

**Remarks at Michoud Assembly Facility  
New Orleans, Louisiana  
NASA Exceptional Bravery Medal Presentation  
Michael D. Griffin  
Administrator  
National Aeronautics and Space Administration**

**5 January 2006**

We are gathered here today at the Michoud Assembly Facility to honor members of the NASA family who exhibited tremendous courage and devotion to duty when – at risk to their personal safety – they protected this valuable national facility, and the property on it, from Hurricane Katrina. In recognition of their bravery, we honor these people today with NASA’s Exceptional Bravery Medal, which is reserved for “exemplary and courageous handling of an emergency in NASA activities by those who, independent of personal danger, acted to prevent the loss of human life or government property.” In so doing, their courage reminds us that not all of NASA’s heroes fly in space.

Until today 36 people have received this prestigious honor. This afternoon, for good reason, we will more than double that number.

Hurricane Katrina was the worst natural disaster that our nation has yet faced. There are many stories that will be told over the years about Katrina, and how it changed our country. Today, I want to help tell one story, the story of the people who did nothing less than save America’s space program from, quite literally, being grounded for years.

As we all know, Katrina passed over south Florida and then gathered tremendous destructive energy while barreling across the Gulf of Mexico. We were all concerned about the potential impact on our Gulf Coast facilities and upon all the folks who were in harm’s way, about how bad it could be for these people, and whether we would be able to recover from the devastation that was expected to occur. Michoud is in the most vulnerable of positions, and if it were to be lost, NASA’s ability to conduct future space shuttle missions and to ferry vital supplies and equipment to the International Space Station would be lost as well. The ISS was designed with the assumption that the capabilities of the Space Shuttle would always be available, and it is not difficult to imagine a scenario whereby, without the ability to send up various large orbital replacement units to the station, we might have to abandon the facility.

And in the worst case, our ability to develop the external tanks for our next generation of spacecraft and heavy lift launch vehicles would also be at risk.

As the storm approached New Orleans, most of the Michoud employees scrambled to take their families to safer ground. Meanwhile, a group of about 40 well-trained volunteers formed a ride-out team and remained at their posts, determined to do their utmost to protect Michoud and the valuable national assets it houses.

Fitting for a group of this caliber, they have a name. It draws on the great tradition of excellence that Kelly Johnson's Lockheed *Skunkworks* developed in designing some of our nation's most valuable high performance aircraft. Carrying on in the *Skunkworks* spirit, this team came to be known as the *Marshworks*. This seems very appropriate, considering all the snakes and other swamp creatures that soon took shelter on the Michoud grounds.

Once Katrina started battering the New Orleans area, the *Marshworks* volunteers did all they could throughout the evening of Sunday, August 28<sup>th</sup> and the subsequent day to protect Michoud's spaceflight hardware, electrical power systems, roofing, radio and telephone communications, and security. When electrical power was lost late Sunday evening, the ride-out crew worked to keep the backup generators on line, thus ensuring that Michoud's water pumps would continue to run.

It was at these water pumping stations that the most critical events of the storm played out in the pre-dawn hours of the 29th. The pumps were vital for keeping waters from the Mississippi River Gulf Outlet from flooding the facility. One has only to look at this area from the air, where Michoud appears as an island of green in a sea of brown mud, to understand what this place would look like if that flooding had occurred. There was no way to survive it; anyone who did not escape would be lost. So, if the generators and pumps failed, more than just the facility was at risk. Those were the stakes for the folks who stayed behind here at Michoud.

Joe Barrett and Dan Doell, Michoud's pump house operators, fought through the night to make sure this didn't happen. But as the hurricane grew in intensity and sustained winds began to exceed 55 miles per hour, the team on the ground had to pull Joe and Dan out. Two Lockheed Martin employees, Guy Jackson and John Pucheu, headed out in a pickup truck to retrieve their colleagues. The storm was now so fierce Guy and John couldn't see ten feet in front of them; they had to use sticks to find the edge of the road leading into the pump house.

Once Guy and John arrived at the pump house, Joe and Dan reacted as you might expect. Knowing their task was so vital, they didn't want to leave their post. Fortunately, Guy and John convinced Joe and Dan that the time had come to leave before the rising winds, eventually measured at 178 mph just north of the site, took off part of the pump house roof. Just prior to leaving, Joe and Dan huddled to decide on the settings at which they would leave the pumps operating. This was a critical decision because if the pumps were operating at higher than the incoming water level would dictate, they would burn up. If the pumps were set too low, the entire facility would be flooded, with the consequences I've already noted. For having the dedication to stay at their posts as long as possible, and the insight to keep those pumps operating at the absolutely right level, Joe Barrett and Dan Doell are national heroes.

In thinking about their exploits, I am reminded of Ernest Hemingway's statement that "courage is grace under pressure."

There are a lot of folks at Michoud who have displayed such courage. The aforementioned *Marshworks* team, of course, is among them. So are the many employees who, having brought their families to safety, then came back to Michoud, using every means possible, to help get this facility on-line to reopen as soon as we could. We are also indebted to the members of the U.S. Marines and Colorado Army National Guard who set up camp here and assisted in vital post-hurricane roof repairs. Because of the support of these people, NASA marked one of the great days in our history when Michoud returned to business on October 31<sup>st</sup>.

Because we are back in business, the employees of Michoud will help fuel the recovery of the Gulf Coast region by continuing the important work of *your* space program. Because of your dedication and devotion to space exploration, we will keep the NASA flag firmly and proudly planted at this spot.

The country is indebted to your bravery, hard work and dedication in the face of severe distress. We are counting on you to continue providing the shuttle external tanks that will enable us to complete the space station and prepare for the next great era of space exploration. And we will rely on you to be at the forefront of this epic era, producing the tanks that will enable our Crew Exploration Vehicles and Heavy Lift Launch Vehicles to send our astronauts to the Moon, Mars and beyond.

Sometime in the near future, a spaceship will be flying toward a lunar research base. That spaceship will contain equipment made with the greatest expertise and care in the Crescent City here at Michoud. And when that spaceship is en route to the Moon, we should all look back in time and say a word of thanks to the *Marshworks* volunteers and the other heroes of Michoud.