

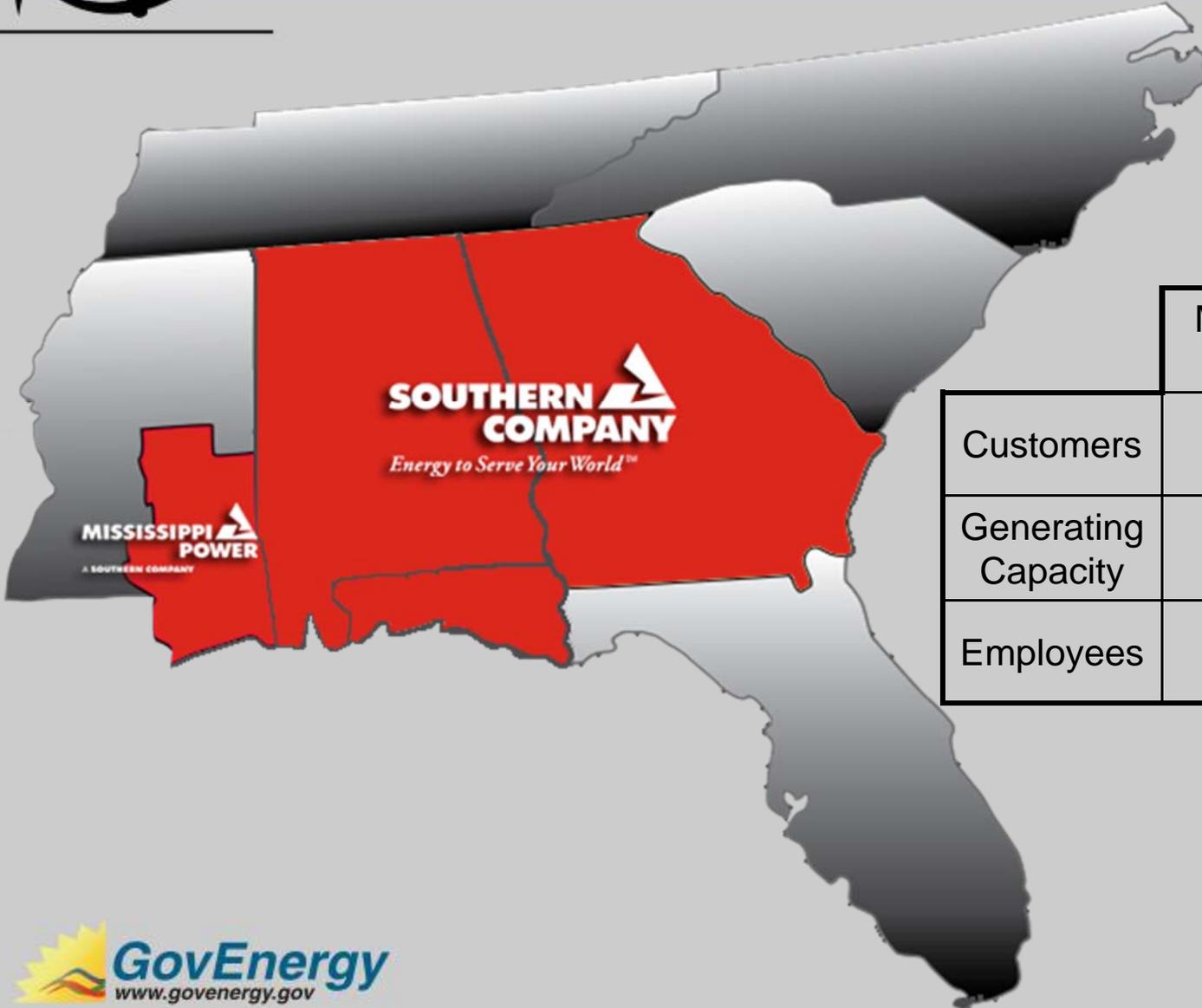
# Charting a Course to Energy Independence

Providence, RI  
August 9-12, 2009





# Who We Are



	Mississippi Power	Southern Company
Customers	200,000	4.4M
Generating Capacity	3,166MW	42,000MW
Employees	1,200	26,000



# Our Corporate Culture



## **Southern***Style*

- Unquestionable Trust
- Superior Performance
- Total Commitment

## **Principle-Centered Leadership**

- Be Proactive
- Begin With End in Mind
- Put First Things First
- Think Win Win
- Seek First to Understand,  
then to be Understood
- Synergize
- Sharpen the Saw



# Key Government & Energy Customers



- Keesler Air Force Base
- Naval Construction Battalion Center
- MS National Guard's Camp Shelby, Joint Forces Training Center
- Mississippi Air National Guard
- NASA Stennis Space Center
- Northrop Grumman Ship Systems
- Chevron Pascagoula Refinery
- BP Gas Processing Plant
- Plantation Pipeline
- Colonial Pipeline



# New Energy & Energy Efficiency



-  earthcents®
- Biomass; Agriculture Residue, Landfill Methane
- Clean Coal; IGCC with 65% Carbon Capture and Sequestration - 2014

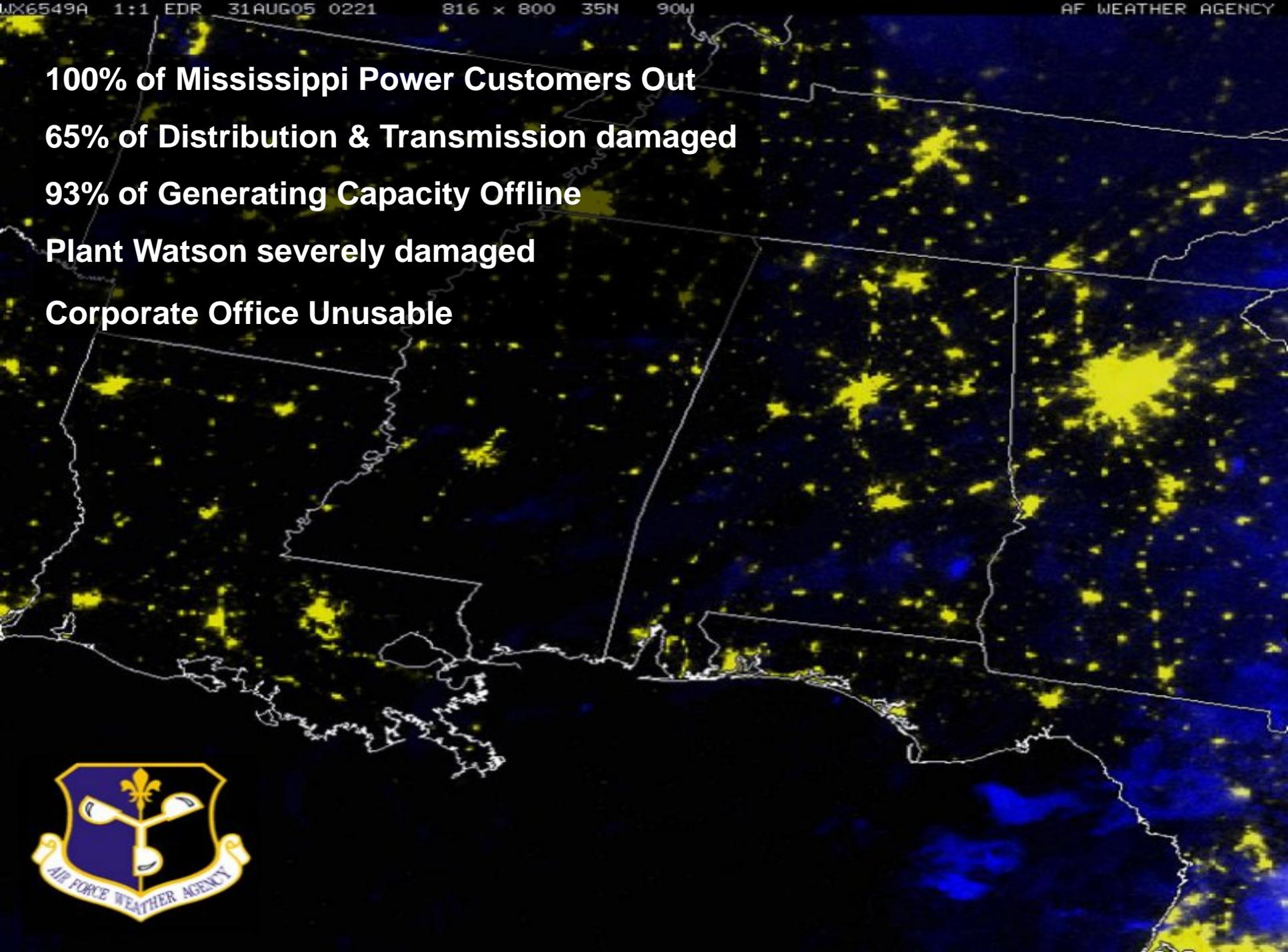
IMAGERY COURTESY: CIMSS/SSEC

# Hurricane Katrina



29 AUG 2005 - G-12 IMG - 01:15:00UTC

**100% of Mississippi Power Customers Out**  
**65% of Distribution & Transmission damaged**  
**93% of Generating Capacity Offline**  
**Plant Watson severely damaged**  
**Corporate Office Unusable**





# Chevron Pascagoula Refinery





# Chevron Pascagoula Refinery

- Processes 330,000 barrels a day
- 1,640 employees and approx 3,000 contractors
- Produces 5.5 million gallons of gasoline a day
- Uses 112 million kilowatt hours of electric power a month
- Mississippi Power's largest customer



# Chevron & Mississippi Power

*“A partnership seeking win-win solutions to ensure world class performance and products.”*



# Chevron & Mississippi Power

## Partnership after Hurricane Katrina





# Chevron & Mississippi Power

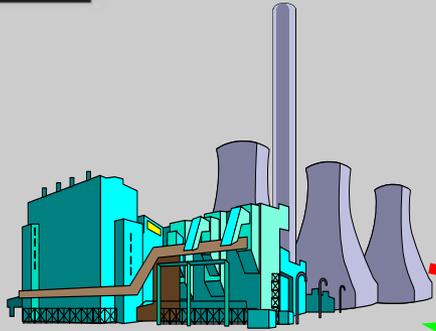
- The Chevron Refinery was critical to Mississippi Power's restoration efforts
  - Provided fuel to 12,000 plus Southern Company personnel and contractors who came into the region to re-establish power
- Mississippi Power's restoration efforts
  - Service was restored to critical gas pipeline infrastructure in 48 hrs.
  - Power was restored to the Pascagoula Chevron Refinery on Sept 2<sup>nd</sup> (4 days after the storm)
  - Power was restored to all customers who could safely take power by Sept 10<sup>th</sup> (12 days after the storm)



**Chevron/ Mississippi Power  
Partnership started at  
3:15 a.m., February 4, 2004.**



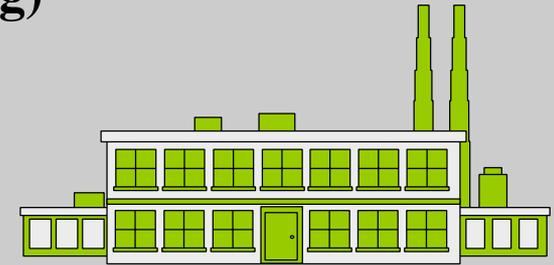
# Mississippi Power Service to Chevron



Mississippi Power  
Co-Generator

~130 MW  
~1,000,000 MWH/year  
800 Mlb/hr steam (avg)

Fuel



Chevron Refinery



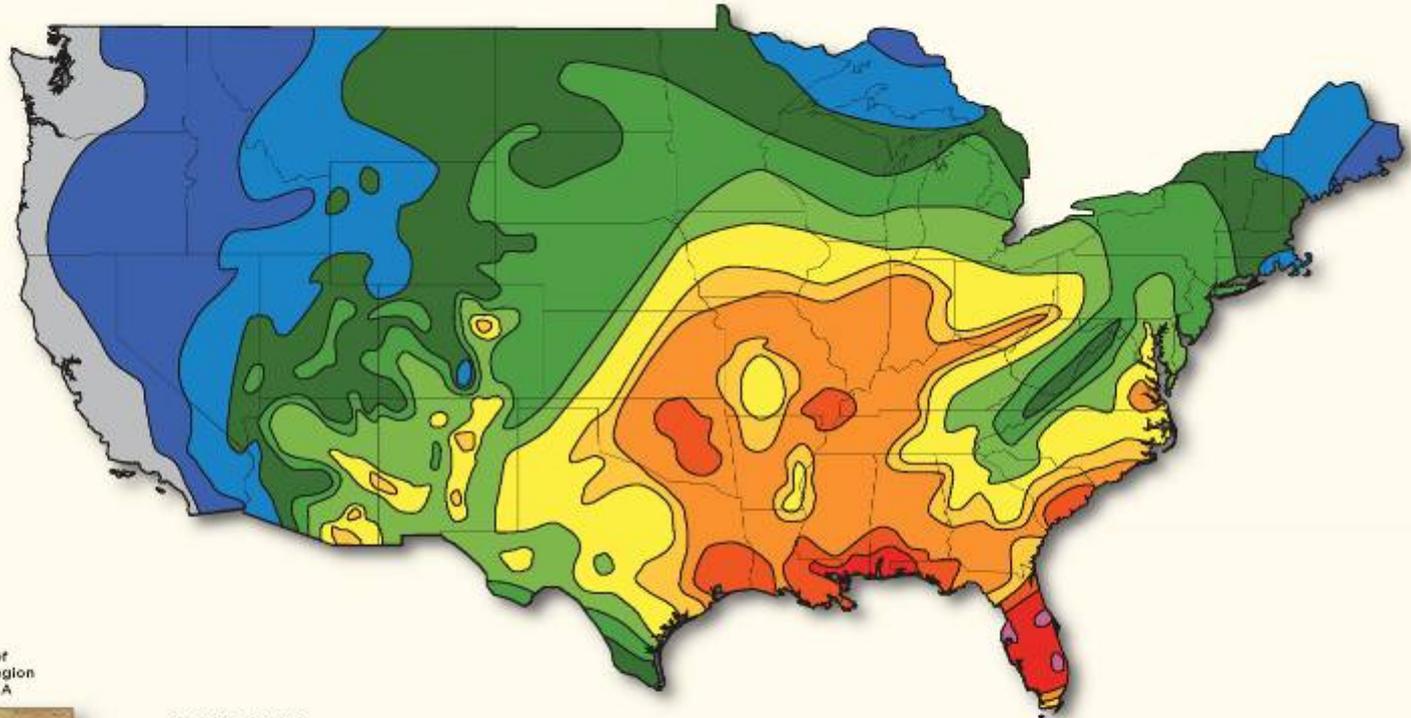
Mississippi Power  
Transmission Grid

~35 MW  
~300,000 MWH/year

# Vaisala's National Lightning Detection Network (NLDN)

## Cloud-to-Ground Lightning Incidence in the Continental U.S. (1997 - 2007)

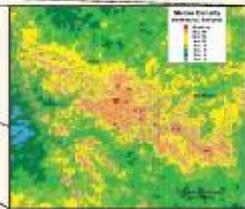
Average Flash Density  
fl/sq km/yr



Terrain Map of  
Mogollon Rim Region  
Southwest USA

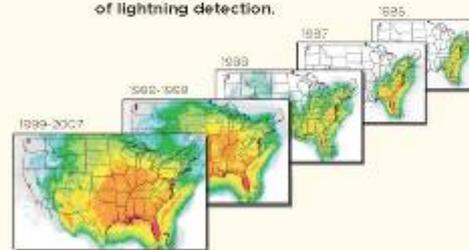


Cloud-To-Ground  
Stroke Density Over  
Mogollon Rim Region



1997-2007 Vaisala NLDN  
©2008 Vaisala Services

Over 20 years  
of lightning detection.



# VAISALA

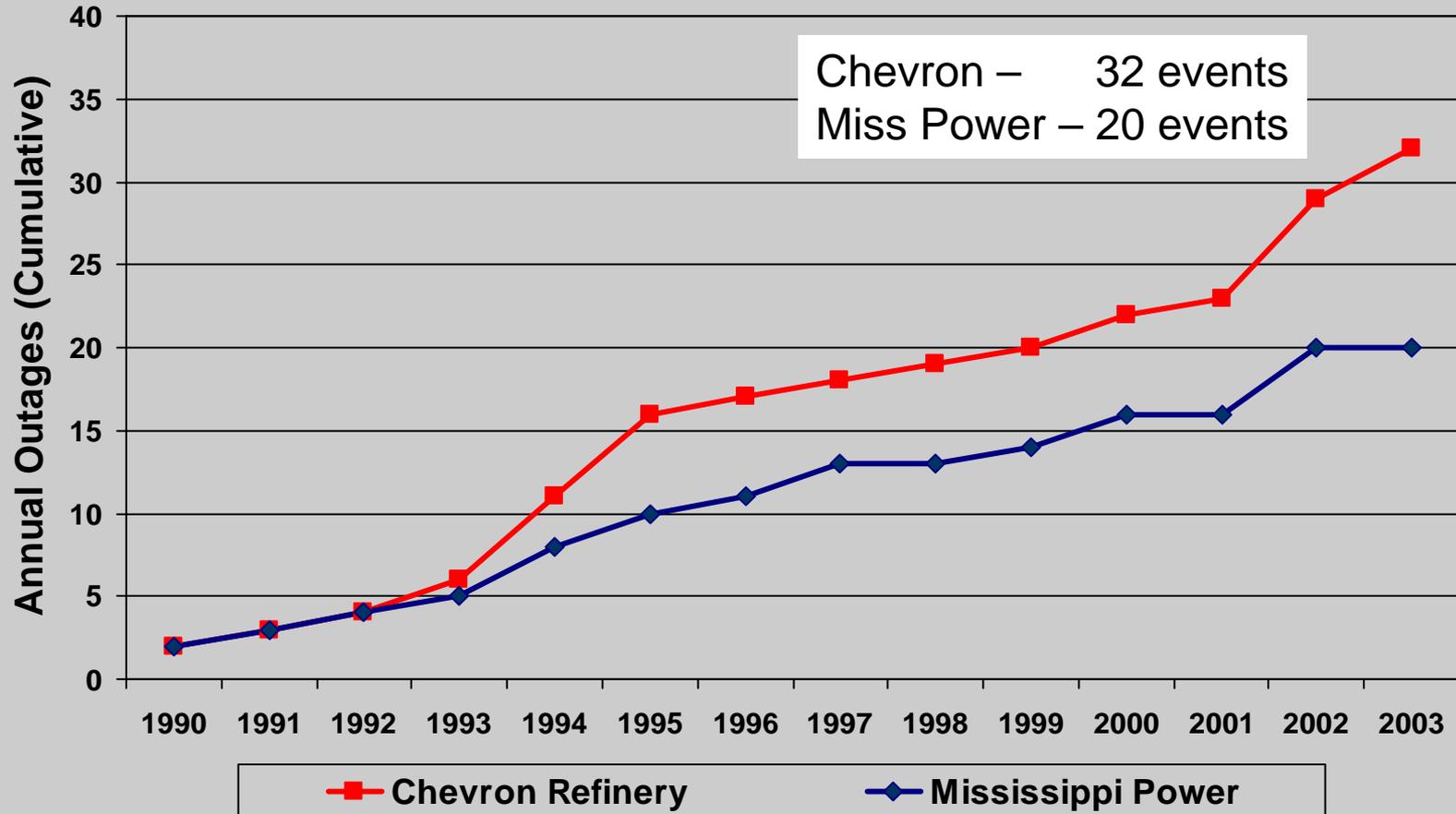


# Electrical Reliability

- **How does the utility and the customer define reliability?**
- **What are the expectations?**



# Defining Reliability





# Electrical Reliability

- Criticality of uninterrupted power supply
- Backup systems and safety systems must be in place to ensure electrical availability



# Chevron/Mississippi Power Joint Electrical Reliability Projects





# Chevron/ Mississippi Power Joint Electrical Reliability Projects

## Improvement Projects

- Chevron Refinery Facilities - \$100 million
- Mississippi Power Facilities - \$70M
  - Includes shared investment between Mississippi Power and Chevron



# Chevron Electrical Reliability Improvement Projects





# Chevron Electrical Reliability Improvement Projects

Substation reliability improvement - \$20 Million

- Ten substations within the Refinery
- 13.2 KV, 5KV, and 480 Volt power distribution systems
- New buildings
- New breakers
- New transformers
- New electrical power monitoring system



# Mississippi Power

## Reliability Improvement Projects

- Two new “breaker and a half” on-site substations
- One new high voltage transmission line into the Refinery and upgrades
- Enhanced protection schemes
- New controls for the cogeneration plant



# Chevron & Mississippi Power

**A true partnership based on:**

- Trust
- Communication
- Mutual future success



# Gustav/Ike: The Ultimate Test

- 2008 hurricanes shut down more than 25% of US refining capacity; 14 refineries were shut down
- Operation was critical, as the Pascagoula Refinery was one of few Gulf Coast refineries that remained online during Gustav and Ike



# Closing Remarks