US Army Corps of Engineers
Mississippi Valley Division

Corps Hurricane Response

Task Force Hope Status Report Newsletter *September 17, 2009*

State & Corps sign PPA for Storm Proofing

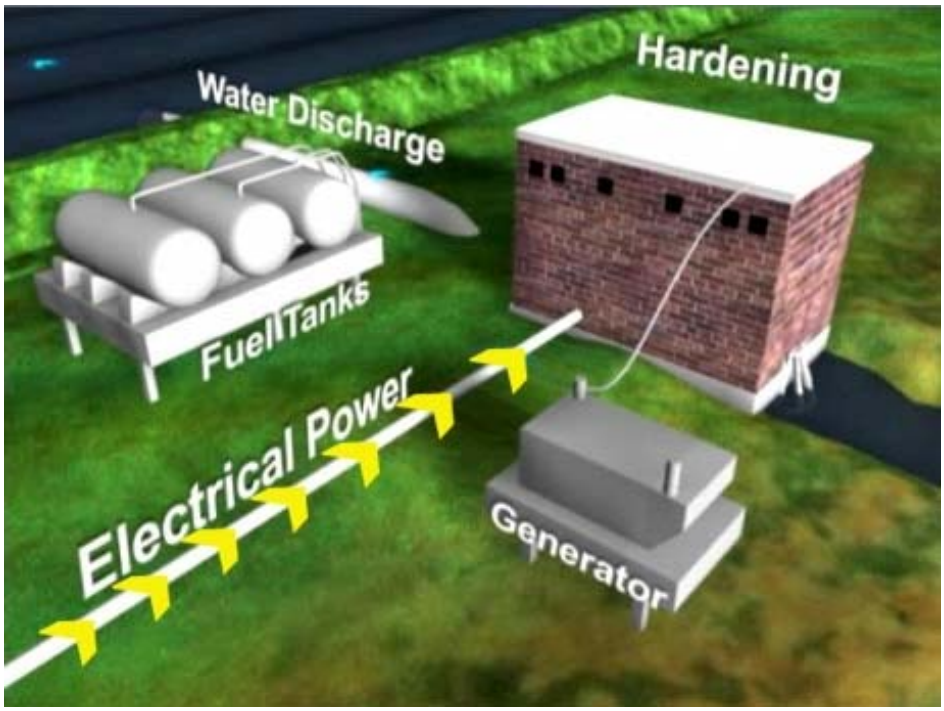
Agreement includes $289 million in improvements at 100% Federal expense

by Susan Spaht

Last month, the Coastal Protection and Restoration Authority (CPRA) of Louisiana and the U.S. Army Corps of Engineers signed a Project Partnership Agreement (PPA) for storm proofing of up to 43 existing interior drainage pump stations in Orleans and Jefferson parishes.

This agreement paves the way for approximately $289 million of improvements to pump stations by the Corps at **full federal expense.**

The State of Louisiana is responsible for obtaining land, easements and rights-of-way, if necessary, to complete the storm proofing work. After storm proofing improvements are complete, the State is responsible for operation and maintenance of the pump stations.



This is a frame from the storm proofing animation that is available on the Corps' Web site at: http://www.mvn.usace.army.mil/pao/videos/pao_videos.asp#

Why Storm Proofing?

Scattered throughout the metropolitan New Orleans area are more than 70 pump stations that are critical to prevent flooding from rainfall within the protection system. The largest of these is capable of pumping several thousand cubic feet of water per second, but most pump much less.

Built at various times over the past century, each station is unique. Many are vulnerable if flood waters rise faster than the station's capacity to pump. During and immediately after Hurricane Katrina, the majority of the area's pump stations were forced to shut down for one reason or another. Some had critical equipment inundated by the flood waters. Others lost their external power sup-

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plies; and some did not adequately provide for the safety of their operators.

Improvements increase reliability

The proposed work will add site specific enhancements to these pumping stations and increase their reliability during future storms by making improvements that include installing backup power and fuel sources, elevating critical equipment, strengthening and waterproofing structures, adding redundant water cooling systems, and an overall hardening of each structure.

Storm proofing will help ensure the operability of pump stations during hurricane, storm and high water events. The majority of storm proofing construction is scheduled for completion in 2011.

Several storm proofing projects have already been completed in Jefferson and Orleans parishes, including construction of five Safe Rooms at pump stations, construction of remote pump operation systems at seven pump stations, and installation of two pump generators.

"This is an excellent example of federal, state and local entities partnering for success to meet our mutual goal," said Col. Al Lee, New Orleans District Commander. "Public safety is the Corps' number one priority; and this is yet another step toward reducing the hurricane and storm flood risk for the people of the greater New Orleans area."

The PPA was signed by CPRA Chairman Garret Graves and Col. Al Lee.

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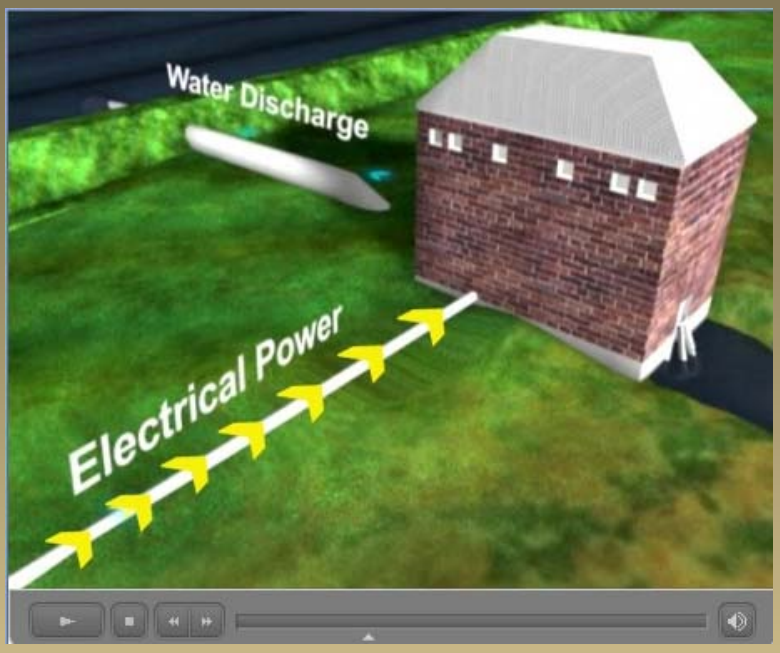
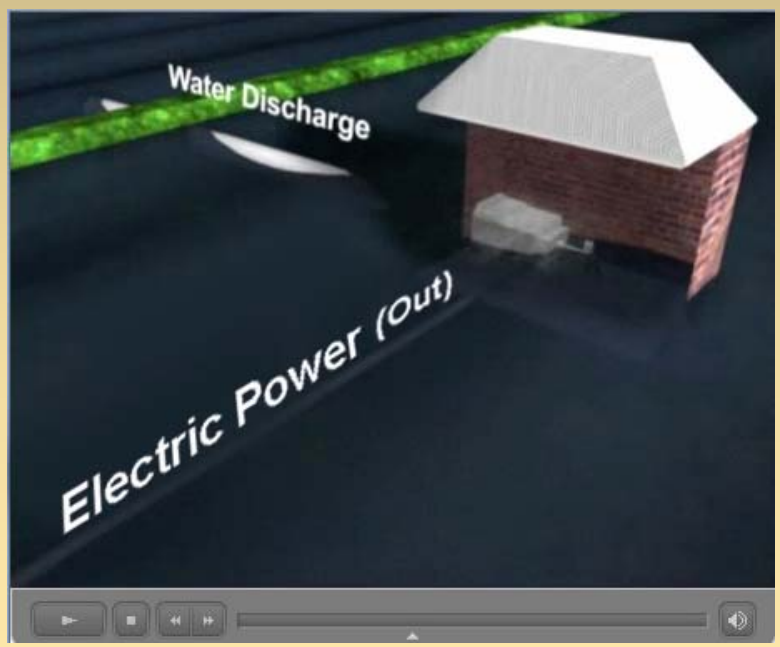
Images from the Corps' Web site animation

Storm Proofing Pump Stations

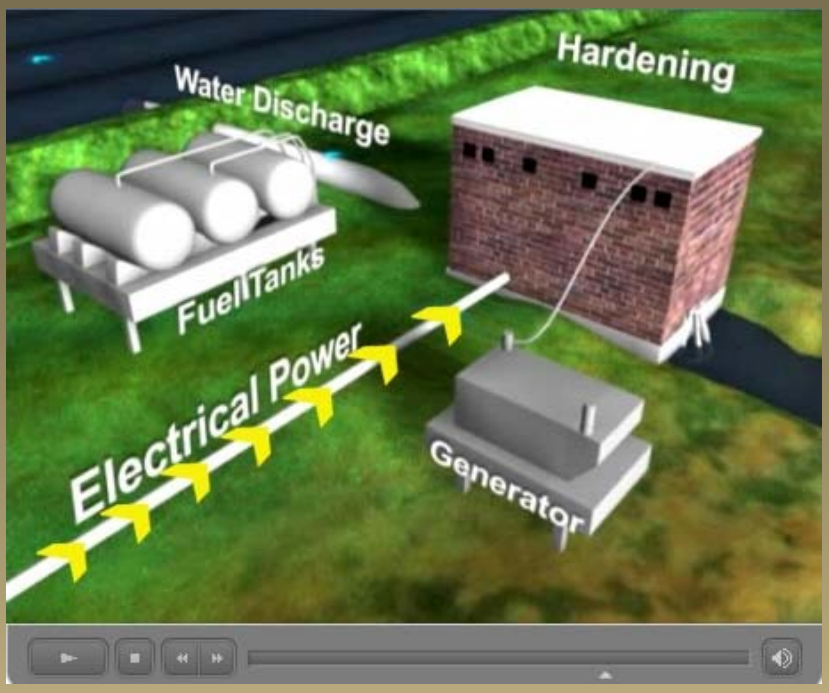
http://www.mvn.usace.army.mil/pao/videos/pao_videos.asp#



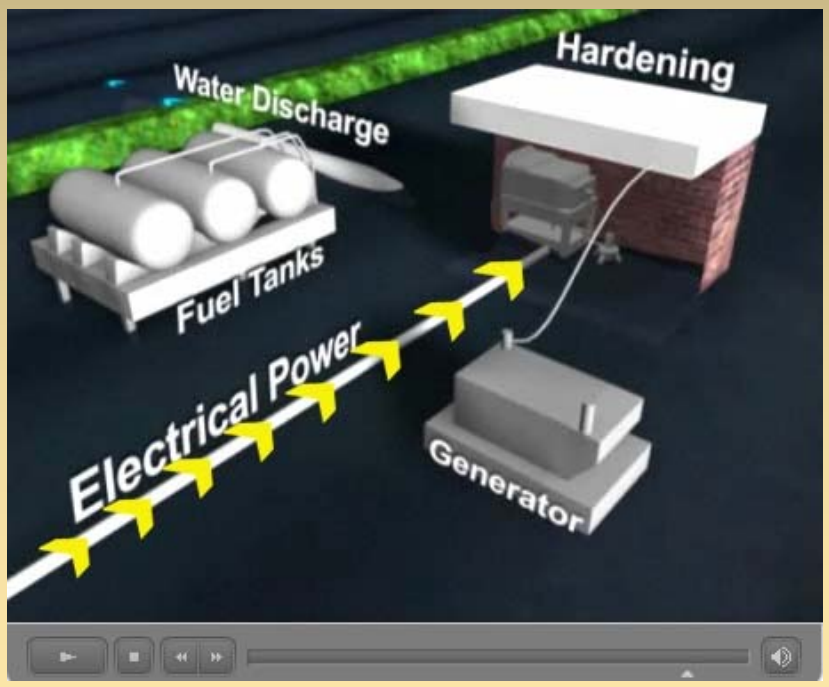
BEFORE Storm Proofing



BEFORE Storm Proofing, pump stations were vulnerable to flooding and could lose power.



AFTER Storm Proofing



AFTER Storm Proofing, pump stations are hardened, raised, and equipped with backup generators to maintain power and reliability.

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The *Status Report Newsletter* supports the information program for Task Force Hope and its stakeholders. It also serves as the primary tool for accurately transmitting the Corps' hurricane recovery work to stakeholders.

This is an online publication that is open to public distribution.

This issue and past issues can be found at:
http://www.mvn.usace.army.mil/hps

Comments and questions may be sent to the Status Report Newsletter editor at:
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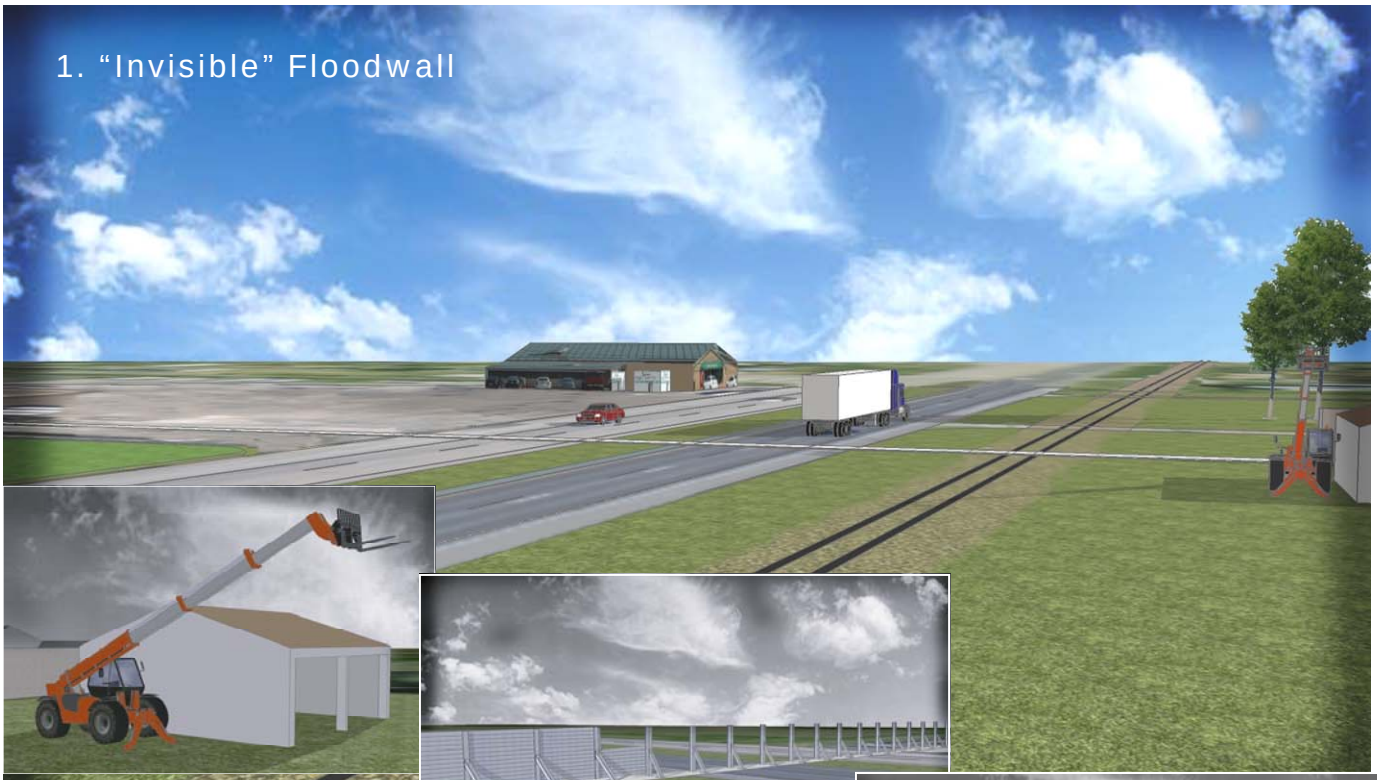

Floodwall sections are stored on site. Days before an event, construction of the wall begins.

Just prior to the event, columns and kicker supports are placed across the south-bound lane of Hwy. 23 leaving the northbound lane open for evacuation.

Finally, aluminum floodwall sections complete the closure of the system across Hwy. 23.

Options for Eastern Tie-In

The Corps of Engineers is suggesting four options for the Eastern Tie-In and is planning to present the options during a public workshop on September 19 in Plaquemines Parish. The Eastern Tie-In is the section of the Hurricane and Storm Damage Risk Reduction System (HSDRRS) that “ties-in” the current features of the West Bank & Vicinity projects to the Mississippi River levee in Plaquemines Parish at Highway 23.

The four options are:
1. “Invisible Floodwall” – an assembled stop-log system; **2.** Ramp with Stop-Log Closure; **3.** Roller Gate; and **4.** Swing Gates.

Many factors were evaluated by the Corps in arriving at these four options. The factors included criteria such as engineering effectiveness, reliability, economic efficiency, and environmental impact - both natural and human. Another important consideration was the fact that Highway 23 is an emergency evacuation route. Closing this route requires coordination with the residents and the operators of the system to accommodate an effective and safe evacuation.

The Eastern Tie-In is part of Individual Environmental Report (IER) 13 which includes two West Bank & Vicinity projects: the Hero Canal Levee and the Eastern Tie-In. The environmental document outlines a proposal to reduce risk for the Belle Chasse sub-basin which includes Belle Chasse, English Turn, New Aurora, the Belle Chasse Naval Air Station and Oakville. IER 13 was originally released for public review on April 3, 2009. The comment pe-

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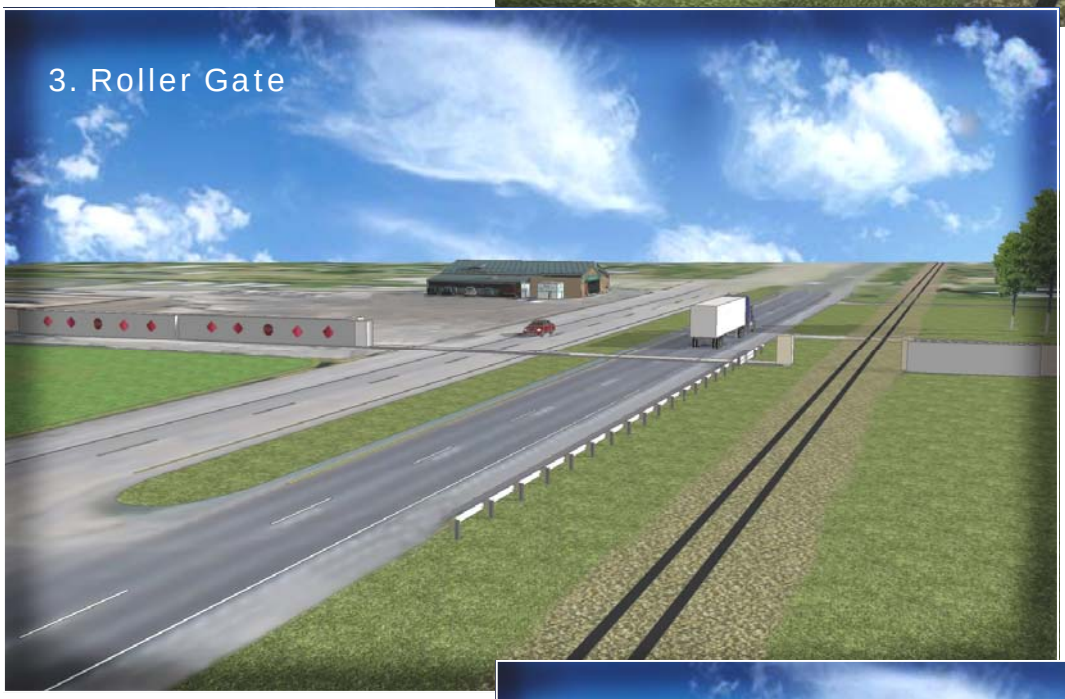
2. The highway is gradually elevated to create a Ramp over an earthen levee. The levee is open over the railroad tracks until just prior to an event. At that time, a stowed swing gate is swung over the tracks while columns are erected across the highway, then aluminum sections are added to complete the system.

USACE Illustrations



3. The Roller Gate is on site in the open position. Just prior to an event, the Roller Gate is rolled over the highway and locked into place while a swing gate is swung over the railroad tracks to complete the system.

4. The highway Swing Gates are on site and remain open until an event. At that time, they swing across the highway as another swing gate closes the railroad tracks to complete the system.

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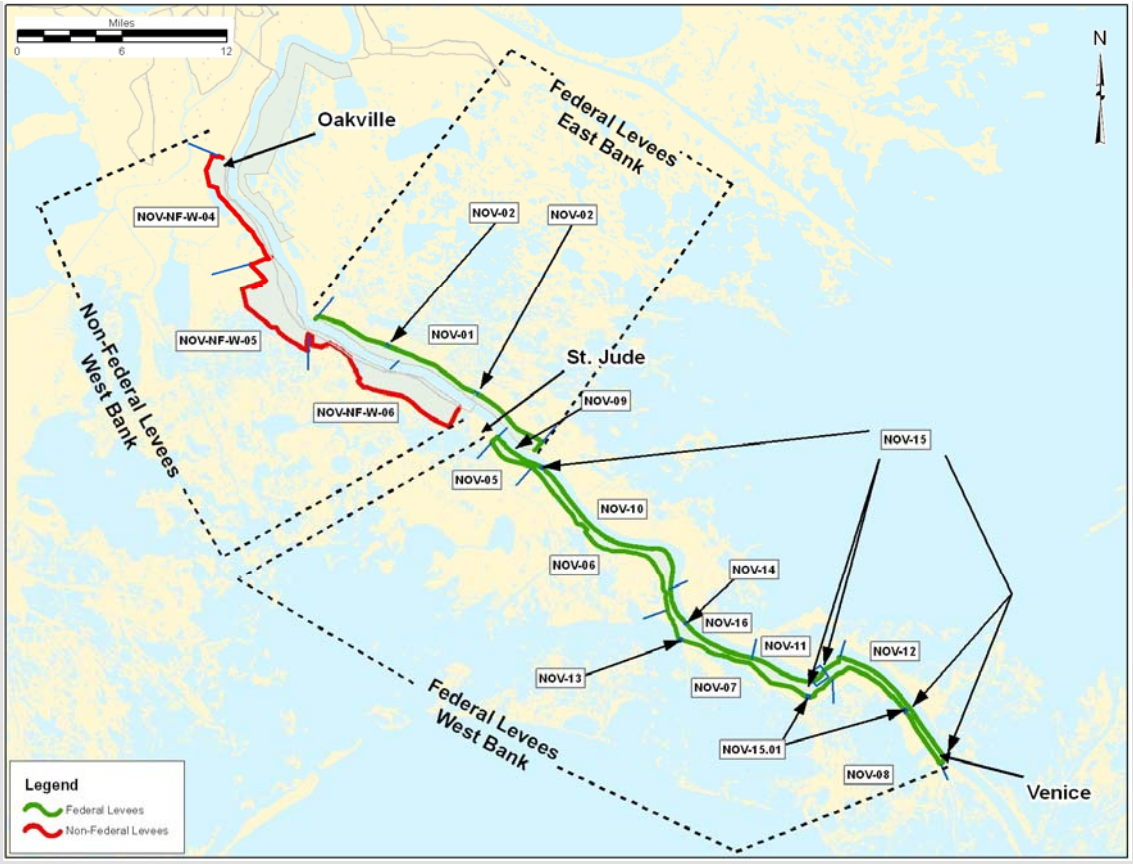
riod was extended twice in response to public requests.

"Citizens in Plaquemines Parish have actively participated in the review process for the Eastern Tie-In," said Col. Alvin Lee, New Orleans District Commander. "We've hosted more than 30 public meetings for this project – and we've listened to what the citizens had to say."



Plaquemines Parish Non-Federal Levee and New Orleans to Venice Projects

The Corps of Engineers is engaged in two separate Federal projects on a complementary timeline that will reduce risk to people and property in Plaquemines Parish below Oakville, where the Federally-authorized West Bank and Vicinity Hurricane and Storm Damage Risk Reduction System ends.

The **Plaquemines Parish Non-Federal Levee project (PPNFL)** includes replacing or modifying 32 miles of the current Plaquemines Parish Non-Federal Levees between Oakville and St. Jude, Louisiana on the west bank of the Mississippi River and constructing 2 miles of earthen levees from the ground level. Once completed, these levees will be part of the New Orleans to Venice, Louisiana Federal levee system (NOV).

The **New Orleans to Venice project (NOV)** is completing existing Federal levees on the east bank from Phoenix to Bohemia and on the west bank from St. Jude to Venice.

In an effort to maximize resources, the Corps' Vicksburg District is assisting with design and construction of the existing New Orleans to Venice project and incorporation of the Plaquemines Parish Non-Federal Levees into the NOV project. Mississippi Valley Division Commander Brig. Gen. Michael Walsh is using the division's regional resources to complete the project as expeditiously as possible.

For both projects, the Corps is authorized to reduce the risk of flood inundation from a design hurricane that has a radius of 30 nautical miles, a wind velocity of 100 miles per hours, a central pressure of 27.6 inches and a forward speed of 5 – 11 knots. Elevations for the system were developed through modeling of the design hurricane on several potential tracks that could affect the project area.

Plaquemines Parish Non-Federal Levee project (PPNFL)

Background: Constructed by Plaquemines Parish Government and private entities, the current levees were breached several times as

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a result of Hurricanes Katrina, Rita, Gustav and Ike which resulted in severe flooding and significant property damage.

Authorization and Funding: The PPNFL project was funded at $671 million in the 4th and 6th Supplemental Emergency Spending Bills passed by Congress in the aftermath of the 2005 hurricane season. Congressional authorization limited the potential choices of the proposed action by indicating that the Corps should "replace or modify" the existing PPNFL. Deviations from the current alignment of the PPNFL are proposed for engineering reasons or in order to minimize impacts to cultural resources and the natural environment, cost, or the real estate footprint.

Current Actions: The Corps is currently preparing a Supplemental Environmental Impact Statement (SEIS) for incorporation of the PPNFL Project into the Federal system. This document will outline the proposed project and the human and environmental impacts. In addition, the Corps' team is completing actions necessary to continue the design process, including soil borings, environmental assessments, real estate actions and hydrological and hydraulic modeling. A tentative alignment has been selected.

The Corps considered a range of possible alternative levee alignments and compared earthen levees and floodwalls in certain locations in the process of developing the proposed action.

The Corps considered:

- Engineering feasibility of construction of the proposed action.
- Impacts to communities located near the project alignment.
- Emergency accessibility during project construction.
- High-quality bottomland hardwood swamps and marsh habitat in the Barataria Basin.

Project Timeline:

- Draft SEIS released – November 2009
- Public Meeting – January 2010
- Sign Record of Decision – June 2010
- Advertise Contracts – March 2011
- Construction Complete (1st Contract) – December 2012
- Project Complete (last contract) – October 2013

New Orleans to Venice Project (NOV)

The project includes upgrading existing Federal levees on the east bank from Phoenix to Bohemia and on the west bank from St. Jude to Venice.

Background: Prior to Katrina, the NOV project was approximately 85 percent complete with an estimated completion date of September 2018. Funding constraints slowed work and extended the completion date.

Authority and Funding: The New Orleans to Venice project was funded at $769 million in the 3rd, 4th, 6th, and 7th Supplemental Emergency Spending Bills passed by Congress in the aftermath of the 2005 hurricane season. The funding in these acts provided for repair work, restoration of the project to the authorized grade, acceleration of the project, and armoring of critical project elements. Slight deviations from the original alignment of the project are anticipated in order to assure that soil stability conforms to adopted Hurricane and Storm Damage Risk Reduction System standards and to minimize impacts to cultural resources or the natural environment. In addition, cost considerations and real estate impacts are factors in other alignment modifications.

Current Actions: The Corps is currently preparing a Supplemental Environmental Impact Statement (SEIS) for the New Orleans to Venice Hurricane Protection Project. This document will outline the proposed project and the human and environmental impacts.

Project Timeline:

- Draft SEIS Release – June 2010
- Public Comment and Public Meeting – August 2010
- Record of Decision Signed – January 2011
- Advertise Contracts – October 2011
- Construction Complete (1st contract) – June 2012
- Project Complete (last contract) – December 2013

US Army Corps of Engineers

Corps of Engineers revises procedures for operating London Ave. Outfall Canal ICS

London Ave. Outfall Canal Interim Closure Structure

By Susan Spaht

The U.S. Army Corps of Engineers has modified the operating procedures for the London Ave. Outfall Canal Interim Closure Structure to close the gates when the Lake Pontchartrain level reaches 2.5 and rising for both tropical and non-tropical events.

During heavy rainfall in March 2009, water levels in the canal approached the maximum safe water elevation at the Harrison Avenue gage as a result of New Orleans Sewerage and Water Board pumping and an above normal lake level. Engineering analysis of this real-time data led the Corps to refine the hydraulic modeling of the canal. This modeling provided the data necessary for redefining the best operating procedures to reduce risk to the public.

On September 12, four days after changing the canal's operating procedures, easterly winds and heavy rainfall that day caused Lake Pontchartrain water levels to reach the operational trigger of 2.5 feet and rising. Col. Alvin Lee, Commander of the New Orleans District, made the decision to put the new protocol into action and closed the gates.

"We used all the pumps (direct drive and hydraulic) at one time or another during that event," said Carl Robinson, Canal Captain of the London Ave. Interim Structure.

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London Ave. Interim Closure Structure . September 12, 2009 . Gates closed, pumps operating

London Ave. operating procedures revised, new procedures put into action four days later during heavy wind and rainfall event.

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"We concentrated on using the east side pumps at night to minimize noise to the Pratt Street neighborhood on the west side of the canal."

On average, the direct drive pumps ran 3 hours, and the hydraulic pumps ran 4 hours for this event.

Previous procedures called for closing the gates when the lake side gage reached 4 feet and rising during tropical events. Lowering that elevation and operating during non-tropical events reduces the risk of exceeding the canal's 5-foot safe water elevation. It also maximizes the pumping capacity of the S&WB pump stations during heavy rainfall.

"This change will lessen the chance of localized flooding," said Chris Accardo, Chief of the Operations Division at the New Orleans District. "We're doing this because this is the right thing to do to reduce risk."

Further analysis determined that the operating procedures for the 17th Street and Orleans Avenue canals are not affected by the combination of high lake stages and intense rainfall. No operational changes are required for those structures.

US Army Corps of Engineers

Corps repairing pump stations in four parishes

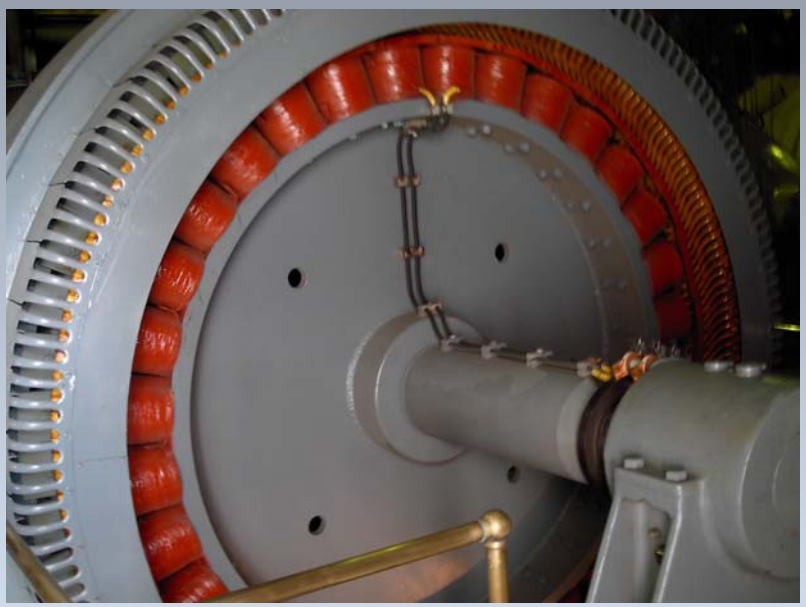
at 100% Federal expense

Workers install a new roof at the Bonnabel Pump Station in Jefferson Parish.

On August 13 the U.S. Army Corps of Engineers reached a major milestone when it awarded the last of 30 contracts for non-Federal pump station repairs. The pump station repair work started under Task Force Guardian in 2006. So far, more than $98 million has been spent on the repair program with a projected total cost of approximately $110.7 million.

More than 70 pump stations scattered throughout the Greater New Orleans area are critical to prevent flooding from rainfall within the flood protection system. Congress included the authorization and allocation of funds for pump station repairs to complement the construction of the Hurricane and Storm Damage Risk Reduction System that the Corps is building, an almost $15 billion program.

Pump station repair contracts have been awarded for work in Orleans, St. Bernard, Jefferson and Plaquemines Parishes. The repairs include such items as: pump motors, pump bearings, gearboxes, electrical switchgear, fuel tanks and pump station structures. These repairs will put the pump stations in a condition better than their pre-Katrina status.



One of the re-wound motors at Orleans Pump Station No. 3. This motor is approximately 14 feet in diameter.

"These pump station repairs are an important part of the hurricane and storm damage risk reduction work we are constructing with our non-Federal partners," said John Ashley, Chief of the Corps' Existing Pump Station Branch. "The next step will be the storm proofing of pump stations in Orleans and Jefferson Parishes which will begin in earnest later this year."

US Army Corps of Engineers

This chart shows the breakdown of contracts by parish:

Parish	Number of Projects	Project Cost in millions
Jefferson	8	2.5
Orleans	12	52.5
Plaquemines	5	28.1
St. Bernard	5	27.6
Total	30	$110.7