Repowering New Orleans - a new approach to a historic city

Transmission Project Management & Construction

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April 21, 2017
Presentation Objectives

• Project Overview and Purpose

• Risks and Challenges of the project

• Risk Mitigation plans and project strategies

• Lessons for Future
Project Overview

**Purpose:** Replace output of the aging Michoud Power Plant by Summer of 2016

**Background:**
- Plant built late 1950s
- Located in New Orleans East
- 875MW Generating Station
- Key source of peak power for NOLA

**Scope:**
- Upgrade Ninemile to Derbigny and Ninemile to Napoleon 230kV Transmission Lines
- Reconductorto 2100A
- Maintain existing sag profile
Load Flow Analysis: Prior to Michoud De-Activation
Load Flow Analysis: After Michoud De-Activation

Project Overview

Ninemile-Napoleon: Light **Blue** Line (4.4 miles)
Ninemile-Derbigny: Lime **Green** Line (6.6 miles)
Challenges and Hazards - Landscape

- Tight working areas
  - Cars
  - Proximity to homes
  - Size of equipment
  - Trees
- Ingress/Egress
- Major Road Crossings
  - Interstate Crossings
  - Magazine, Earhart, & Carrollton
- Equipment setup
Challenges and Hazards - Safety/Public

• Energized Distribution Lines

• Large construction zones in neighborhoods

• Public Inconveniences
  – Residents on route
  – Road Closures

• Katrina Fatigue
Challenges and Hazards - Outages

Ninemile Scope:

• Re-conductor five (5) spans of two 230kV lines at the Ninemile generation facility.

• 230kV lines cross over five (5) 115kV transmission lines.

• Conventional construction methods require outages on all lines to work safely.

• Two system events from load shed of up to 560MW.
Project Strategy – Reduce Public Impact

• Design considerations
  – Steel poles built in the late 1960s
  – Maintain existing sag profile
  – Do not exceed existing tensions
  – Replacing structures not an option

• Selected 3M 1272 ACCR “Diver” conductor
  – Saved existing structures
  – Minimized community impact
  – Installed smaller wire

EXISTING
1780 ACSR “CHUKAR”
84/19
1.60” OD
2.08 Pounds/Foot
51,000 Pounds RBS
Ampacity @ Max OP: 1608A

NEW
1272-T09 Diver ACCR
48/19
1.382” OD
1.377 Pounds/Foot
37,300 Pounds RBS
Ampacity @ Max OP: 2179A
Project Strategy – Construction in segments

• Divide line into segments
  – 90 Degree turns

• Stage 1: Pre-Pull
  – 2-4 Hours per Pole
  – Replace Davit Arms with Braced-Post Insulators
  – Place existing wire in stringing blocks

• Stage 2: Pull
  – 29 Total Segments
  – 46.7 Total Miles of Wire Pulled

• Stage 3: Post-Pull
  – 2-4 Hours per pole
  – Remove pulleys
  – Clip in wire
Project Strategy – Prepare Public and Communicate

• Collateral Material
  – 10 Day
  – 3 Day
  – Next Day

• Public Engagement
  – Town Hall Meetings
  – On the Street
  – Keep everyone safe

• Road Closure Maps
• Website/Hot Line
Project Strategy – Plan for Interstate Crossings

- Police Engagement
- Media Coverage and Public Notice
- Emergency Recovery Plan
Project Strategy – Eliminate Significant Load Risk

• Analyze Outage risk and mitigation strategies

• Hire specialized crews to perform the worked energized

• Develop Emergency Recovery Plan
Project Lessons for the Future

• Project Planning starts at conception

• Risk Analysis is critical

• Mitigation plans must have detail

• Communicate and Engage all stakeholders using multiple methods

• Execute Precisely

Customer compliments:

“I work at home, but whenever I needed to leave the house, someone was there to escort me. A special thank you.” – Chris, Entergy customer

“I have never seen such professional kind, courteous of all employees doing this major upgrade on Patton St. Thanks for just doing it perfect.” – Philip, Entergy customer

“I have been so amazed by how smoothly the operation has been to upgrade the lines on the street that runs next to my house.” - Patty, Entergy customer

“I feel lucky to have such a gracious and wonderful team of people to serve near my home during the transmission project.” - Madeline, Entergy customer