	DHS/NCS	DHS
3	Public Works & Engineering	DOD/USACE	DOD/USACE, DHS/FEMA
4	Firefighting	USDA	USDA
5	Emergency Management	DHS/FEMA	DHS/FEMA
6	Mass Care, Housing, and Human Services	DHS/FEMA	DHS/FEMA, ARC
7	Resource Support	GSA	GSA
8	*Public* Health and Medical Services	HHS	HHS
9	Urban Search and Rescue	DHS/FEMA	DHS/FEMA
10	Oil and Hazardous Materials Response	EPA	EPA, DHS/USCG
11	Agriculture and Natural Resources	USDA	USDA,
12	Energy	DOE	DOE
13	Public Safety and Security	DHS, DOJ	DHS, DOJ
14	Long-Term Community Recovery and Mitigation	DHS/FEMA	DOC, HHS, DHS/FEMA
15	External Affairs	DHS	DHS/FEMA

The ESFs were created to make explicit the relationships and interdependencies among the agencies in getting things done during times of urgency and stress. Nothing gets done in the Federal Executive Branch by one agency acting alone. Even small functions, such as regulation and oversight of radioactive waste movement and disposal, depend on close collaboration among a dozen or so sub-elements of various agencies. Simply designating a department as responsible for some function would not take into account that the operating elements of that department would need to organize a cluster of bureaus, offices, and regions from other departments to get the whole thing done. The ESFs have the virtue of identifying each agency that has to be involved and designating a coordinator to assure that the participants in a particular function know the part they are to play when the time comes to get things done.

Over the years, FEMA, which was intended to be solely a management and coordinating agency, picked up some operational responsibilities, primarily in the recovery phase but some that also were involved in response operations. During Katrina the National Disaster Medical System (NDMS) was managed by FEMA, and the US&R teams are subsidized by FEMA. FEMA can direct the operations of these elements, but for most functions FEMA still lacks directive authority and must rely on good will and cooperation of other agencies to accomplish the work.

Implementation of the NRP for Katrina

In order to understand what happened during the response phase for Katrina, it is necessary to have a basic appreciation for the timeline of events and some idea of what was done during the response phase. Then it is possible to examine some of the issues that arose from what was done and not done during the response operation. A time line showing some of the significant events in the Response Phase are summarized in Figure 3.[15]

Hurricane Katrina began as a tropical depression on 24 August 2005 and became a Tropical Storm as it moved over the Bahamas. On 25 August, Katrina was upgraded to a Category 1 hurricane and crossed Florida, killing 9 people and doing some significant damage. Early on Friday, 26 August, Katrina grew into a Category 2 Hurricane as it moved out into the Gulf of Mexico and triggered a response along the Gulf Coast.

The response phase for Katrina for the Gulf Coast lasted twelve days, during which actions were taken to evacuate, rescue, feed, shelter, and provide medical care to the victims of the emergency. The response phase began at 9:00 am on Friday, 26 August 2005, when the White House declared an impending disaster and the deployment of Federal teams and resources started. The federal response operation began three full days before the hurricane made landfall. The response phase ended on the night of Tuesday, 6 September 2005, when there were only 10,000 people remaining in New Orleans and the emphasis shifted to recovery.[16] The accomplishments of the response operation for Katrina are as follows.[17]

- Over 1.000,000 people self-evacuated safely before landfall
- 220,000 people were evacuated by air, bus, and train
- 63,000 people were rescued from flood waters
- 81,000 people were given medical treatment

- 72,000 people were immunized against infection
- 1,100 temporary shelters were in operation and provided 3.42 million overnight stays
- 50 million hot meals and snacks were served to evacuees
- Over 5,000 truckloads of water, food, ice, and other supplies were delivered

Approximately 1,300 persons lost their lives as a direct result of Katrina. This is about 0.1% of the 1,300,000 persons evacuated.[18] Despite this very low fatality rate and the impressive accomplishments listed above (which exceeded all previous performances), the prevailing conventional wisdom is that the federal response operation was a failure. This misconception is due to the fact that demand exceeded supply and failed to meet expectations. However, there are also some problems hat became evident during the operation, and the next part of this paper addresses five of them: Response Operation Management; Interagency Management; Search and Rescue Operations; Provision of Mass Care, and The Superdome. For each of these proglems, there is a discussion of the "facts" followed by commentary. Finally, some preliminary observations are offered.

Figure 3. Timeline for Response to Hurricane Katrina (Selected Items

Friday, 26 August 2005.

- At 9:00am, White House declares an impending disaster and orders DHS/FEMA to prepare for landfall.
- By 5:00pm, it is apparent that Katrina would hit Louisiana and Mississippi as a Category 3 hurricane.
- At 11:00pm it is clear that Katrina would impact the New Orleans area and Gulfport, Mississippi. Governor Kathleen Blanco of Louisiana declares a State of Emergency for Louisiana and Governor Haley Barbour does the same for Mississippi.
- The National Response Coordination Center and Logistical Coordination Centers at FEMA are activated and placed on 24-hour operational status. Emergency Response Teams and some supplies are being prepositioned in anticipation of landfall.

Saturday, 27 August 2005

- By 5:00am, Katrina is a category three storm with winds up to 115mph. Hurricane warnings were issued for Louisiana's Southern Coast and the Northern Gulf Coast areas.
- At about 10:00am, Katrina is rated as a category 4 storm.
- William Lokey, of FEMA, is appointed FCO for Louisiana Emergency
- FEMA Regions IV (Atlanta) and VI (Texas) are fully activated.
- In the early afternoon, the Director of the National Hurricane Center calls Mayor Ray Nagin of New Orleans and advises a mandatory evacuation.
- At 5:00pm, Mayor Nagin declares a state of emergency in New Orleans and issues a voluntary evacuation order encouraging people in low-lying areas to evacuate.

Sunday, 28 August 2005

- The possibility of a levee break is briefed to DHS Secretary Michael Chertoff and FEMA Director Michael Brown.
- At 7:00am, Katrina is declared a Category 5 Hurricane with 160mph winds.
- 11:00am: Mayor Nagin orders the mandatory evacuation of New Orleans
- At Noon: Governor Blanco requests relief funds; Governor Bob Riley declares a state of emergency for Alabama; President Bush declares a state of emergency in Mississippi, Florida, and Alabama; FEMA sends water and supplies to Georgia and Texas
- Major Nagin announces a 6:00pm curfew in New Orleans
- FEMA Director Brown moves to Baton Rouge.

Monday, 29 August 2005

- At 6:10am Katrina makes landfall along the Gulf Coast as a Category 4 Hurricane with winds of 145mph.
- 9:00am: The levee along the lower 9th Ward of New Orleans is breached and flooding of 6-8 feet results in some areas
- 2:00pm: 17th Street Levee is breached; 20% of New Orleans is flooded.
- 1:45pm: President Bush declares a disaster for Louisiana and Mississippi allowing the use of federal funds under the Stafford Act.
- Rescue operations commence in New Orleans
- Secretary of Homeland Security Chertoff declares an Incident of National Significance, activates the National Response Plan, and designates Michael Brown as PFO.

Tuesday, 30 August 2005

- Morning: a second levee breaks and 80% of New Orleans is flooded; FEMA stops volunteer firefighters with hurricane expertise due to a lack of security in the city and asks them to wait for National Guardsmen to secure the city; an estimated 50,000 to 100,000 people remain in New Orleans.
- 4:30pm: Officials call for anyone with boats to help with rescue mission
- 810:pm: Reports suggest looting is widespread
- 8:55pm: Corps of Engineers begin work on 17th Street Levee repairs
- 10:15pm: Governor Blanco orders evacuation of Superdome with no timetable for completion

Wednesday, 31 August 2005

- Morning: Governor Blanco requests more National Guardsmen from President Bush and. orders total evacuation of city.
- 10:00am: Secretary of HHS declares federal health emergency throughout the Gulf Coast and sends in medical supplies and workers.
- Buses arrive to evacuate 25,000 people from Superdome; 55,000 are in shelters
- 12:30pm: refugees from New Orleans begin arriving in Houston; four Navy ships with emergency supplies arrive; water level stops rising in New Orleans; looting grows and police focus on violence and looting rather than search and rescue.
- Military transport planes take seriously ill and injured to Houston.

Thursday, 1 September 2005

- Violence, carjacking, and looting continue; military presence is increased.
- Mayor Nagin pleads for more buses
- President Bush appoints Presidents GHW Bush and Bill Clinton to raise funds for victims
- Superdome and Convention Center house 45,000 refugees
- Senate begins work on emergency aid bill
- Secretary Chertoff says he was unaware of people at Convention Center until recently
- At 8:00pm, FEMA Director Brown says he was just informed a few hours earlier about the situation at the Convention Center.

Friday, 2 September 2005

- President Bush tours Gulf area and called the results "not acceptable"
- Additional National Guardsmen arrive in area
- Congress approves $10.5 billion for immediate rescue and relief efforts
- Explosions occur at a chemical storage plant in New Orleans and there are scattered fires.
- Airlines begin flying refugees out of New Orleans to San Antonio

Saturday, 3 September 2005

- President Bush orders active duty military troops to the Gulf Coast
- National Guard strength is at 40,000 in the area
- USDA announces emergency grants of $62 million for dislocated workers

Sunday, 4 September 2005

- Superdome is fully evacuated
- Governor Blanco declares a Public Health Emergency
- Carnival Cruise Line offers ships for 7,000 victims

Monday, 5 September 2005

- One gap in levees is closed; work continues on another gap
- President Bush returns to the Gulf Coast
- Additional 4,700 active duty troops are dispatched to the area
- Some oil refineries resume production

Tuesday, 6 September 2005

- Executive and legislative branch pledged separate investigations into the Federal Response
- USACE begins pumping water out of New Orleans
- Fewer than 10,000 people remain in New Orleans and streets are secure
- Mayor Nagin authorizes police and military personnel to remove anyone who refused to leave their homes

Response Operation Management

The NRP lays out an elaborate set of instructions for the overall top level management of the response operation. Despite confusion and ambiguity in these arrangements, they worked well enough in previous response operations, but they did not work as well for Katrina when their intrinsic contradictions were compounded by the sheer magnitude of the task at hand. One difficulty is the relationship established by the NRP between the principal Federal Official (PFO) and the Federal Coordinating Officers (FCOs). Another difficulty is the position of the Secretary of DHS between the PFO/FCO and the President.

"The (PFO) is personally designated by the Secretary of Homeland Security to facilitate Federal support to the established ICS Unified Command structure and to coordinate overall Federal incident management and assistance activities across the spectrum of prevention, preparedness, response, and recovery. The PFO ensures that incident management efforts are maximized through effective and efficient coordination. The PFO provides a primary point of contact and situational awareness locally for the Secretary of Homeland Security. … The PFO does not direct or replace the incident command structure established at the incident, nor does the PFO have directive authority over the SFLEO (Senior Federal Law Enforcement Official), FCO, or other Federal and State officials." [19]

The Federal Coordinating Officer (FCO) "manages and coordinates Federal resource support activities related to Stafford Act disasters and emergencies. The FCO assists the Unified Command and/or the Area Command. The FCO works closely with the PFO, SFLEO, and other SFOs. In Stafford Act situations where a PFO has not been assigned, the FCO provides overall coordination for the Federal components of the JFO and works in partnership with the SCO to determine and satisfy State and local assistance requirements." [20] Federal Coordinating Officers are appointed for each declared disaster. They are in effect the field bosses for FEMA operations. On 29 August 2005, when Katrina made landfall along the Gulf Coast, FEMA had 13 FCOs and 15 Joint field Offices dealing with declared disasters in Alaska, California, Utah, Montana, North Dakota, Oklahoma, Maine, New York, Florida, Alabama, Mississippi, and Louisiana. Each of these FCOs was specially trained and certified to be a federal coordinating officer.[21] For the Katrina operation, the organizational structure on 29 August 2005 was as follows:[22]

Disasters	FCOs
1601 Louisiana	Sandra Coachman
1602 Florida	Justin DiMello
1603 Louisiana	William Lokey
1604 Mississippi	William Carwile
1605 Alabama	Ron Sherman

This organizational arrangement provided for each state a person and a location (the JFO) for coordinating the federal response effort. However, the coordination of these efforts and the allocation of resource among the states was the province of the next higher level of management, which turned out to be more complicated because of the uncertain relationship between the PFO and the JCOs.

For the Katrina operation, Secretary Chertoff appointed Michael Brown the Under Secretary for Emergency Preparedness and Response and Director of FEMA to be the PFO, and Brown arrived in Baton Rouge on 29 August. This act removed Brown from his executive position at the head of the various Washington DC coordinating councils and placed him in a field office job for which he was neither trained nor apparently very good at. By not allowing Brown to function as the director, something that he did very well, Chertoff's action left a power vacuum back at FEMA headquarters. This move can only be attributed to a failure of Chertoff and his aides to appreciate what the NRP had in mind. The error was compounded when Chertoff told Brown not to move around the stricken area but to confine himself to the JFO at Baton Rouge. This restriction deprived Brown of the opportunity to see what was happening in person and represent the President personally with other officials on their own turf. Brown was put into the position of being a powerless PFO but expected to act as if he were in charge. In this case, however, Brown was still Director of FEMA as well as PCO so the FEMA FCOs were under his authority and did follow his direction as PFO.

Perceived problems in the response operation forced a change in top management. When problems arose in the response operation, Brown lost favor and was portrayed as being both indifferent and incompetent He was sent back to Washington DC on 9 September and resigned as Director of FEMA on 12 September.

After Michael Brown was sent back to DC in disgrace, Vice Admiral Thad Allen was appointed the PFO and arrived in the area on 8 September. Admiral Allen was also appointed an FCO with authority to issue orders to the other FCOs and perhaps the federal agencies. Nevertheless, Admiral Allen complained that the field elements of some agencies persisted in calling their headquarters in Washington DC if they did not want to do what Admiral Allen wanted them to do.[23] By that time, the response phase was over and recovery was in full swing.

In earlier times, the President named a personal representative to take overall charge of the federal response operation for a catastrophic emergency. This was done, for example, for Hurricane Andrew in 1992 when Andrew Card, then the Secretary of Transportation, was names the President's Representative. This arrangement had the advantage of having a prominent senior official with a direct line to the President on the ground to negotiate with governors and mayors with some authority, while leaving the details of the operation to the FCO.[24]

In the NRP, the PFO is appointed by and reports to the Secretary of DHS and is not the direct representative of the President. During Katrina this additional layer of management was a problem initially because Chertoff's staff did not grasp the severity of the problem and the President was left out of the loop too long at the beginning. Brown realized this and, frustrated with delays and lack of urgency on the part of the DHS hierarchy, resorted to contacting the White House directly, an end run that may have been one of the reasons he was relieved and later resigned.

The basic authorities for emergency management are the Stafford Act and the Homeland Security Act of 2002. It appears that these two laws are at odds in some important respects, including the management of emergency management operations. The Stafford Act requires an

FCO for every declared disaster. The PCO appears to be based on the Homeland Security Act and NSP-5. There is no statutory link between the PCO and a JCO, and the writers of the NRP did not clarify the ambiguous relationship between the two. This weakness did not adversely affect the Katrina response, but it has been recognized as a problem that ought to be clarified. Formation of DHS did put another layer between FEMA and the President, but the adverse affects of that cannot necessarily be fixed by legislation alone. Most importantly, the wisdom of continuing to rely on voluntary collaboration by federal agencies during a response operation needs to be reconsidered. It might be possible and would be good to establish an emergency authority that PFOs and FCOs can use to assure that things are done in accordance with their directives during response operations for Incidents of National Significance.

Inter-agency Operations Centers

Operations Centers are the conventional way to achieve inter-agency collaboration for the conduct of an operation. The idea is to assemble representatives from each department or agency involved in an operation in the same room, which then becomes and operations center. The typical layout is a large room with workstations reserved for agency representatives and wall displays to convey information. Each workstation has computers, telephones, and additional communications devices. There are usually backup rooms where staff personnel can congregate and separate rooms for senior executives to meet privately.

The NRP establishes three inter-agency groups to manage response operations for catastrophic disasters. The Interagency Incident Management Group (IIMG) is a policy level panel. The Homeland Security Operations Center and the National Response Coordination Center are operations centers inside DHS. Each of these entities is discussed below.

The Interagency Incident Management Group (IIMG). The IIMG is a "Federal headquarters-level multiagency (sic) coordinating entity that facilitates strategic Federal domestic incident management for Incidents of National Significance. The Secretary of Homeland Security activates the IIMG based on the nature, severity, magnitude, and complexity of the threat or incident."[25] The functions of the IIMG are as follows:

- Focal point for Federal strategic incident management planning and coordination
- Maintains situational awareness of threat assessments and incident related operational activities
- Provides decisionmaking (sic) support for incident related efforts
- Synthesizes information, frames issues, and makes recommendations to the Secretary of Homeland Security
- Provides strategic coordination and recommendations for application of Federal resources
- Assesses national impacts of the incidents and of actual or proposed response actions
- Anticipates evolving Federal response and operational requirements
- Maintains ongoing coordination with the PFO and JFO Coordination Group Coordinates with FBI SIOC on terrorism-related issues
- Facilitates interagency operational coordination and coordination with other public and private entities

- Develops strategies for implementing existing policies and provides incident information to DHS and the White house to facilitate policymaking.

When FEMA was an independent agency, the Catastrophic Disaster Response Group (CDRG) was the senior level interagency group for FEMA response and recovery operations.[26] The CDRG met at the FEMA Headquarters at 500 C Street SW, Washington DC. It was a forum for senior-level representatives of all of the departments and agencies that had signed on to the FRP and met on call to establish policy for dealing with impending or actual emergencies.

When FEMA moved into DHS, the CDRG was renamed the IIMG, and the emphasis was shifted from "disasters" to "incidents." The IIMG met at DHS Headquarters on Nebraska Avenue in North West Washington DC. The IIMG "coordinates with and provides incident information to the White House including, but not limited to situational awareness and operational prevention, protection, preparedness, response, and recovery activities, as well as policy course of action recommendations."[27] In the aftermath of Katrina, the IIMG was converted to the Interagency Advisory Council, perhaps reducing its ability to influence the conduct of response operations.[28]

The Homeland Security Operations Center (HSOC). According to the NRP, the HSOC is "the primary national hub for domestic incident management, operational coordination and situational awareness…[and] a standing 24/7 interagency organization fusing law enforcement, national intelligence, emergency response, and private sector reporting."[29] The difference between the IIMG and the HSOC is that the former is supposed to include senior officials that can speak for their respective departments and agencies, while the HSOC is staffed by mid-level desk officers that can receive and transmit information but do not have decision-making authority. The roles and responsibilities of the HSOC include the following:

- Establishing and maintaining real-time communications links to other government EOCs
- Maintaining communications with private sector critical infrastructure and resource entities
- Maintaining communications with Federal incident management officials
- Coordinating resources for domestic incident management and prevention of terrorist attacks
- Coordinating with other government entities for terrorism related threat analysis and incident response
- Providing domestic situational awareness, common operational picture and support to and from DHS leadership and the IIMG.
- Acting as the primary conduit for the White House Situation Room and IIMG

The HSOC is located at DHS Headquarters. It was created to provide the Secretary and his staff communications support to monitor events and manage field operations during incidents.

The National Response Coordination Center (NRCC). The NRCC is "a multiagency center that provides overall Federal response coordination of Incidents of National Significance and emergency management program implementation. DHS/EPR/FEMA maintains the NRCC

as a functional component of the HSOC in support of incident management operations." The functions of the NRCC are as follows:

- Monitor the preparedness of national-level emergency response teams and resources
- Coordinate with Regional Response Coordination Centers (RRCCs) to initiate mission assignments or reimbursable agreements to activate other Federal departments and agencies
- Activating and deploying national-level entities, such as the National Disaster Medical system (NDMS), Urban Search and Rescue Task Forces (USRTF), Mobile Emergency Response Support (MERS), and Emergency Response Teams (ERT).
- Coordinating and sustaining the Federal response to potential and actual Incidents of National Significance, including coordinating the use of Federal remote sensing/disaster assessment support
- Providing management of field facilities, supplies, and equipment.
- Coordinating operational response and resource allocation planning with the appropriate Federal departments and agencies, RCCC, and the JFO.
- Tracking and managing Federal resource allocations
- Collecting, evaluating, and disseminating information regarding the incident response and status of resources
- Drafting and distributing operational warnings and orders in coordination with other elements of the HSOC.

The NRCC is activated when deemed necessary to prepare for a potential emergency and/or manage an ongoing emergency. Its membership is not specified in the NRP. The NRP does say that "During an incident, the NRCC operates on a 24/7 basis as required…to support incident operations [and} more than 40 departments and agencies from activated ESF primary and support agencies provide representatives to augment the NRCC." NRCC composition varies according to the emergency, and FEMA provides management and support staff for functions not filled by ESF personnel. The NRCC relies on the HSOC, which has watchstanders on duty 24/7, to alert FEMA and notify departments and agencies of potential or actual activations of ESFs.[30] When operational, the NRCC works from FEMA Headquarters.[31]

The membership of these three national level groups is shown in Figure 4. With minor exceptions, the same departments and agencies are represented in each of them. The IIMG and the NRCC are inclusive. However, the core group of the HSOC appears to have been designed more to deal with detection and prevention of incidents than to manage a response operation to deal with the consequences of either terrorist attacks or natural disasters.

To support the NRCC, FEMA has an extensive network of subordinate operations centers designed to manage multiple simultaneous emergencies nationwide. These include the following:

The FEMA Operations Center (FOC) located at Mount Weather, Virginia, is a full-time 24/7operations center that "provides a centralized point of management for collecting, analyzing, and disseminating time-critical information to emergency management decision-makers."[32] The FOC is a backup for the NRCC.

Figure 4. Membership of DHS Interagency Groups

	IIMG	HSOC	NRCC
Department of Agriculture	X	X*	X
Department of Commerce	X	X	X
Department of Defense	X	X	X
Department of Education			
Department of Energy	X	X	X
Department of Health & Human Services	X	X	X
Department of Homeland Security	X	X	X
Department of Housing and Urban Development	X	X	X
Department of the Interior	X	X	X
Department of Justice	X	X	X
Department of Labor	X	X*	X
Department of State	X	X	X
Department of Transportation	X	X*	X
Department of the Treasury	X	X	X
Department of Veterans Affairs	X	X	X
Central Intelligence Agency	X	X	X
Environmental Protection Agency	X	X	X
General Services Administration	X	X	X
National Aeronautics and Space Administration	X		
National Archives and Records Administration			
Nuclear Regulatory Commission	X	X*	X
Office of Personnel Management	X	X	X
Office of Science & Technology Policy	X		
Small Business Administration	X	X	X
US Postal Service	X	X	X
American Red Cross	X	X*	X

* Attendance is "situation dependent"

- Regional Response Coordination Centers (RRCCs) exist at each of FEMA's ten regional offices. They are maintained on a standby basis and are activated when deemed necessary, and pre-designated representatives of regional offices of other Federal agencies work at them to augment the FEMA Staff.

- Mobil Emergency Response Support (MERS) teams with personnel, communications, and equipment are ready to be deployed to support five joint operations centers in areas affected by emergencies.

- The National Logistics Center (NLC) is a FEMA activity that is activated when necessary to plan for and manage the distribution of supplies for an emergency.

In addition to the operations centers discussed above, there are numerous other operations centers involved in a response operation. The NRP mentions also the FBI Strategic Information and Operations Center and the National Counterterrorism Center. Each of the subordinate elements of DHS also has an operations center. Each of the Departments and agencies has a headquarters operations center, and many of their subordinate elements also have operations centers. There is a substantial network of operations centers organized hierarchically to obtain guidance from above and report circumstances from below. Most of these are organized within a single department, but many of them, and particularly in FEMA, they are multi-functional and multi-agency in their membership.

During the response operation for Katrina, FEMA operations centers were deployed and performed as prescribed by the NRP. As a result, a network of operations centers with communications and support was in place and operational before landfall on 29 August 2005. [33]

The IIMG met three times during the response phase. Meetings took place on 26 August 2005 to discuss what to do about approach of Katrina; on 29 August to consider the effects of landfall, and again on 30 August to consider the effects of the unanticipated flooding.

The NRCC at FEMA Headquarters was on partial activation status on 26 August, having been alerted earlier to deal with Katrina as it passed over Florida. At 0700 hours on 27 August, the NRCC was fully activated to RED TEAM Level 1 staffing. All ESFs were activated. FEMA Headquarters was on full alert.

The two FEMA Regions directly involved in supporting the response operation were activated early and managed the deployment of teams to the affected states. On 26 August, the RRCC for Region VI, Atlanta, was already at Level Two with 12 ESFs activated to deal with the impact of Katrina on Florida. On 27 August, the RRCC for Region VI was activated fully and started to deploy FEMA assets to Alabama and Mississippi. That same day, 27 August, the RRCC for Region IV, Denton, Texas, was activated fully and started to deploy assets to Louisiana. On 27 August a Region VI MERS was sent to Jackson, Mississippi, and two MERS were dispatched to Baton Rouge and Camp Beauregard in Louisiana. On 28 August, a Region IV MERS was sent to Barksdale AFB, Louisiana and a MERS from Region VIII, Denver, was sent to Denton to provide backup. These preparatory moves were made to provide communications and support for the JOC being set up at Baton Rouge and in each of the three states affected by the storm. As noted earlier, FCOs for each of these states and for the overall operation were in place and were operational before 29 August 2005. Although there were a few instances of misunderstanding and lack of communications, the FEMA field organization appeared to work well.

When FEMA jointed DHS, it came with it its own operations center located on the Mezzanine Floor of the FEMA Headquarters building in Washington, DC. In the years and months prior to Katrina and even after DHS was formed, FEMA managed numerous disasters and emergencies from this facility. Most if not all of the other 21 agencies integrated into DHS also had an operations center of some sort. When DHS was formed, the HSOC was established for the Secretary of Homeland Security and his staff. This was a sensible arrangement, for the senior officials of DHS need to know what was doing on, inform the White House, and issue

orders and guidance to the subordinate elements of DHS. However, the relationships between the operations centers and the protocols for reporting were apparently not clarified very well, and it appears that the HSOC was oriented primarily to deal with detection and prevention of terrorism and did not understand nor appreciate how to manage the consequences of a catastrophic natural disaster. It remains to be seen whether the experience of Katrina will lead to a merger of these two different cultures into an integrated emergency management philosophy.

A major problem with the management of the Katrina emergency occurred at the outset when FEMA Director Brown tried to alert President Bush of the seriousness of the situation. During the initial stages of the emergency, duplication of effort and uncertainty about procedures between FEMA and the HSOC caused some problems in alerting the White House and issuing instructions. When it became apparent that Katrina was going to be a catastrophic incident, the NRCC dutifully relayed its alert messages to the President through the HSOC. It appears that the HSOC did not appreciate the urgency of the situation and allowed some messages to wait overnight before notifying Secretary Chertoff and sending them to the White House. This may have caused the President to be late in speaking about and visiting the area, for which he has been criticized. There is no evidence, however that it delayed the issuance of presidential emergency and disaster declarations needed to commit federal funds and assets to the response operation.

Effective interagency collaboration is hampered by confusing and overly complex command arrangements. It is difficult enough to persuade officials from different agencies to work together harmoniously without inflicting a complicated set of committees and councils at the top. In the case of Katrina, the organizational structure established in conformance with the Stafford Act was in place and appears to have worked well enough considering the extraordinary extent of the emergency. However, there was a disconnect between this structure and the new superstructure imposed by the NRP that placed DHS on top. The problems cited in the various after-action reports and critiques focus on difficulties in reporting to the White House and in dealing with the state and local authorities.

Search and Rescue Operations

The combination of a hurricane and massive flooding complicated performing the search and rescue function. Hurricanes are short duration incidents that do not usually require a lot of waterborne or airborne rescues. A storm hits an area and then moves on leaving structural destruction that often requires special skills and equipment to extricate victims. With the exception of flash floods in arid climates, major floods usually occur slowly and with a lot of warning, so there is time to mobilize boats and local and state resources to rescue people stranded by floodwaters. In Katrina, the flood occurred almost instantaneously and several thousand people needed to be rescued immediately. While emergency managers were dealing with the effects of the hurricane, the levee breach created an unanticipated demand for airborne and waterborne rescue for thousands of people in New Orleans that was met by improvisation and extraordinary efforts on the part of FEMA, the Coast Guard, and other agencies.

One of the criticisms of the Katrina Response Operation was a lack of effective coordination of search and rescue operations. [34] Much good work was done by the Coast Guard,

which had anticipated the need and established a base in a relatively safe location away from New Orleans but close enough to direct its search and rescue operations. [35] The Coast Guard does this kind of work routinely and knew what to do. So did some of the local agencies, but the boats of the New Orleans city government were largely unavailable because they had been abandoned or damaged by the storm and the flood. When National Guard units arrived on the scene, they applied their helicopters to the task also. However, there were glitches. The Department of Interior had rescue boats that would have been valuable immediately, but arrangements to use them were difficult and delayed their use. FEMA claims that DOI did not know how to contact the FCO and instead went to the FEMA Headquarters. DOI says it did the right thing but was ignored by FEMA. The cause of the mix-up was a failure to include DOI as a supporting agency for ESF-9.

One reason for problems with the search and rescue function is that the NRP did not provide for performing this function in a flood. The NRP contemplates using Urban Search and Rescue (US&R) Task Forces for cases of structural failure that would be caused by earthquakes, explosions, and fires. ESF-9 is Urban Search and Rescue, with FEMA as the coordinator and primary agency. US&R is a valuable resource for emergencies involving structural damage. By cultivating the fire community and offering subsidies for equipment and training, FEMA persuaded 28 fire departments to create US&R task forces and to make them available for domestic and foreign emergencies. This has been a very successful program and has saved many lives. It is useful for earthquakes and structural damage of any kind, but is not entirely appropriate for search and rescue operations for floods or hurricane surges.

For Katrina, the problem was that ESF-9 did not encompass all of the search and rescue capabilities of the Federal agencies or other agencies. The main thrust of ESF-9 in the NRP is on the US&R Task Forces and how other agencies can provide support for them in an emergency. DOD, which has significant rescue capabilities, is seen as a source of fixed-wing and/or rotary wing transportation, ground transportation, mobile feeding units, and portable shelter for US&R Joint Management Teams (JMTs). Other agencies are expected to provide specialized teams to augment the US&R JMTs. The Coast Guard, which performs search and rescue operations on a daily basis, is mentioned as being able to assist in "water rescue in areas of inundation" with aircraft and boat teams. The Department of the Interior, which has "valuable expertise in operating watercraft and conducting civil search and rescue missions…[was} not formally considered a part of ESF-9, [and] DOI's offer to deploy shallow-water rescue boats during the response apparently never reached the operational level."[36]

On the ground, FEMA EST-9 leaders formed an informal search and rescue organization with a leadership team that coordinated the efforts of many of the agencies involved in the response operation, including Jefferson Parish Public Safety Agencies, National Guard, Department of Defense, Louisiana Department of Wildlife and Fisheries, Louisiana State Police, New Orleans Fire and Police Departments, Federal law enforcement agencies, the Department of the Interior, the Los Angeles Police Department, the Vancouver, Canada, USAR TF-1, and assets from other jurisdictions sent in accordance with the Emergency Management Assistance Compact (EMAC).

In the field, the search and rescue operation was successful. Despite a few instances of duplication of effort, a great many people were rescued and taken to safety, and there is no evidence of deaths occurring because people could not be rescued.[37] This feat was accomplished by the initiative and hard work on the part of the numerous agencies participating in the search and rescue part of the response operation. The Coast Guard did itself proud and benefited from anticipating the need and preparing for it well in advance of landfall. The National Guard and local police and fire departments all used their capabilities to good effect. Military helicopters were particularly valuable. William Lokey, the FCO for Louisiana, contacted directly the Los Angeles Police Department, which sent several rescue of boats.[38] It is worth noting that despite not being trained or equipped for waterborne missions, the FEMA US&R Task Forces nevertheless contributed significantly to the overall effort.

In this instance, the NRP was too narrowly focused on one specific kind of search and rescue and did not take a broad all-hazards approach. It is clear that ESF-9 was written to assure that the US&R Task Forces would be able to perform their important but limited work and that a broader application of search and rescue was not considered. To be effective, the NRP and the ESFs need to address the full range of emergencies that can occur and make provision for all of the sources and possibilities.

Management of Mass Care

There was a problem in the management of ESF-6 during the response operation.[39] In the Federal Response Plan, ESF-6 covered only mass care, and the American Red Cross was the primary agency. The NRP, however, added to ESF-6 two additional functions: housing and human services, and FEMA was designated as the coordinating agency, with the Red Cross as primary for mass care and FEMA as primary agency for housing and human services. This meant that FEMA personnel for ESF-6 were from the Recovery Division rather than the Response Division.[40] This move put Red Cross people with experience in provision of mass care for immediate response with FEMA people experienced in long-term recovery. As it turned out, this did not work well because the objectives of the two cultures are at odds.

The dispute had to do with procedures for approval of requests for mass care. "Each organization had a different understanding of certain ESF-6 operating procedures…This disagreement was primarily about the role of the ESF-6 coordinator, a FEMA official tasked with providing strategic vision and leading efforts to coordinate mass care, housing, and human services."[41] FEMA wanted the Red Cross to direct all requests for mass care through the ESF-6 coordinator. The Red Cross wanted to send these requests directly to the FEMA Operations Section Chief. "Tensions resulting from this disagreement negatively affected the working relationship between FEMA and the Red Cross. Because of the lack of clarity about roles and responsibilities, the agencies spent time during the response effort trying to establish operations and procedures, rather than focusing solely on coordinating services."[42] The argument descended to the level of who would be allowed to speak at meetings, with the ESF-6 Coordinator insisting that she would speak and the Red Cross would not. The Red Cross objected to this and said that the ESF-6 coordinator was not making best use of their expertise in mass care. The two sides never did reconcile, and the Red Cross became frustrated by what they regarded as mismanagement and went outside of the official channels to distribute supplies.

On the surface, this issue is concerned merely with turf and prestige. However, the dispute also was about the balance between centralized control and decentralized operations, and also the difference between response and recovery.

The tempo and rhythm of response differs from that of recovery. Response is a short-term operation that is intended to save lives and does not do more than provide temporary basic life sustaining goods and services. Recovery seeks to make well the damage done and restore the status quo ante or better. The purpose of mass care, as the Red Cross understood it, was to provide only minimal support. Sheltering is part of Mass Care and seeks to keep evacuees who have nowhere else to go out of the elements. Sheltering packs people into large common spaces with little concern for privacy or space. Housing, on the other hand, is part of the Recovery Phase and has a long-term view. Housing places people into their own places with privacy and space for living. Sheltering is provided in schools, auditoriums, sports areas, and convention centers. Housing is provided in trailer homes, rental money, and funds to rebuild houses destroyed by the emergency. Response is rapid and chaotic; recovery is deliberate and orderly. In this emergency, placing a recovery person in charge of a vital element of response was bound to cause trouble.

The proper balance between centralized control and decentralized operations is also affected by the response versus recovery issue. Response needs to be decentralized with push logistics, even if that means some loss of strict accountability for supplies. Recovery has to be more cautious about keeping track of goods and money because critics are predisposed to find waste no matter what is done. The Katrina experience suggests that it may not be a good idea to combine response actions functions with recovery actions.

The Superdome

Although over 1,000,000 people self-evacuated safely and another 230,000 were evacuated from New Orleans and other areas, the drama at the Superdome in New Orleans and to a lesser extent the Convention Center became a focal point for media attention and criticism The Superdome was designated in New Orleans planning as an emergency shelter, but the City of New Orleans made no preparations for it to be a shelter. FEMA was aware of the Superdome, paid attention to it from the outset, and took action to provide resources to sustain the people there.

A detailed timeline of events at and about the Superdome is shown in Figure 5. There are gaps in this timeline and probably some errors. FEMA responded quickly to requests for assistance and provided substantial resources. Some of the FEMA actions were unprecedented and unanticipated. For example, the buses to evacuate the Superdome were the responsibility of New Orleans to provide, but local buses were allowed to flood and ESF-1 had to react quickly to provide transportation for a use that was outside of its normal purview for response operations. Security at the Superdome was also a local responsibility but was not provided by the City of New Orleans, and even National Guard troops on site at the start were unable to control the situation. While 90% of the people behaved well, the remaining 10% did not. As a result, basic sanitation was ignored, drug use and bad behavior predominated, and conditions were made

worse. Six people died at the Superdome, one of them a suicide. The lack of security hampered response operations.

Figure 5. Time Line for the Superdome[43]

Sunday, 28 August 2005

0800: Superdome opens as a shelter
1200: FEMA receives request for commodities
1500: 3,000 evacuees protected by 150 National Guard troops
1700: 6 truckloads of water and 3 of MREs dispatched
1900: Fourth shipment of commodities ??
2100: 5 truckloads of water and 2 of MREs arrive
2100: DMAT OK-1 en route but turned back because of wind velocity

Monday, 29 August 2007

1000: 10,000 evacuees on site
1000: Superdome roof damaged
1200: FEMA allocated 5 truckloads of water, 1 of MREs, and 3 of cots for Superdome
1700: 4 truckloads of water and 2 of MREs dispatched from Camp Beauregard
2100: DMAT OK-1 arrives

Tuesday, 30 August 2007

0300: DMAT NM-1 and DMAT WA-1 arrive
0600: DMAT OK-1 redeployed to Arena (?)
1200: 25,000 evacuees at the site
1240: Shipment of commodities from Jefferson Parish arrive
1240: FEMA Search and Rescue Element and communications arrive
1700: Site surveyed by MERS for communications
2215: Governor Blanco orders evacuation of site

Wednesday, 31 August a2007

0100: Request to NRCC for buses to conduct evacuation
0200: ESF 1 orders 455 buses
0600: First 3 buses arrive
0730: Evacuation of evacuees commences
0900: Pumps sent in to keep emergency generators from flooding out
1000: More buses begin arriving
1400: FEMA and NG officials plan evacuation[44]
2100: First buses arrive in Houston
2400: 200 buses participating in evacuation; 400 more being sourced by contractor

Thursday, 1 September 2007

0530: 15 truckloads of water and 9 of MREs at the site
0600: 2,000 evacuees arrive in Houston
0600: Critical patients taken to New Orleans International Airport to be medevaced for treatment
1700: 3,000 more evacuees arrive in Houston
1700: Chief, National Guard Bureau and The Adjutant General of Louisiana confer on site

Friday, 2 September 2007

0400: 7 truckloads of water sent to the site
0730: A cumulative total of 20,000 persons evacuated from the site
0800: NDMS teams return to the site protected by Federal law enforcement officers
1600: 3 truckloads of water and 5 of MREs at the site

Saturday, 3 September 2007

Evacuation of site continues

Sunday, 4 September 2007

Fewer than 1,000 evacuees remain at the site

Monday, 5 September 2007

1000: 5 truckloads of water and 4 of MREs at the site
1600: Cumulative total of 68 truckloads of water, food, and supplies have arrived at the site

In this instance, the NRP worked as it was supposed to work despite problems in communications and conditions that made it difficult to deliver commodities. Once the NRCC was made aware of the situation, FEMA marshaled enough transportation assets to evacuate all of the people at the Superdome in seven days, in addition to supporting the evacuation of over 200,000 people from other parts of the city of New Orleans, other areas of Louisiana, as well as Alabama and Mississippi.

The collapse of the New Orleans emergency response agencies and the withdrawal of the Mayor from a leadership role during this period left the Superdome without anyone with both authority and means to see that it operated properly. There was no dedicated "shelter manager," and there was no official responsible to submit requests for assistance or report conditions. Elements that arrived often left soon after due to the chaotic security situation at the Superdome. A permanent law enforcement or military presence that could have controlled the violence and enabled the delivery of relief supplies never happened. Critics have taken FEMA and ESF-1 to task for failing to provide buses more quickly, even though that was a local responsibility. They want the NRP to say that the Federal Government must anticipate failure of states and locals to perform their respective functions.

Lessons Learned

It is difficult and perhaps somewhat presumptuous to assess the utility of the NRP based on a sample of five vignettes that are themselves incomplete at this stage. The official judgment on the NRP has already been made, and it was found guilty. The Federal Lessons Learned document made 125 recommendations, many of them changes to the NRP. A set of changes to the NRP was duly compiled and issued. But many of the problems and some of the changes dwell with image, turf, and circumstances that are likely to be unique to the New Orleans part of the response operation. Presumptuous or not, it is useful at this time to comment on the NRP and make some preliminary observations.

The NRP is More than a Plan

Although it is called the National Response Plan, there is some difference of opinion on whether the NRP is really a plan. It is certainly not a "strategy" with broad general platitudes like so many other high-level federal documents issued in the wake of the 911 Attacks. It is not a "system" like the NIMS. But it is also not a plan as that kind of document is normally regarded.

The military planning process, which presumably results in a "plan" has five elements: mission, situation, tasks for subordinate elements, logistics & administration, and command & signal.[39] Based on that criterion, the NRP is indeed not a plan, nor could it be because the mission and situation are not provided and the specific actions to be taken and the circumstances under which are to be taken cannot be identified.

Based on the way in which it was developed, the NRP could be called a treaty among sovereign departments and agencies. This would be both good news and bad news. The bad news is that documents achieved by negotiation usually sink to the level of the lowest common

denominator. The good news is that the document takes into account the differing viewpoints of the federal agencies and provides a way to achieve coordinated action. The NRP was approved and signed by all of the cabinet secretaries and agency heads, indicating agreement to its premises and policies.

The NRP assigns responsibilities among federal departments and agencies and provides a general concept of how they are to operate together in the event of an emergency requiring federal action. For a potential or actual emergency, the NRP provides a framework for developing an initial operational plan and adjusting that plan as information matures and the situation changes. In that sense, the NRP is a doctrinal statement that governs how actors are expected to behave under a wide variety of circumstances. As doctrine, the NRP allows participants to do the "right thing" even if they are not issued specific orders to do something. Doctrine is a valuable resource during emergencies when there is no time to learn what to do. That being the case, it is essential that all parties to the NRP learn what it says and do what it wants done when it is applied to an emergency. This learning process is enhanced by rehearsals that apply the doctrine for a range of assumed emergencies. The NRP is not the plan, but it is the doctrinal basis for planning.

NRP Performed Well in the Katrina Response

Overall, and despite some flaws, the NRP worked well for Katrina. Efforts were much greater than for any previous emergency, including the 911 attacks, and results exceeded by far those for any other emergency. While an objective analysis of the overall results has not yet been written, the initial data suggest that the federal portion of the response was very good. Using the NRP as a guide, FEMA:

- Responded promptly when Katrina was forming and took steps to deal with it.
- Managed the response to the impact of Katrina on Florida
- Deployed teams and established a field command structure with FCOs in each of the affected states a day before Katrina made landfall on the Gulf Coast
- Did a good job in Alabama and Mississippi
- Did a good job in Louisiana outside of New Orleans
- Coordinated the work of the ESFs with relatively few problems
- Provided large amounts of commodities and services
- Compensated for the inability of the City of New Orleans to do its assigned work

Yes, there were problems with the NRP. Some of them resulted from the way in which the NRP was written following the initial attempt by DHS to have a broader field of application for the document. None of these problems was major. None of these problems was the cause of increased deaths or destruction—most of which were caused by the storms and flood and some of which were caused by illegal acts of a few people in New Orleans. The NRP did serve as a useful doctrinal basis for planning and implementing the response operation.

The overall interim grade for the NRP in the response operation is A-.

FEMA did not Fail in its Response to Katrina

Almost all media, academic, and government reports that address Katrina reinforce the public view that FEMA failed "dismally" in its response to Katrina. This perception does not make the distinction between response and recovery that is made in this paper, but even allowing for the problems implicit in recovery (which is still going on), FEMA has been characterized as a failed agency. Why is this? While there is no single answer to be found, some of the contributing factors are as follows.

Media Performance. The media focused on New Orleans and the Superdome, effectively concentrating on the worst episode of the entire response operation, while failing to cover the good news from other parts of the affected area. This may be merely a natural tendency to report the bad things that are exceptions and ignore the good things that are the rule. Many reporters may have been shaken by being there and experiencing first-hand the death and destruction caused by the hurricanes and flood. It is now clear that many media reports exaggerated the number of dead, the violence, and the confusion. These initial reports are hard to retract once they are lodged in people's minds.

Partisan Party Politics. A big factor in the blame game during and after the response is the bitter partisan warfare waged between the Republican Administration and the Democratic Party on a wide variety of topics—notably Operation Iraqi Freedom. This inability to agree on most things flavors the assessment of the response. The natural tendency of Congress to find fault with the Executive Branch was exacerbated by the media reports, and both minority and majority members and staffs were zealous in seeking and finding what went wrong. It is instructive that up to this point, with the exception of an appendix in the Federal Lessons Learned document, there has been no compilation of the results of the performance. The normal tendency of the party out of power to pile on was reinforced by personal animosity toward President Bush—a sentiment that was not eased by his apparent disregard of the emergency during the first few days. This problem has been exacerbated by the apparent failure of the City of New Orleans and the State of Louisiana to do their part in the response operation.

The Race Card. Some observers chose to characterize the response operation as racist by alleging that white victims were given priority for assistance and African Americans were deliberately left to die by the authorities. While the data do not support this hypothesis, there are many African-Americans who subscribe to it.

Anti-Government Attitudes. Although Americans like government checks, many of them do not like the Government. The government is portrayed in the media, the moves, and television as evil at worst and bumbling at best. This attitude is found among people of all kinds and beliefs. When Government has to take charge, as in the response to Katrina, the good it does is taken for granted but the errors are magnified and a cause for recrimination. When government assumes the role of benefactor, it does not get thanked for its largess but is instead criticized by those who get less than they want. There is no answer to this perennial problem.

Perfectionism. It appears that the American people expect perfection in how their government works and will not tolerate even the slightest error due to human frailty or circumstances beyond the control of humans. This is a curious attitude, for the public is forgiving of blatant cases of human error by celebrities, criminals, and even by ordinary people. In the case of Hurricanes Katrina and Rita and the New Orleans Flood, intolerance for imperfection has reached a level of intensity that defies reality and precludes appreciation for what was a very successful response.

The Inter Agency Process Worked Well for the Katrina Response

Despite problems and flaws, and with some notable exceptions, the departments and agencies of the Federal Government worked well as a team to deal with the consequences of Katrina. Without the work, discussion, rehearsals, and arguments that went into the writing and approval of the NRP, the situation would have been much worse than it was.

The notable exceptions deal with such issues as DOD participation in emergency response operations, relationships of the states and localities to the federal government during response operations, and how best to integrate private sector and non-governmental organizations into response operations. These are not trivial. They did cause problems during Katrina. They need to be resolved.

In a fundamental sense, the successful response to Katrina was made possible by the National Response Plan, which as doctrine provided a common understanding to which all emergency managers at all levels subscribed and established a common framework for organizing and conducting the response operation. In that sense, the NRP can be regarded as the product of a successful inter-agency process.

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[1] In the interest of brevity, henceforth the paper will use the term "agencies" to include both the 15 cabinet level departments and the independent agencies that together comprise the Federal Executive Branch.
[2] The four phases of the classical emergency management cycle are response, recovery, mitigation, and preparation. Therese phases are overlapping and circulate. Since the recognition of the terrorist threat, another phase has been added for prevention.
[3] Department of Homeland Security, *National Response Plan*, December 2004, henceforth NRP.
[4] EO 12127, Federal Emergency Management Agency, March 31, 1979, and EO 12148, Federal Emergency Management, July 20, 1919.
[5] The lack of its original national security emergency preparedness functions meant that FEMA was unable and even unwilling to deal well with the terrorist threat before and even after the 911 attacks. That left a lacuna in the Federal Executive Branch that was filled by the formation of the Department of Homeland Security.
[6] There are a variety of views on the naming of the phases of the emergency management cycle. This is one more or less agreed upon version.
[7] John R Brinkerhoff, Introduction to Modern Emergency Management, August 2006.
[8] For Andrew, as with Katrina, there was considerable lack of cooperation between a Democratic governor and federal officials in a Republican Administration.
[9] I personally credit Grant Peterson, an Associate director of FEMA, with this achievement, but there are many others who were involved and share and/or claim the credit.
[10] The White House, *Homeland Security Presidential Directive, Management of Domestic Incidents (HSPD-5)*, February 28, 2003.
[11] Department of Homeland Security, *National Response Plan, Initial Plan*, Draft, May 2003.
[12] Department of Homeland Security, *National Incident Command System*, March 1, 2004, henceforth NIMS.
[13] HSPD-5

[14] GAO-04-1075T, Observations on the National Strategies Related to Terrorism, September 22, 2004,and numerous references on the Internet.
[15] The principal sources for the timeline are as follows: The Brookings Institution, *Hurricane Katrina Timeline*, The Brookings Institution, undated; Talking Points Memorandum, *TPM Hurricane Katrina Timeline*, 30 September 2005; Canadian Broadcasting Company, *Hurricane Katrina Timeline*, 4 September 2005; and FEMA, *Hurricanes Katrina, Rita, and Ophelia Timeline*, as of 28 March 2006.
[16] The date upon which response changed to recovery is arbitrary and could be moved one or two days later, but it is apparent that by the night of 6 September those that could be saved were saved and the emphasis shifted to recovery.
[17] Sources for results: FEMA Briefing by Michael W. Lowder, Deputy Director, Response Division, Disaster Response Operation and Cross Border Events for Trilateral Conference on Preparing for and Responding to Disaster in North America, November 7, 2006; American Red Cross, A Year of Healing: The American Red Cross Response to Hurricanes Katrina, Rita, and Wilma, undated, probably 2006.
[18] All of these data must be considered as rough estimates until better data are available.
[19] NRP, p. 33
[20] NRP, p. 34
[21] Needs to be validated
[22] FEMA, *National Situation Report*: as of 5:30am Wednesday, August 31,2005. The reason for having two FCOs for Louisiana needs to be found.
[23] Find the authority for this statement in Harrald?
[24] This kind of arrangement can lead to friction between the PFO and FCO, and this reportedly was the case for Hurricane Andrew.
[25] NRP, pp. 22,23
[26] NRP, p. 22
[27] NRP p. 23
[28] Department of Homeland Security, Notice of Change to the National Response Plan, Version 5.0, May 25, 2006
[29] NRP, p. 24.
[30] NRP p. 26
[31] This assertion needs to be checked out.
[32] Lowder Briefing, Slide 7.
[33] All references to the deployment of operations centers are from the FEMA Timeline
[34] The White House, *The Federal Response to Hurricane Katrina: Lessons Learn*ed, February 2006, page 57, henceforth Federal Lessons Learned.
[35] Douglas Brinkley, *The Great Deluge*, William Morrow, New York, 2006, pp. 327-327, passim
[36] Federal Lessons Learned, p. 38. A FEMA official commented that DOI could have contacted the JOC and made the offer, which would have been accepted.
[37] Apparently some people refused to be rescued and wanted to shelter in place.
[38] This was mentioned in an email to Lokey, but it needs to be checked out with him.
[39] Government Accountability Office, Hurricanes Katrina and Rita: Coordination between FEMA and the Red Cross Should Be Improved for the 2006 Hurricane System, GAO-06-712, June 2006.
[40] NRP, ESF #6-4 to 6
[41] GAO, Hurricanes Katrina and Rita: Coordination between FEMA and the Red Cross Should be Improved for the 2006 Hurricane Season, GAO-06-712, June 2006m pp. 12-13
[42] Ibid.
[43] The timeline is based on the FEMA Timeline with some items from the Brookings Institution Hurricane Katrina Timeline

[39] These are actually the major sections of the Five-Paragraph Field Order, which is the expression of a plan at the tactical level.