Entergy Arkansas, Inc.

Proposed Transmission Projects

Entergy Transmission Planning Summit

New Orleans, LA

July 8, 2004

Entergy

2004 – 2005 Transmission Service Request Projects

1.) Jonesboro CWL Transmission Service

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2004-2005 Transmission Service Request Projects

2004 Upgrades:

- Rebuild Harrisburg Tap - Marked Tree 161 kV Transmission Line
  - 2.09 miles
  - Replace 20 H-Frame structures with Single Pole structures
  - New conductor size is 666 MCM ACSR
  - Install temporary by-pass to feed Harrisburg Substation
- Rebuild Jonesboro - Jonesboro SPA 161 kV Transmission Line
  - 0.84 miles
  - Replace 10 H-Frame structures with Single Pole structures
  - New conductor size is 954 MCM ACSR
  - 1590 MCM ACSR
- Rebuild Paragould - Paragould South 161 kV Transmission Line
  - 2.09 miles
  - Replace 20 H-Frame structures with Single Pole structures
  - New conductor size is 666 MCM ACSR

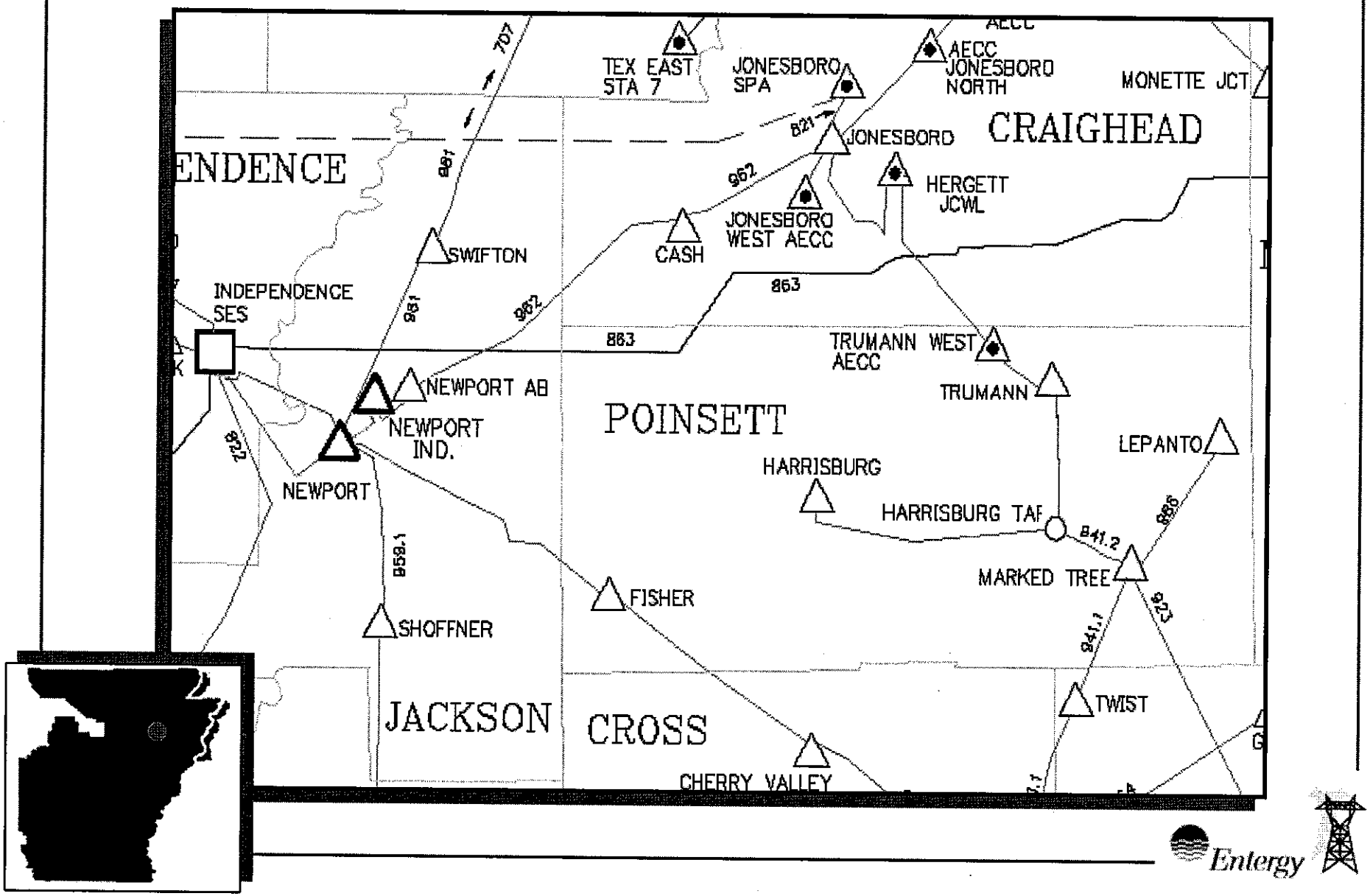
2004-2005 Transmission Service Request Projects

2005 Upgrades:

- New 161 kV Transmission Line from Independence to Newport
  - Line to be installed in lieu of upgrades to Lines #839 and #906 Above
  - 12 Miles of New Line to Parallel existing Line #906
  - Single Pole Structures
  - 1590 MCM ACSR

Estimate: $10.5 MM

Jonesboro Area



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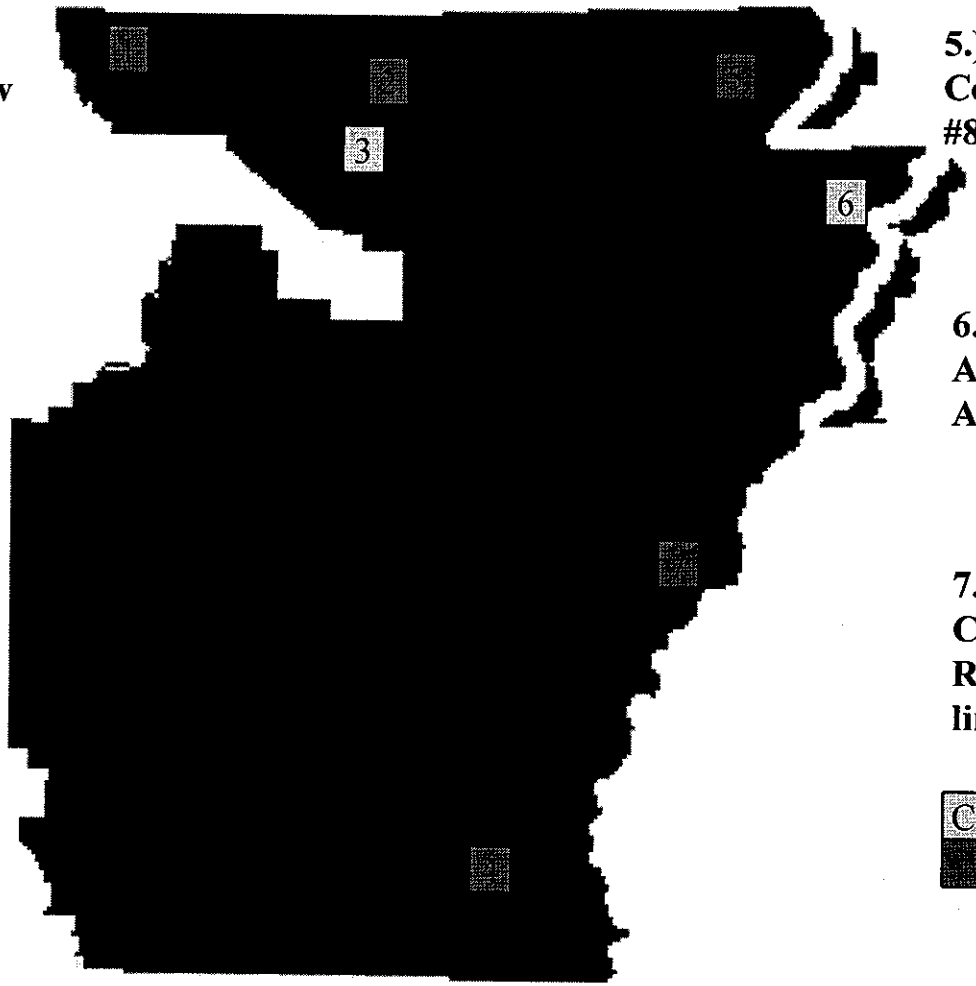
2005 - 2006 EAI Transmission Reliability Projects

1.) New 161 kV Line Osage Creek -Grandview Line

2.) Re-rate Harrison East – Summit 161 kV line to 162 MVA

3.) Hilltop: New Ring Bus at Intersection of EAI and SPA lines

4.) Warren East 24 MVAR Capacitor Bank



5.) Reconductoring of Corning - Texas Eastern #8 115 kV line

6.) Dell 500 / 161 kV Autotransformer Addition

7.) Gobel: Install Capacitor Bank and Reconfigure 115 kV lines

Carryover from 2004

Entergy

2004-05

500/161 kV Autotransformer Addition at Dell Substation

Scenario:

- Dell 500/161 kV substation provides a high voltage source to the northeastern area of Arkansas.
- There are presently 4 single phase autos (3 in-service and 1 spare)
- Each transformer has a rated capacity of 224 MVA.
- The system was planned to accommodate the loss of a single phase, since a spare can be quickly connected.
- Loss of the entire autotransformer will cause depressed voltages at Dell and the surrounding area.

Proposed Solution:

- Install a single 3 phase, 500/161 kV autotransformer.

Estimated Cost: $7 MM

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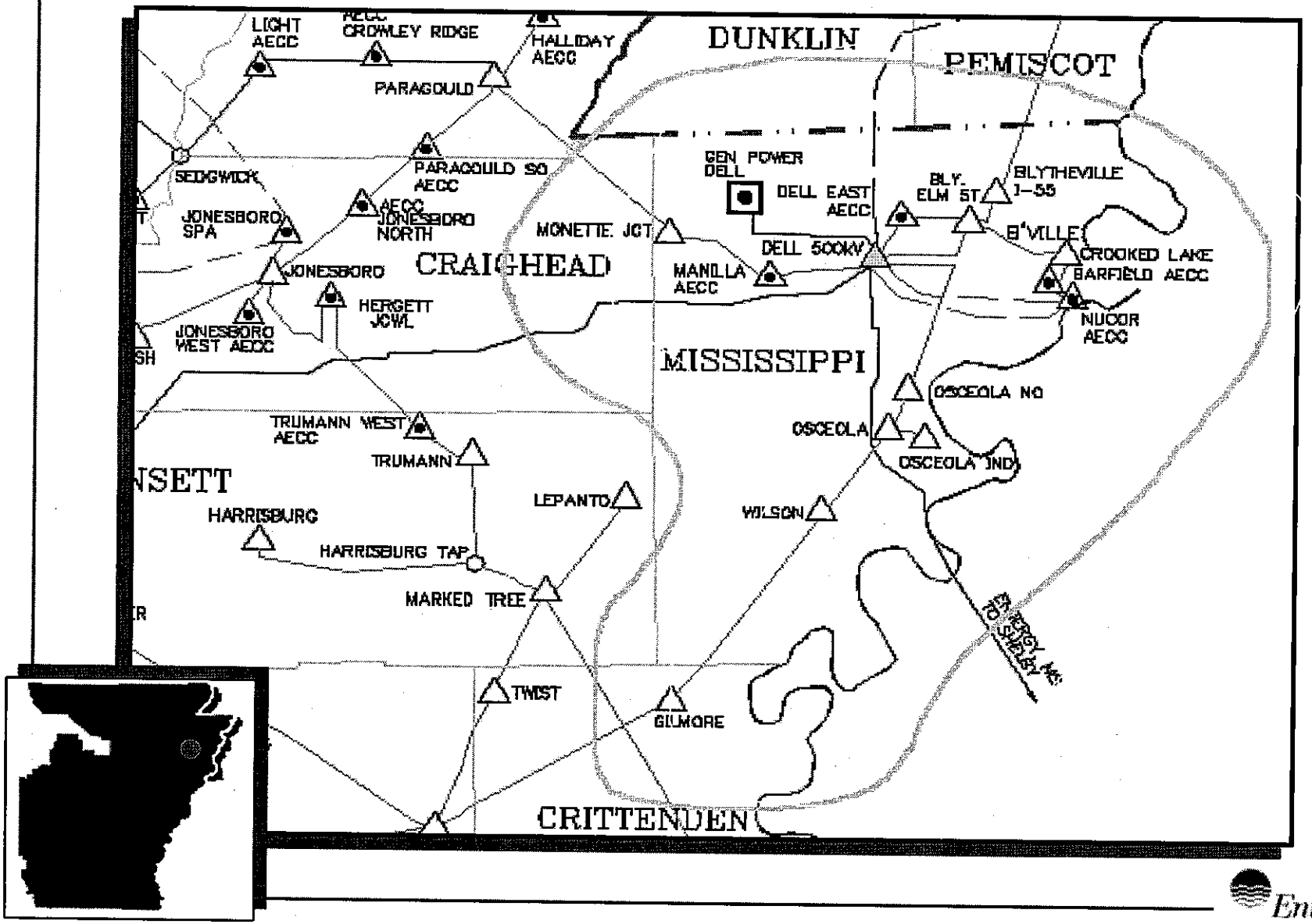
Dell Area



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Hilltop: 161 kV Ring Bus Between EAI and SPA Lines

2005

Scenario:

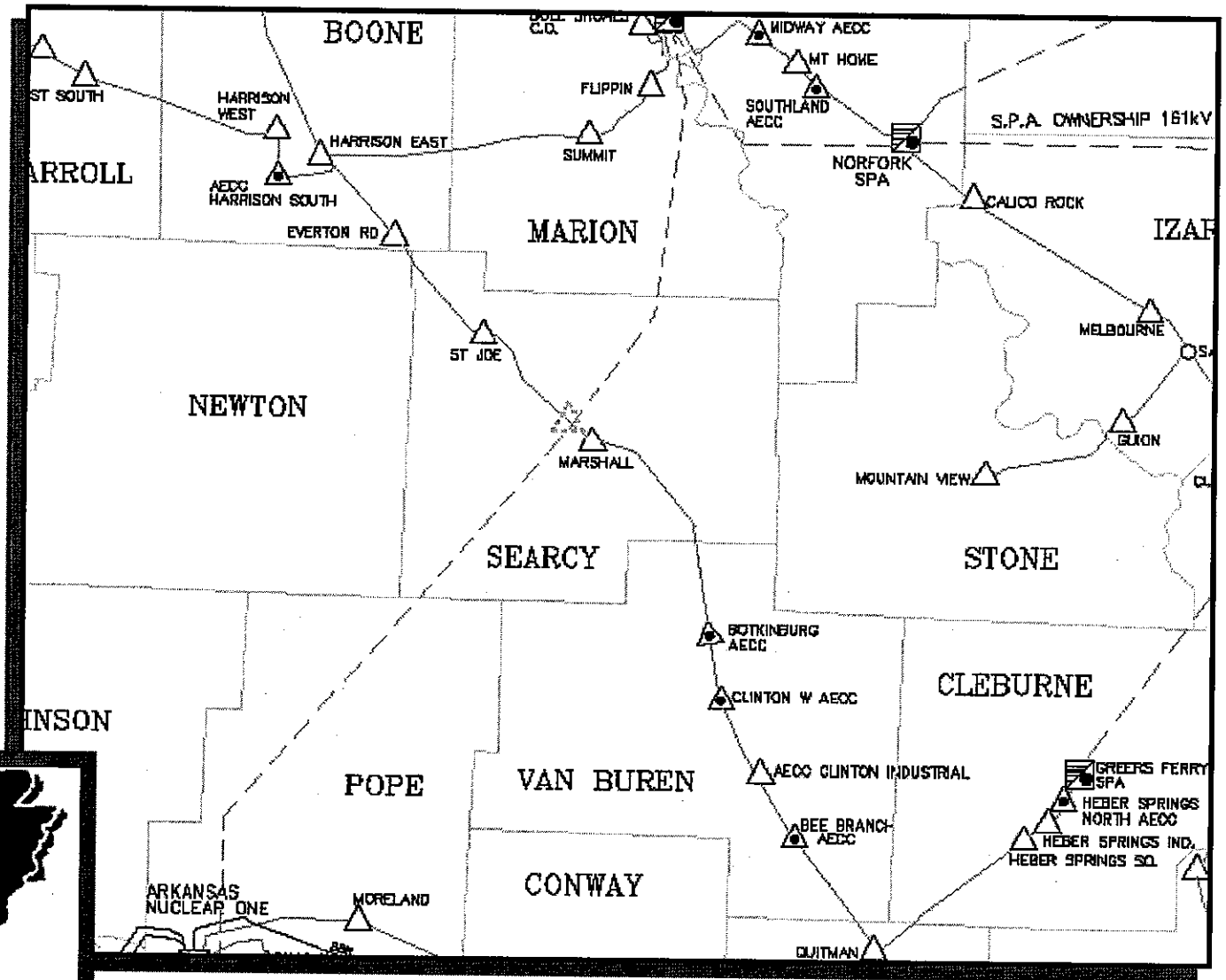
- The 161 kV transmission system in northwest Arkansas is generally served by generation located at Arkansas Nuclear One (ANO) an Independence SES (ISES).
- There are also units at Table Rock, Ozark Beach, Norfork and Bull Shoals Dam which provide some support during the summer peak, but availability of these resources is limited by the availability of water on their respective sources.
- Three major transmission lines which originate at Harrison East and cause undervoltages and thermal overloads:
  - Harrison East – Eureka Springs 161 kV
  - Harrison East – Bull Shoals Dam 161 kV
  - Harrison East – Quitman 161 kV

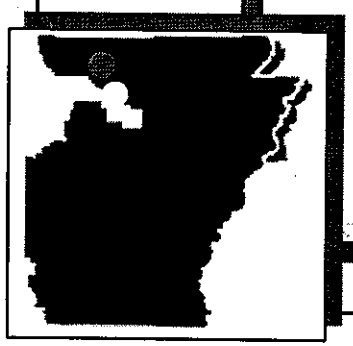
Proposed Solution:

- Build a four-breaker ring bus, Hilltop, where the SPA line from Dardanelle - Bull Shoals crosses the APL line from Harrison East - Quitman.

Estimated Cost: $3.5 MM

Marshall Area





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2005

Re-rate Harrison East – Summit 161 kV Line

Scenario:

- In Northwest Arkansas, the transmission line from Bull Shoals - Harrison East is 33.62 miles.
- It was built in 1948 using
  - wood pole, H-frame type construction,
  - 3/8" HSG class "A" galvanized shield wire,
  - 250.0 MCM type 24R1 hollow-core copper conductor (162 MVA rating).
- De-rated the line segment from Harrison East-Summit to 115 MVA
- Pole inspections require another de-rating

Proposed Solution:

- Replace remaining wood crossarms, install bayonets, and replace some wood pole structures with steel.

Estimated Cost: $1.5 MM

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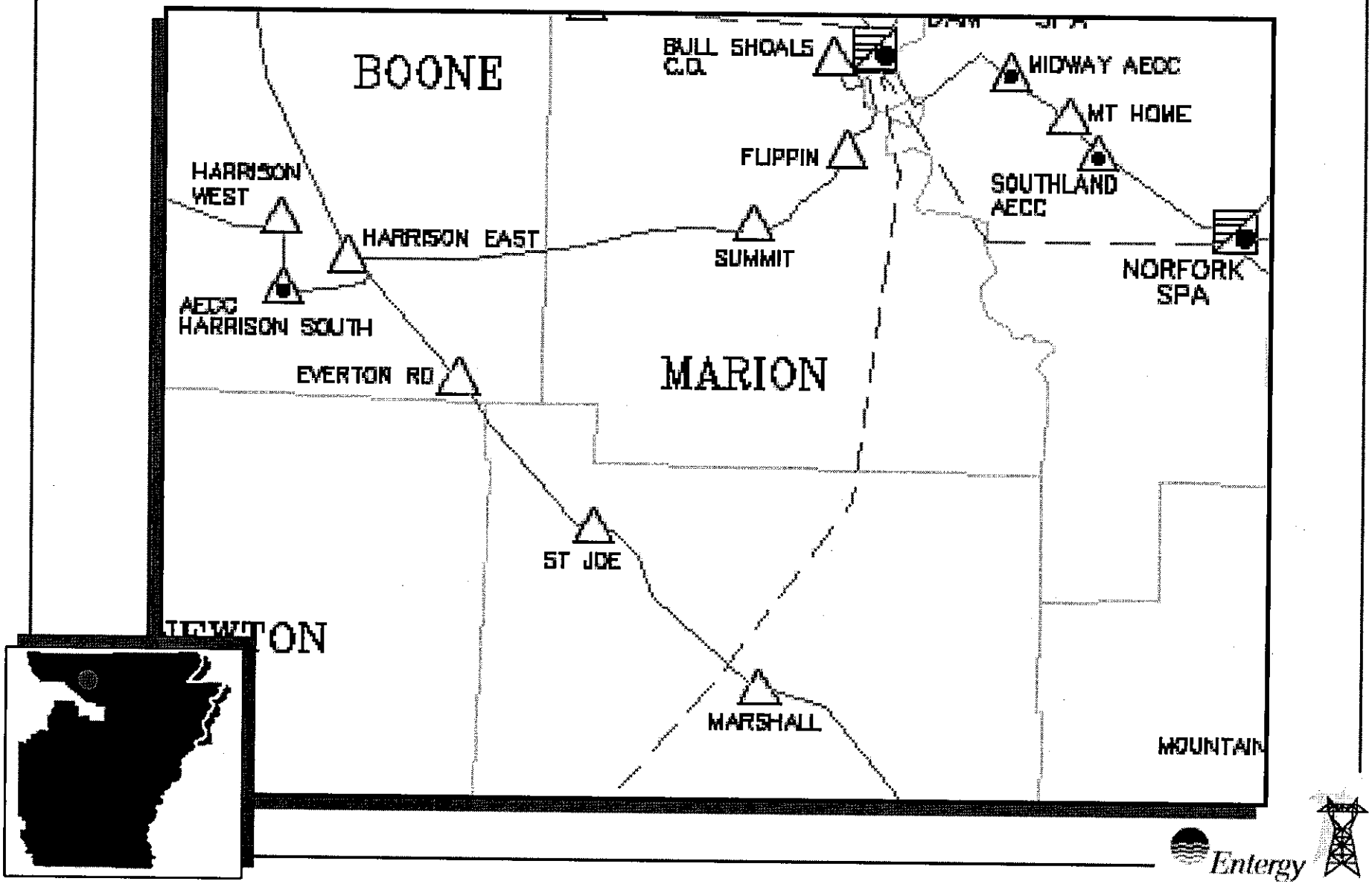
Harrison Area



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2005

Gobel: Reconfiguration of 115 kV lines

Scenario:

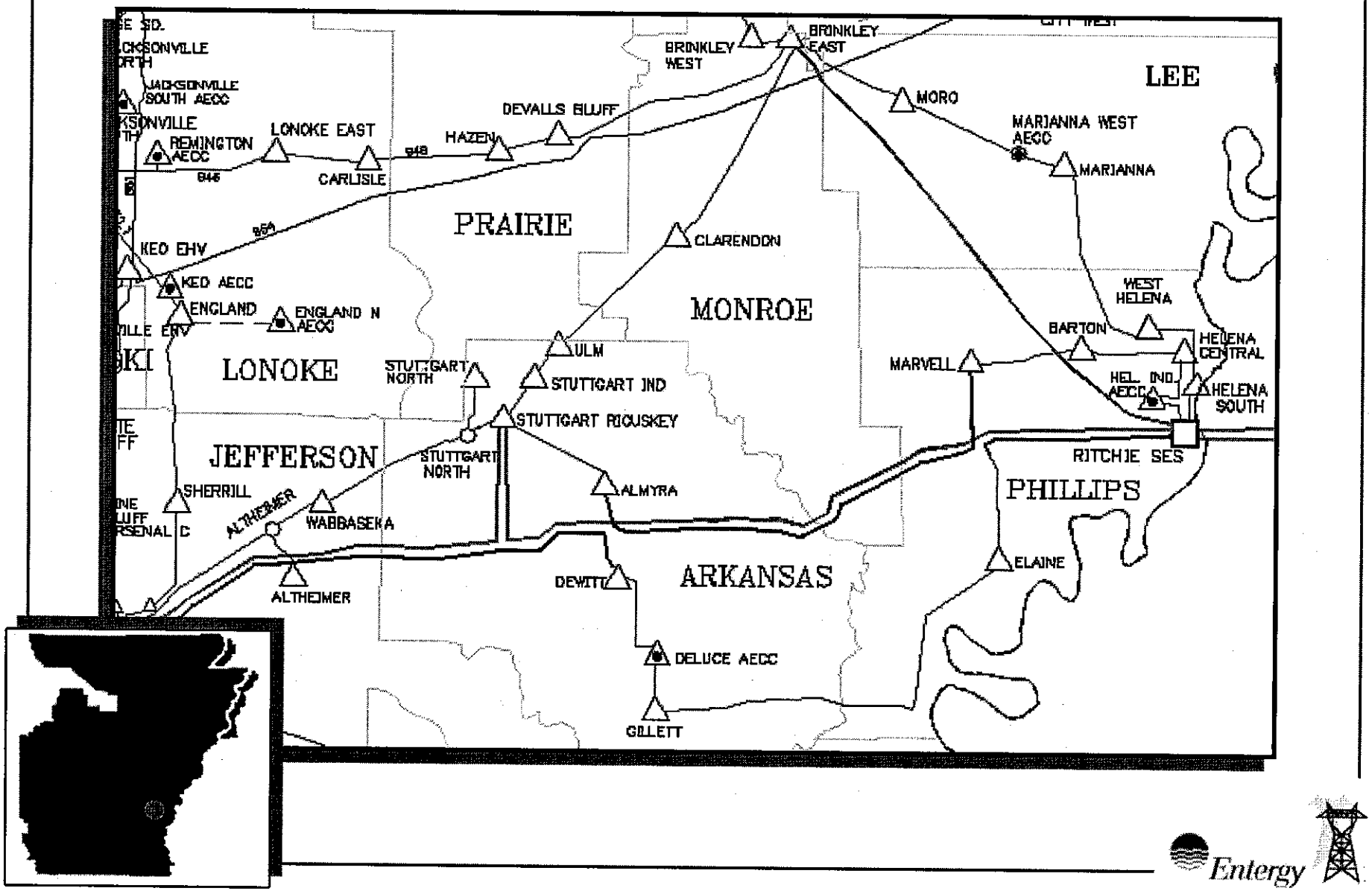
- Loss of the Helena Industrial - Ritchie SES 115 kV line segment causes
  - Low voltages at Helena Central, Barton, Marvell, Elaine, Gillette, Deluce, and Dewitt
- Loss of the Stuttgart Rickusky 230/115 kV autotransformer causes
  - Low voltages at Almyra, Deluce, Gilette, Dewitt, Stuttgart North, Stuttgart Ricusky, Ulm, Wabbaseka, and Stuttgart Industrial
  - Overloads the Woodward – Altheimer 115 kV line segment (106.5%)
  - Overloads the Altheimer – Wabbaseka 115 kV line segment (102.5%).

Proposed Solution:

- Convert one of the existing 230 kV lines from Woodward to Ritchie to 115 kV and reconfigure the existing 115 kV lines.
- Add a 21.6 MVAr capacitor bank at Dewitt.

Estimated Cost: $4 MM

Marvell Area



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Texas Eastern Station #8 – Corning 115kV Line Rebuild

2005-06

Scenario:

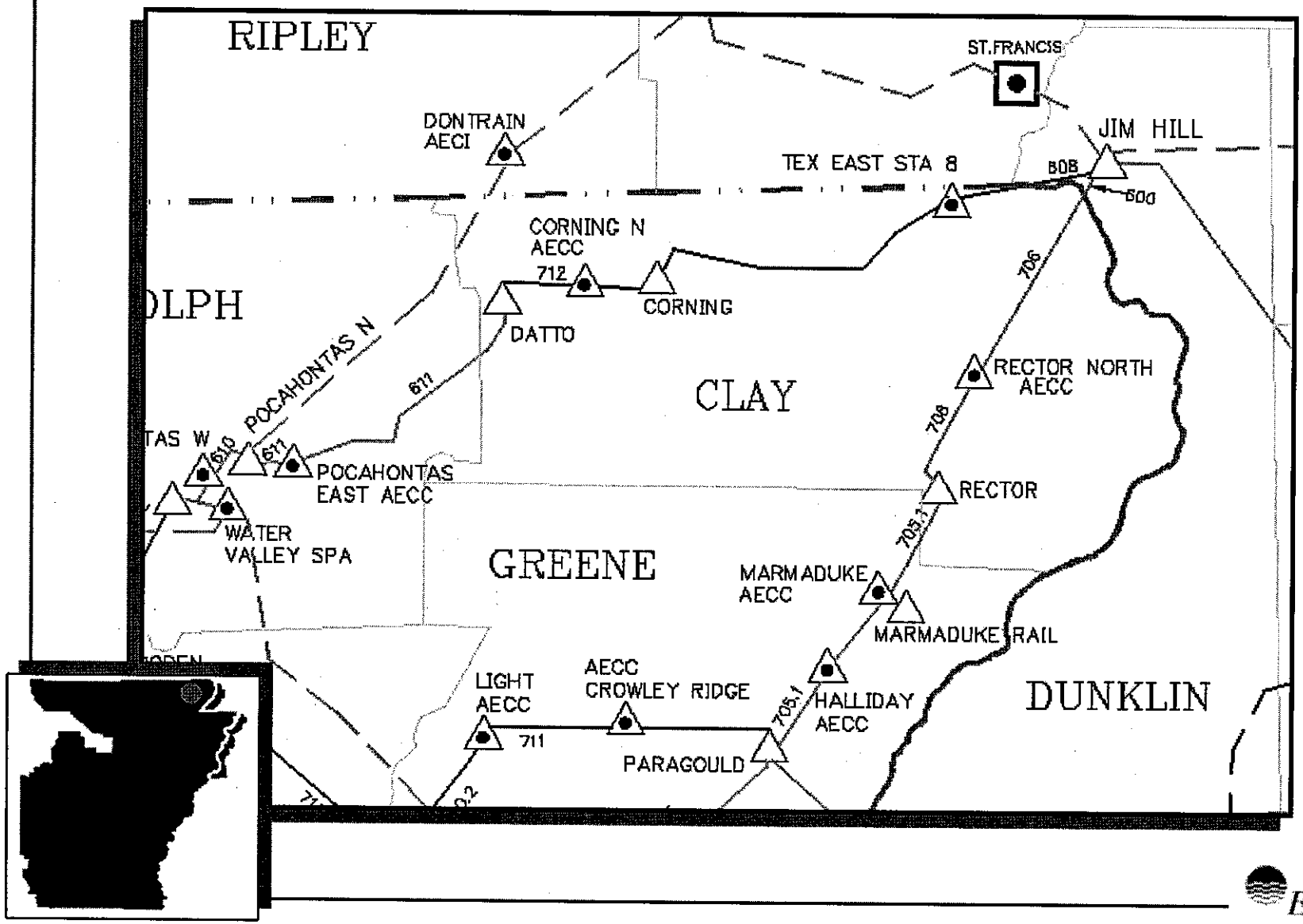
- Previous construction has increased the conductor size on selected spans to 1590 mcm and 666 mcm, but a majority of the line is 336 mcm or smaller (e.g., 4/0 copper), and substation equipment limits the ampacity of the line.
- The voltage drop from TE #8 to Corning exceeds 22% under certain single contingency scenarios.
- Low voltage also causes greater current to flow and will cause a 190% overload on the Corning to TE #8 line segment.

Proposed Solution:

- Rebuild the line segment from TE #8 to Corning with 666 mcm, to increase the line rating to 176 MVA.

Estimated Cost: $6 MM

Datto - Jim Hill Area



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2006

Install 21.6 MVAR Capacitor Bank at Warren East

Scenario:

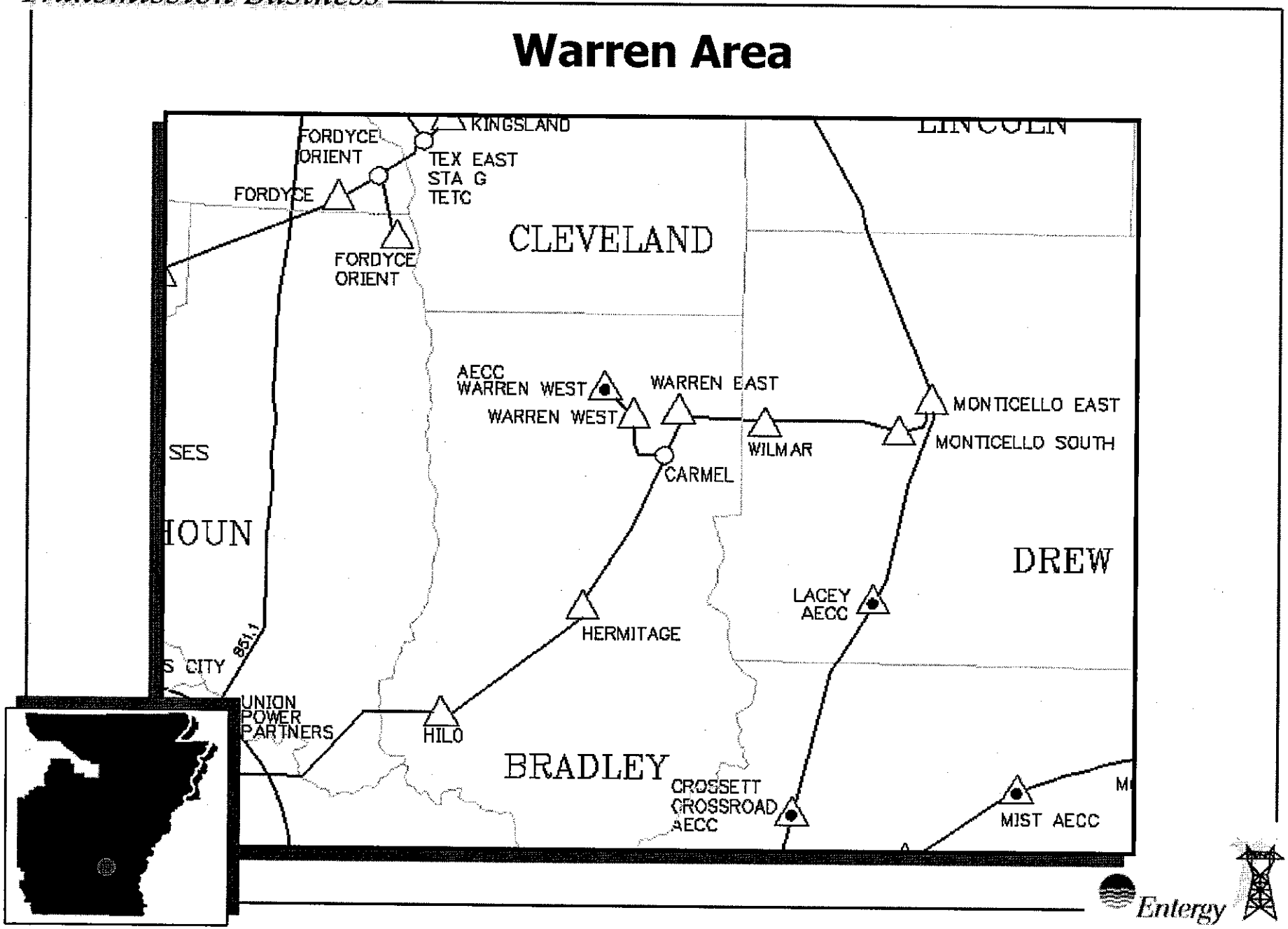
- The Warren East is a substation which is located in southeastern Arkansas, northeast of El Dorado.
- This is a long radial line fed from Monticello East and El Dorado EHV which is approximately 61 miles.
- Loss of any of the line segment along this line causes voltages to dip below 80%.
- Loss of the 500/115 kV at El Dorado EHV also causes low voltages.

Proposed Solution:

- Install a 21.6 MVAR capacitor bank at the Warren East substation.

Estimated Cost: $400 K

Warren Area


KINGSLAND
FORDYCE ORIENT
TEX EAST STA G TETC
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FORDYCE ORIENT
CLEVELAND
LINCOLN
AECC WARREN WEST
WARREN WEST
WARREN EAST
MONTICELLO EAST
MONTICELLO SOUTH
WILMAR
CARMEL
SES
HOUN
DREW
LACEY AECC
HERMITAGE
S CITY
851
UNION POWER PARTNERS
HILO
BRADLEY
CROSSETT CROSSROAD AECC
MIST AECC
Entergy

2006

Osage Creek-Grandview

Scenario:

- By 2010, it is estimated that approximately 227 MW of load will be served between Harrison East and Eureka Springs.
- Nearly 110 MW of the load will be located at Osage Creek, at the extreme northwest end of the line.
- Loss of the Harrison East – Harrison South transmission line segment causes thermal overloads by as much as 7% on the Eureka – Osage Creek (AECC) line segment and leaves over 30 MW at risk.
- Loss of this line also causes Osage's voltage drop to 73%.

Proposed Solution:

- Construct a new switching station, Grandview, on the transmission line from Table Rock Dam – Eureka Springs. Build a new line between Grandview and Osage Creek.

Estimated Cost: $4.6 MM

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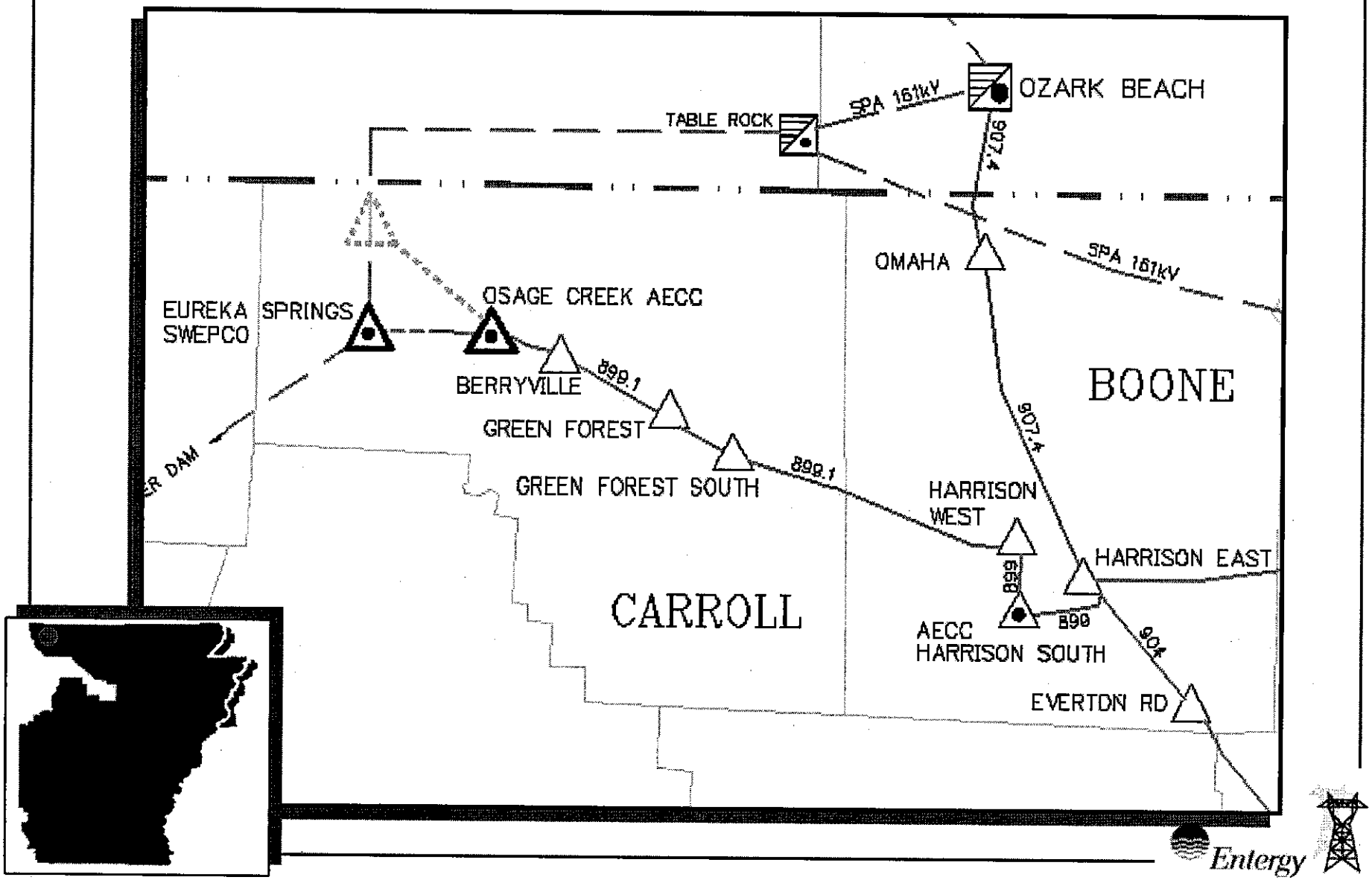
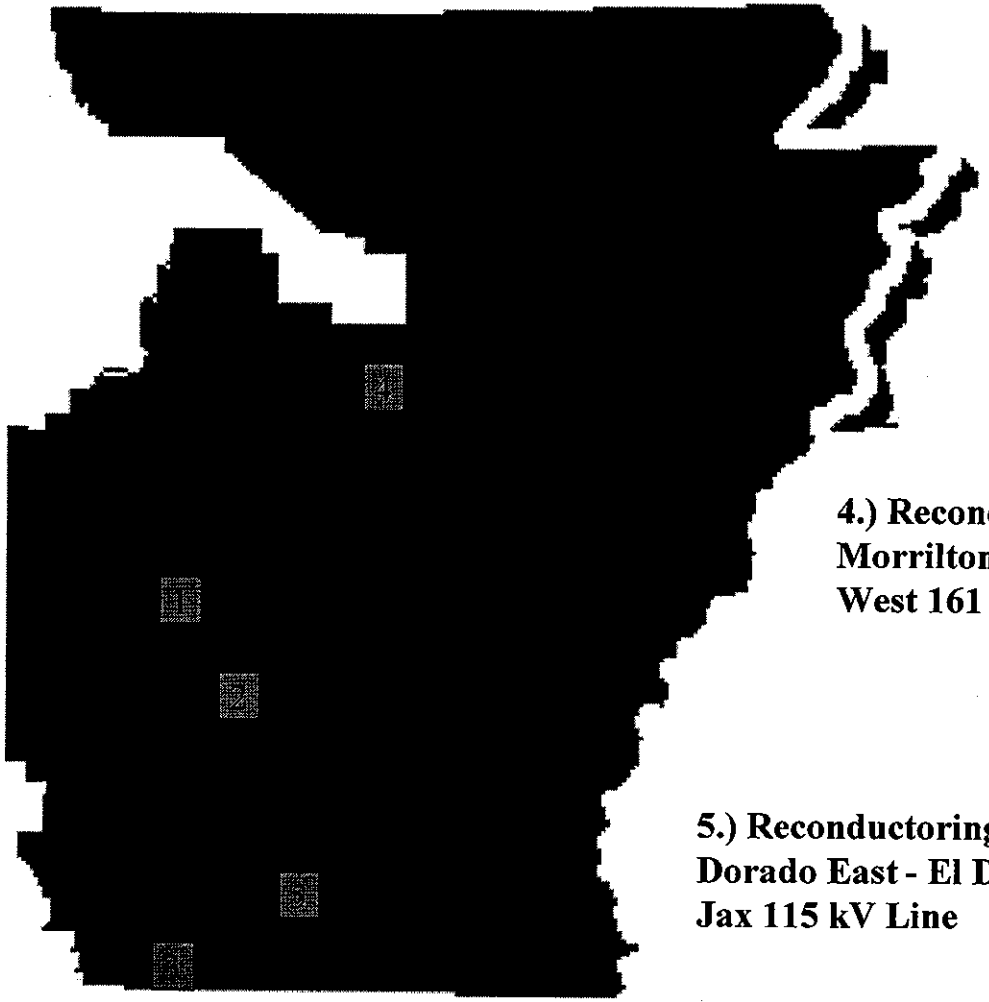
Osage Creek-Grandview



2007-2008 EAI Transmission Expansion Projects



1.) Reconductoring of Mountain Pine South - Blakely Dam 115 kV Line

2.) New 115 kV Line Construction from Gum Springs - Murfreesboro South

3.) Mohawk - New 345 / 115 kV Substation near Emerson OR Sarepta – New 345 / 115 Substation

4.) Reconductoring of Morrilton East - Conway West 161 kV Line

5.) Reconductoring of El Dorado East - El Dorado Jax 115 kV Line

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2006-07

345 / 115 kV Substation Construction (Mohawk) near Emerson

Scenario:

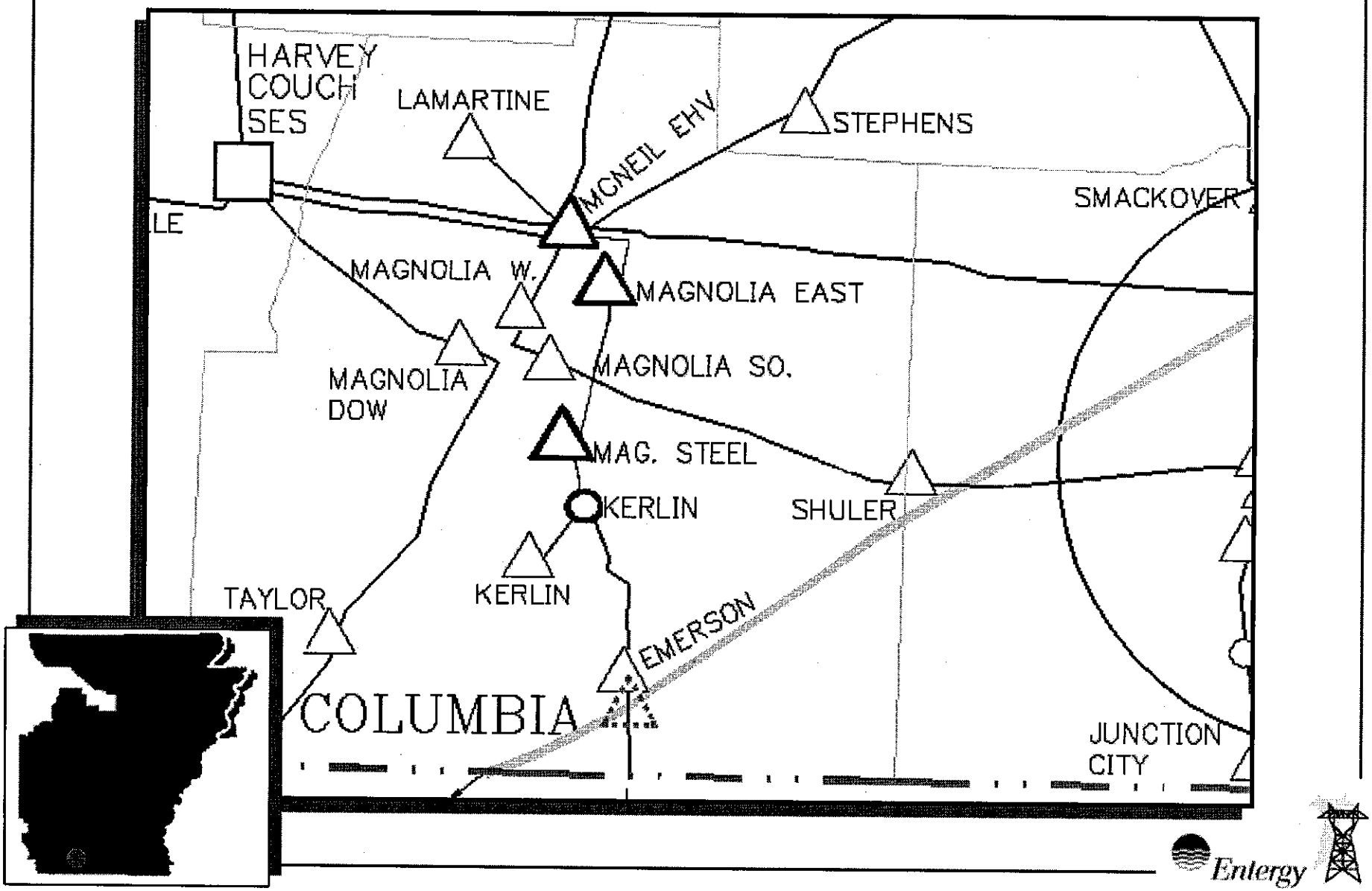
- The following single contingencies cause low voltage in the extreme southwestern corner of the EAI service territory:
  - Loss of the Magnolia East - McNeil line segment, 71 %.
  - Loss of the Magnolia Steel - Magnolia East line segment, 83 %.
  - Loss of the Magnolia Steel - Kerlin S.S. line segment, 85 %.
- Capacitor bank additions do not provide sufficient improvement to this region.
- The transmission grid performance can be improved by delivering a high voltage source into the Emerson area. Emerson resides very close to a 345 kV line from El Dorado to Longwood (AEP-West).

Proposed Solution:

- Construct a new substation as a tie between the two utilities.

Estimated Cost: $9.9 MM

Emerson Area



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2007

Blakely Dam - Mountain Pine South 115 kV Line Rebuild

Scenario:

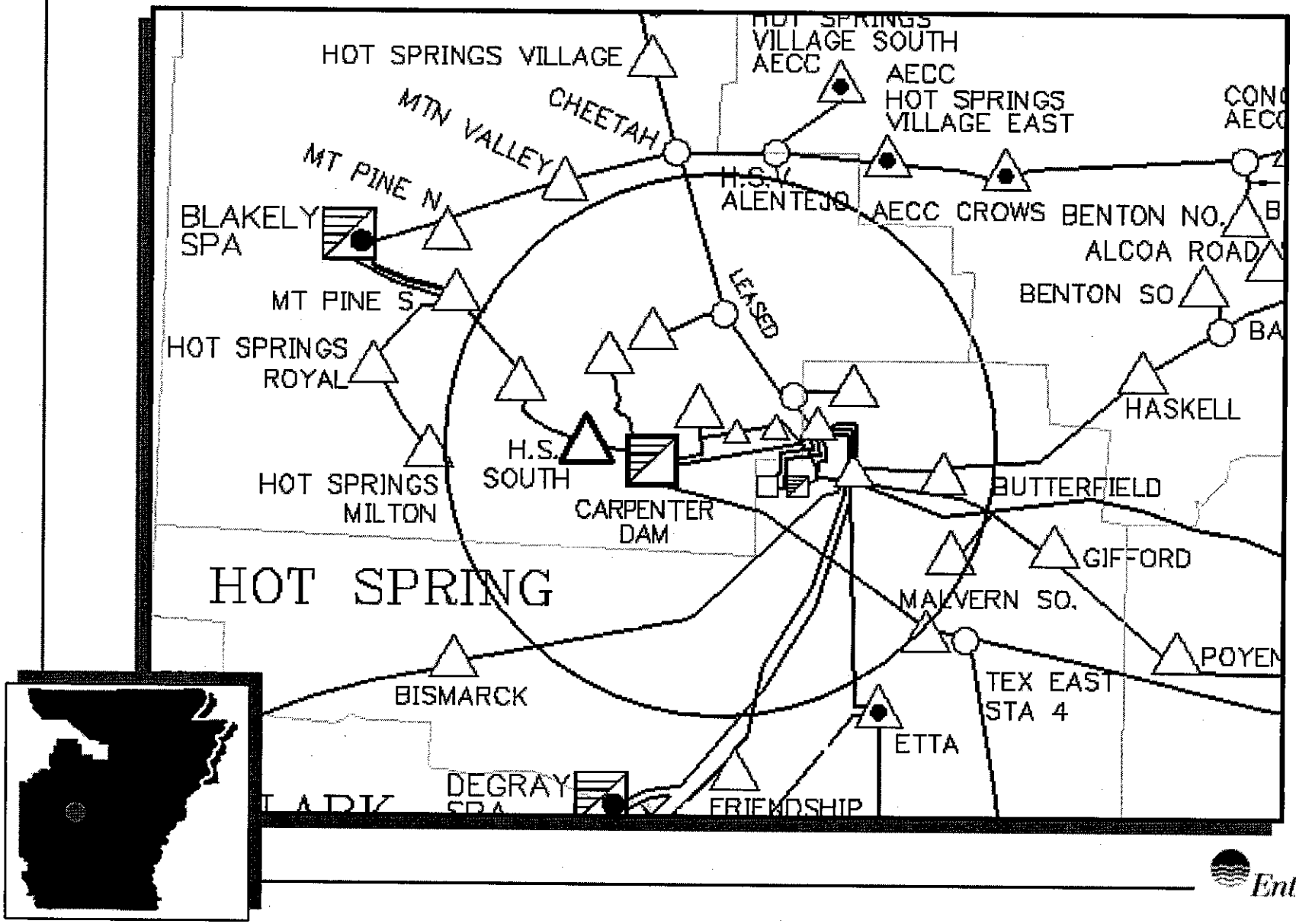
- The Blakely Dam – Mountain Pine South 115 kV line segment is 2.92 miles and consist of 666 ACSR conductor
- Loss of the Carpenter Dam - Hot Springs South 115 kV Line segment causes:
  - 18 % overload on the Mountain Pine - Blakely Dam segment
  - 89 % voltage at Hot Springs South
- Line switches at the Blakely Dam prevent any greater throughput through the SPA substation.

Proposed Solution:

- Upgrade the Blakely Dam – Mountain Pine South line segment to 1,272 ACSR and upgrade switches to 1,200 Amp.

Estimated Cost: $1.5 MM

Mountain Pine Area



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2007

El Dorado East - El Dorado Jax 115 kV Line Rebuild

Scenario:

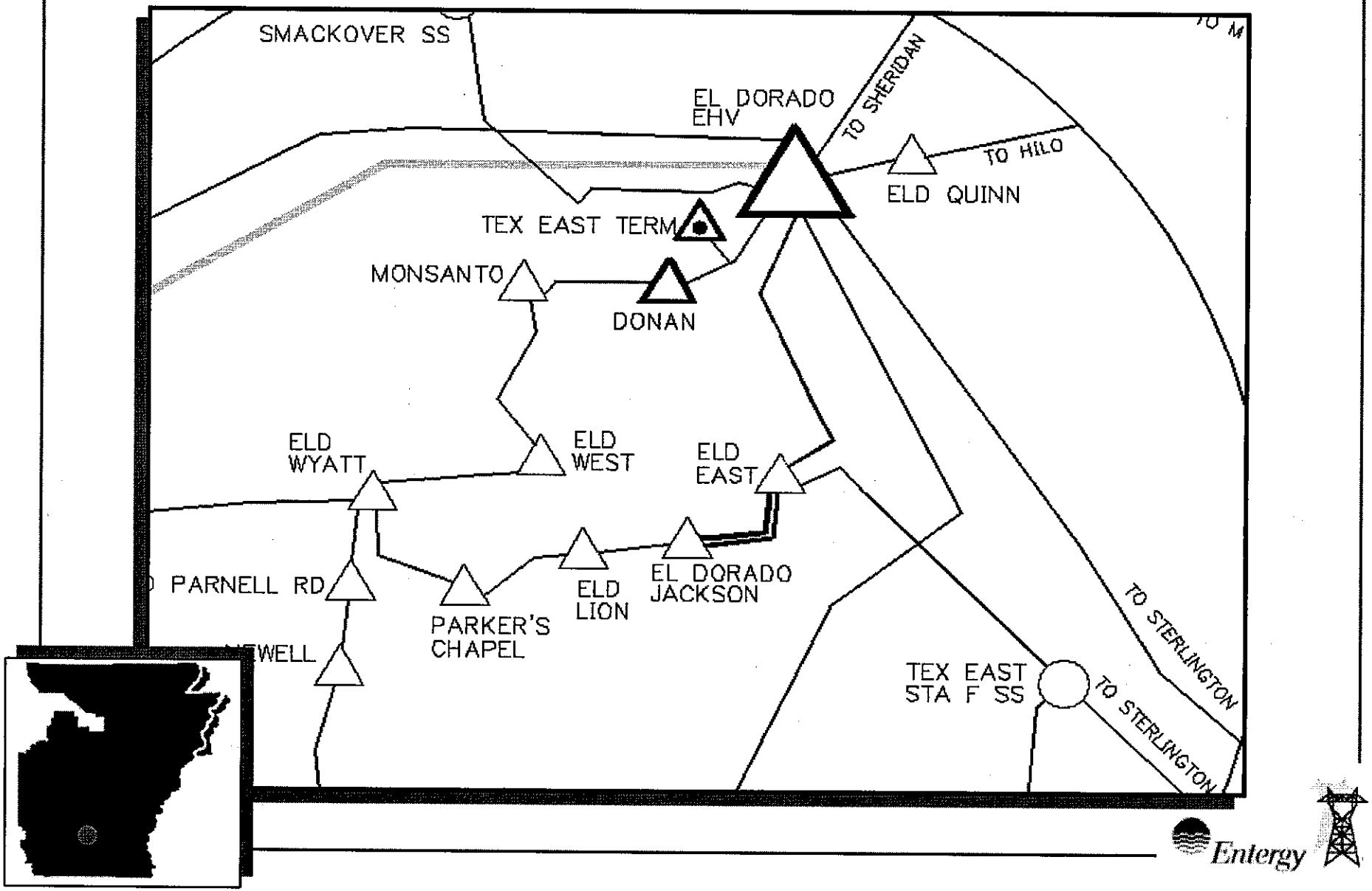
- The El Dorado East – El Dorado Jackson line segment is 2.95 miles long and constructed of 666 ACSR conductor.
- Loss of the El Dorado EHV - Texas Eastern El Dorado 115 kV line segment causes overload to the El Dorado East - El Dorado Jax segment (107%)
- Loss of the El Dorado Donan - Texas Eastern El Dorado 115 kV line segment also causes overload to the El Dorado East - El Dorado Jax segment (104%)

Proposed Solution:

- Rebuild line with 1,272 ACSR conductor and replace switch risers.

Estimated Cost: $1.5 MM

El Dorado Area



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2007-08

Morrilton East - Conway West 161 kV Line Rebuild

Scenario:

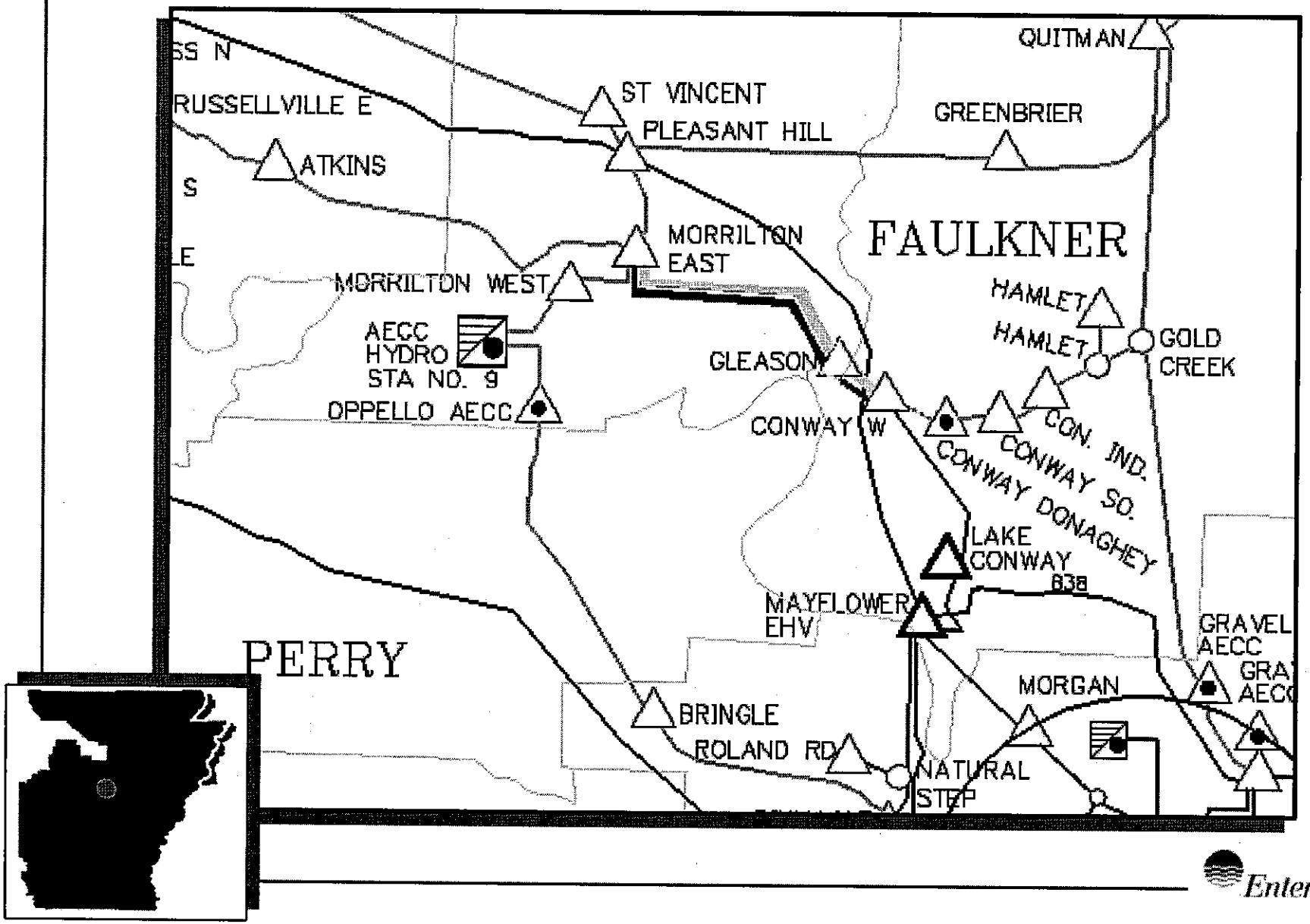
- The Morrilton East – Conway West 161 kV line is 15.35 miles long and is constructed of 666 ACSR conductor
- Loss of the Lake Conway - Mayflower 115 kV line segment causes overload to the Morrilton East - Gleason 161 kV line segment (109%) and the Gleason - Conway West 116 kV line segment (102%)
- Loss of the Conway West - Lake Conway line segment and the Conway West 161 / 115 kV line segment cause smaller overloads

Proposed Solution:

- Rebuild the Morrilton East - Conway West 161 kV line segment using 1,272 ASCR.

Estimated Cost: $6.2 MM

Conway Area



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2008

New Switching Station (Gum Springs) and New 115 kV Line Construction

Scenario:

- The Woodward - Degray 115 kV transmission line crosses the Friendship - Couch 115 kV transmission line near Curtis, between Arkadelphia and Richwoods.
- Tying the two lines together would provide additional operational flexibility in the region south of Hot Springs and Little Rock.
- The new switching station would reduce the exposure to single contingency voltage problems for several substations along both existing transmission lines.
- There are low voltages in the Murfreesboro South region under single contingency scenarios.

Proposed Solution:

- Build a switching station (Gum Springs) at the intersection of the Woodward-Degray line and the Friendship-Couch line. Construct a new 115 kV line from Gum Springs to Murfreesboro South using 1,272 ASCR.

Estimated Cost: $9 MM

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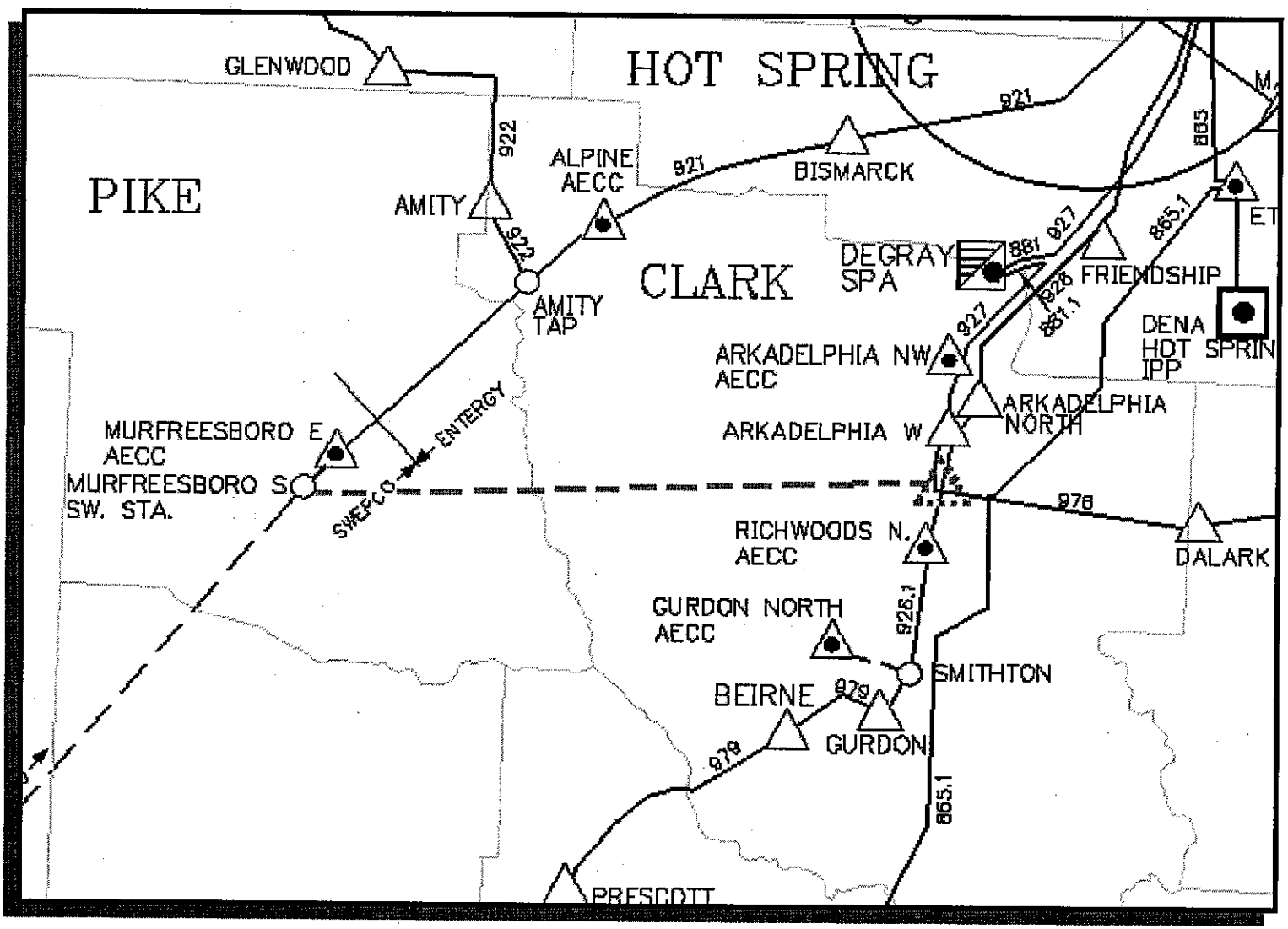
Curtis Area



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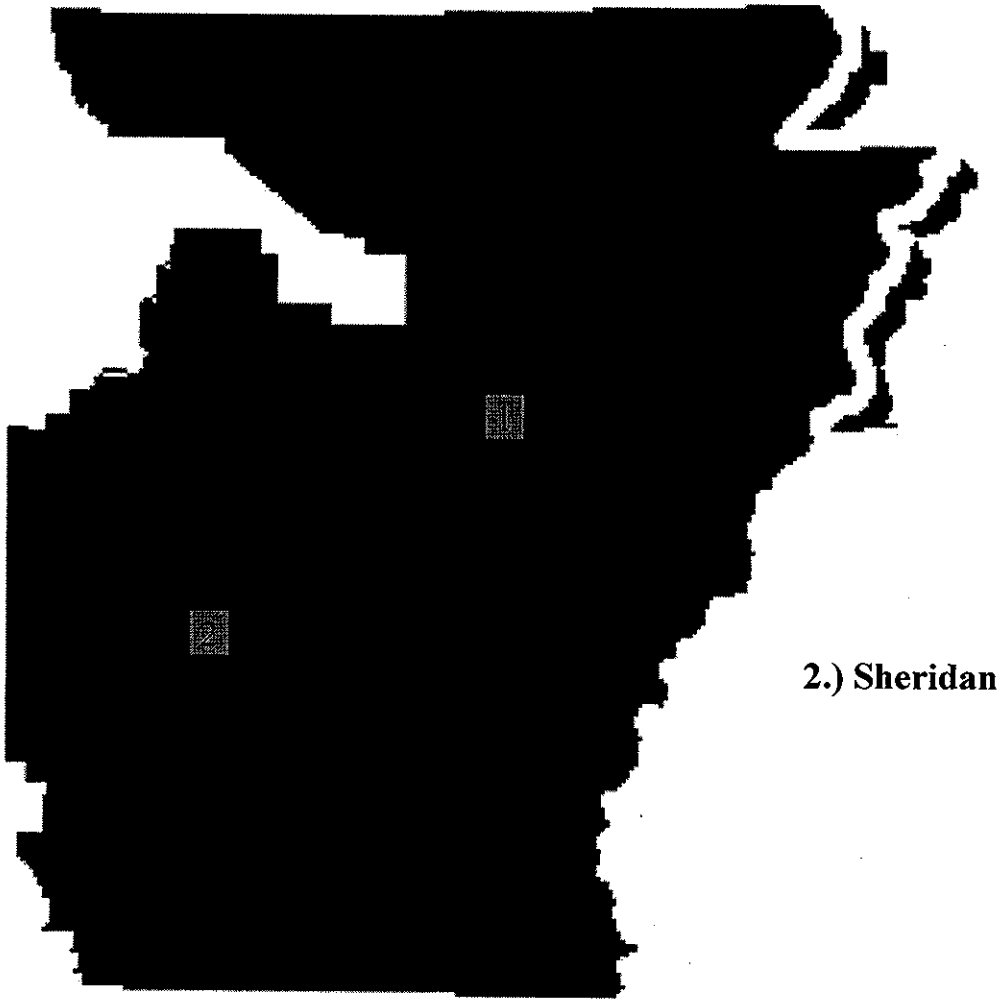
Transmission System Target Areas
2009 and Beyond



1.) Little Rock Area

2.) Sheridan South

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Questions

Entergy Gulf States, Inc. (Louisiana)

Proposed Transmission Reliability Projects

Entergy Transmission Planning Summit

New Orleans, LA

July 8, 2004

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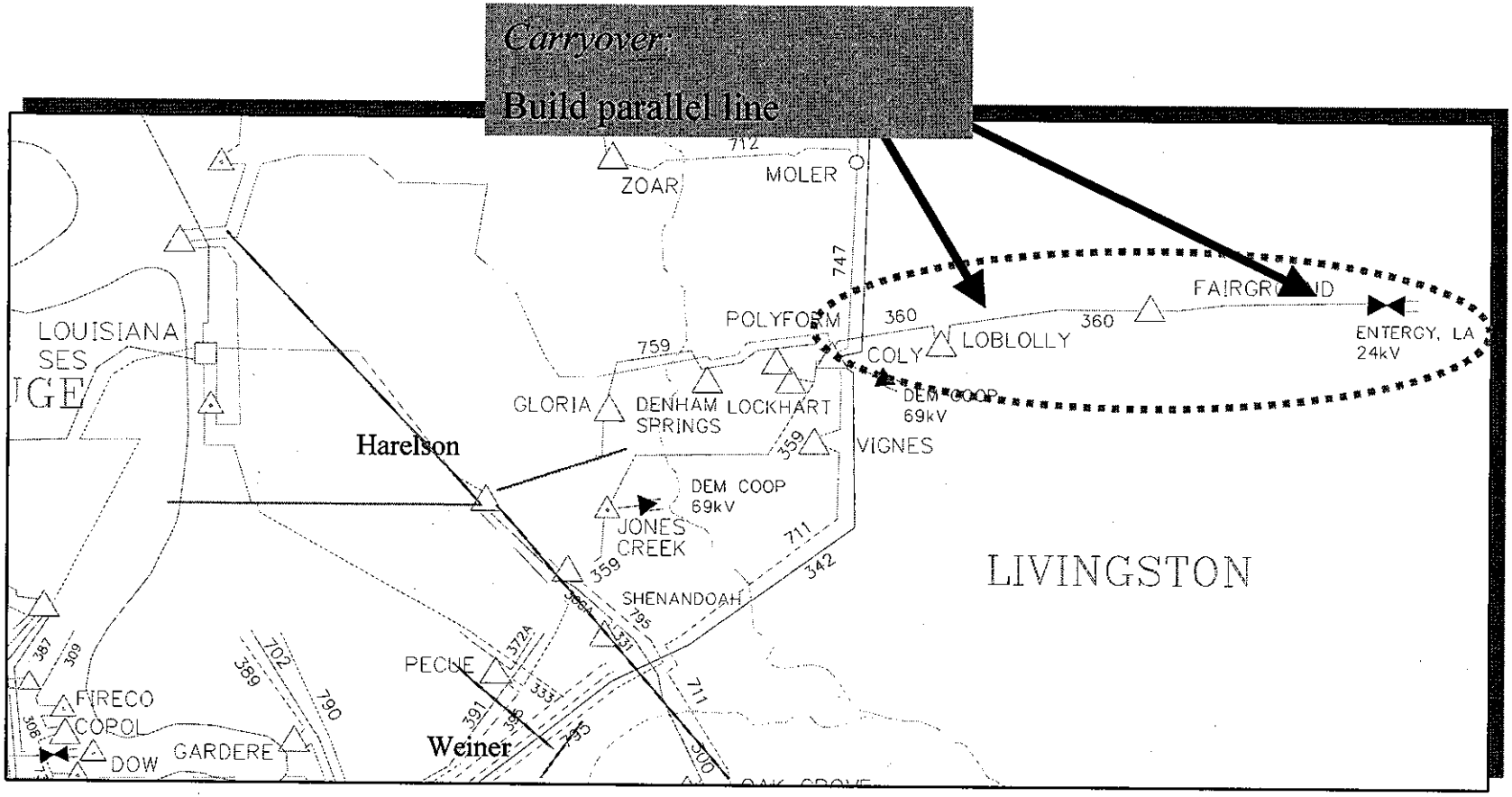
Coly-Loblolly-Hammond Line Construction



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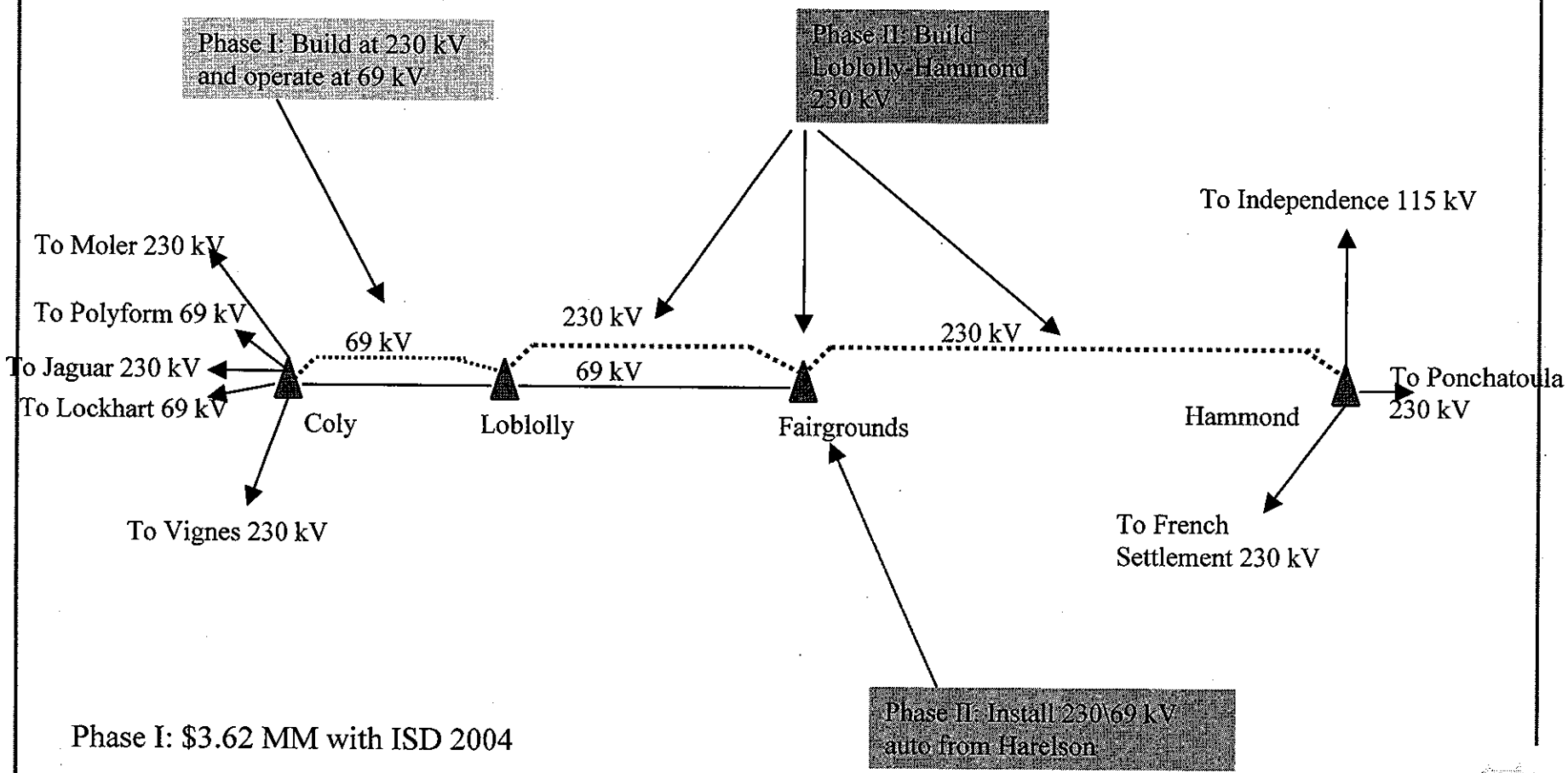
Coly-Loblolly-Hammond Line Construction



Phase I: $3.62 MM with ISD 2004

Phase II: $11.4 MM with ISD 2007

See ELI-South Presentation for Phase II details

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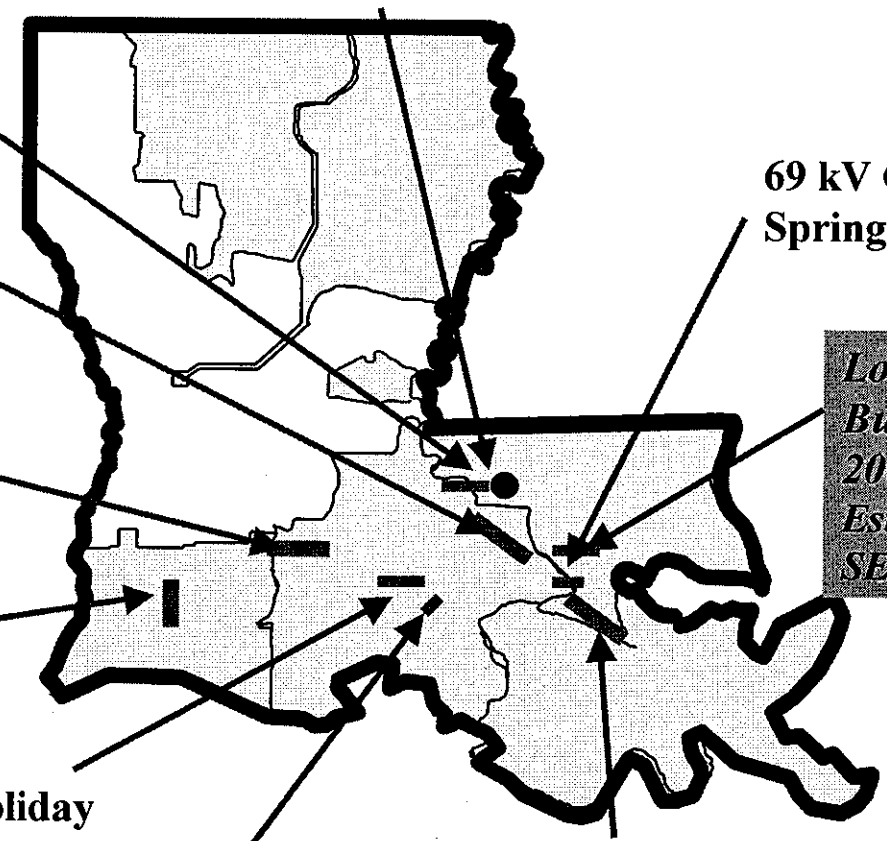
2005-06 EGSI-LA Transmission Reliability Projects



cManus 69 kV:
Capacitor Bank Addition

69 kV Jackson- Marydale
Line Upgrade

138 kV Port Hudson-
Crown Zellerbach Line
upgrade: Phase 2

Jefferson Davis Parish
69 kV System
Improvement Plan

138 kV Nelson-
Mossville: Upgrade line

69 kV Lafayette-Holiday
Line Upgrade

138 kV Moril-Hopkins:
Construct new line

69 kV Coly-Denham
Springs: Upgrade Line

Loblolly-Hammond:
Build 230kV line
2007 ISD
Est. Cost: $3 MM (R.O.W.)
SEE ELI Presentation

ASI Improvement Plan:
Conway-Panama (2005 ISD) Carryover
Coly-Vignes (2006 ISD)
SEE ELI Presentation

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2004-05

138 kV Line 368 Port Hudson-Crown Zellerbach: Upgrade Line

Scenario

- **The 138 kV substations Star Hill, Crown Zellerbach, and Repapco in East Baton Rouge and East Feliciana Parishes are served by 2-230/138 kV autotransformers located at Port Hudson substation. This industrial loop serves approximately 207 MVA with the Repapco cogeneration out-of-service.**

- **Under peak loading conditions, loss of the Repapco-Port Hudson line can potentially overload Line 368 (Port Hudson-Crown Zellerbach) by as much as 25% in 2004, that portion of line composed of 795 AA and rated at 174 MVA**

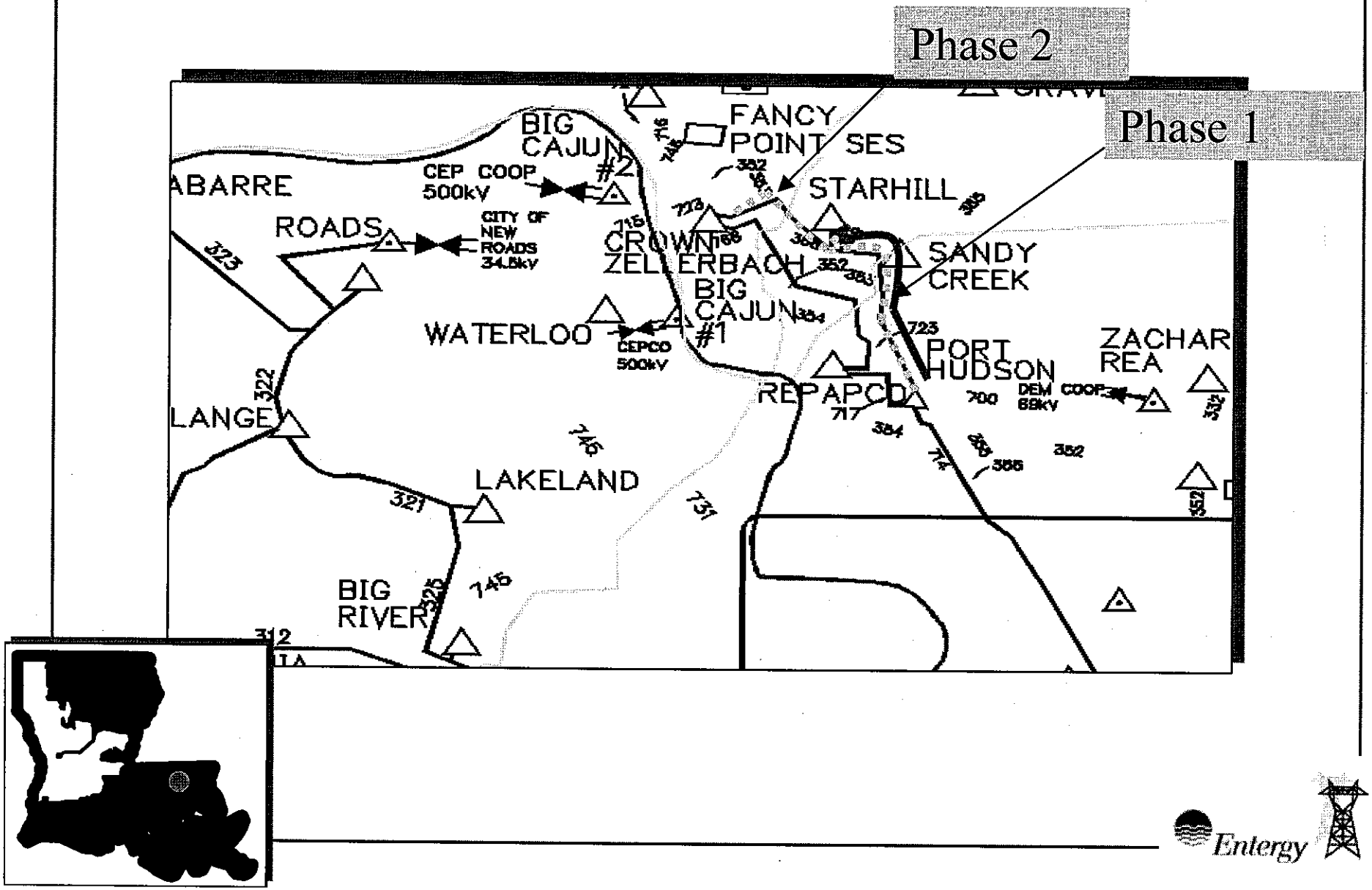
Recommended Solution

- **Complete 2nd phase of reconductoring 7.5 miles of Line 368 with a conductor capable of at least 301 MVA or 1,260 A.**

- **Estimated Cost: $5.5 MM**

2005

138kV Line 368 Port Hudson-Crown Zellerbach



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69kV Jackson-Marydale: Upgrade Line

2006

Scenario

- **The 69 kV system serving loads north of Baton Rouge in East and West Feliciana Parishes is supported by two 69 kV lines out of Port Hudson substation. This is a rural service area with long distances between substations on two divergent radial circuits. This 69 kV system will serve approximately 70 MW in summer 2004 and 71 MW in 2005.**

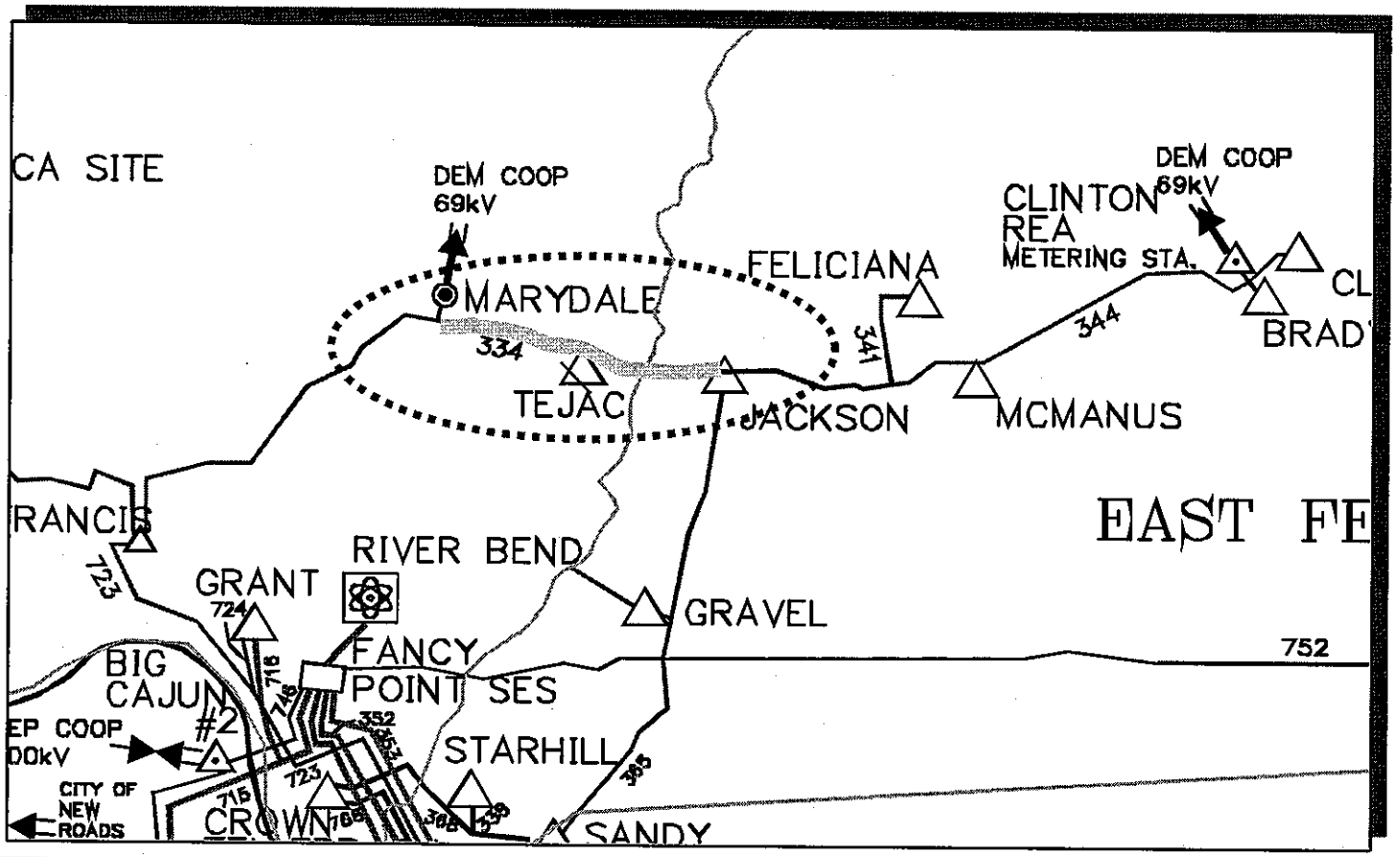
- **Loss of Port Hudson to Sandy Creek to Jackson or Francis to Grant to Port Hudson will overload Jackson-Marydale by 17%.**

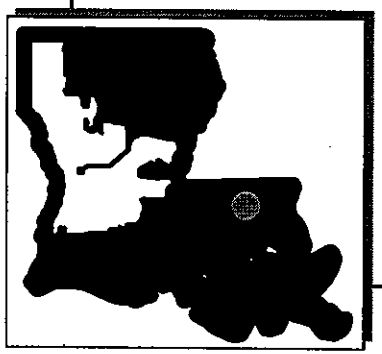
Recommended Solution

- **Replace 5.89 miles of existing 1/0 ACSR conductor with 336 ACSR. Replace all structures and conductor as needed. The reconductor will increase line capacity from 33 MVA to 69 MVA.**

- **Estimated Cost: $1.43 MM**

69 kV Jackson-Marydale





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2006

McManus 69kV Substation: Replace Cap Bank & Correct Load Power Factor

Scenario:

- **McManus 69 kV Substation is located north of Baton Rouge in East Feliciana Parish near the end of a 12 mile radial 69 kV line. There will be approximately 70 MW of load in the area in 2005.**

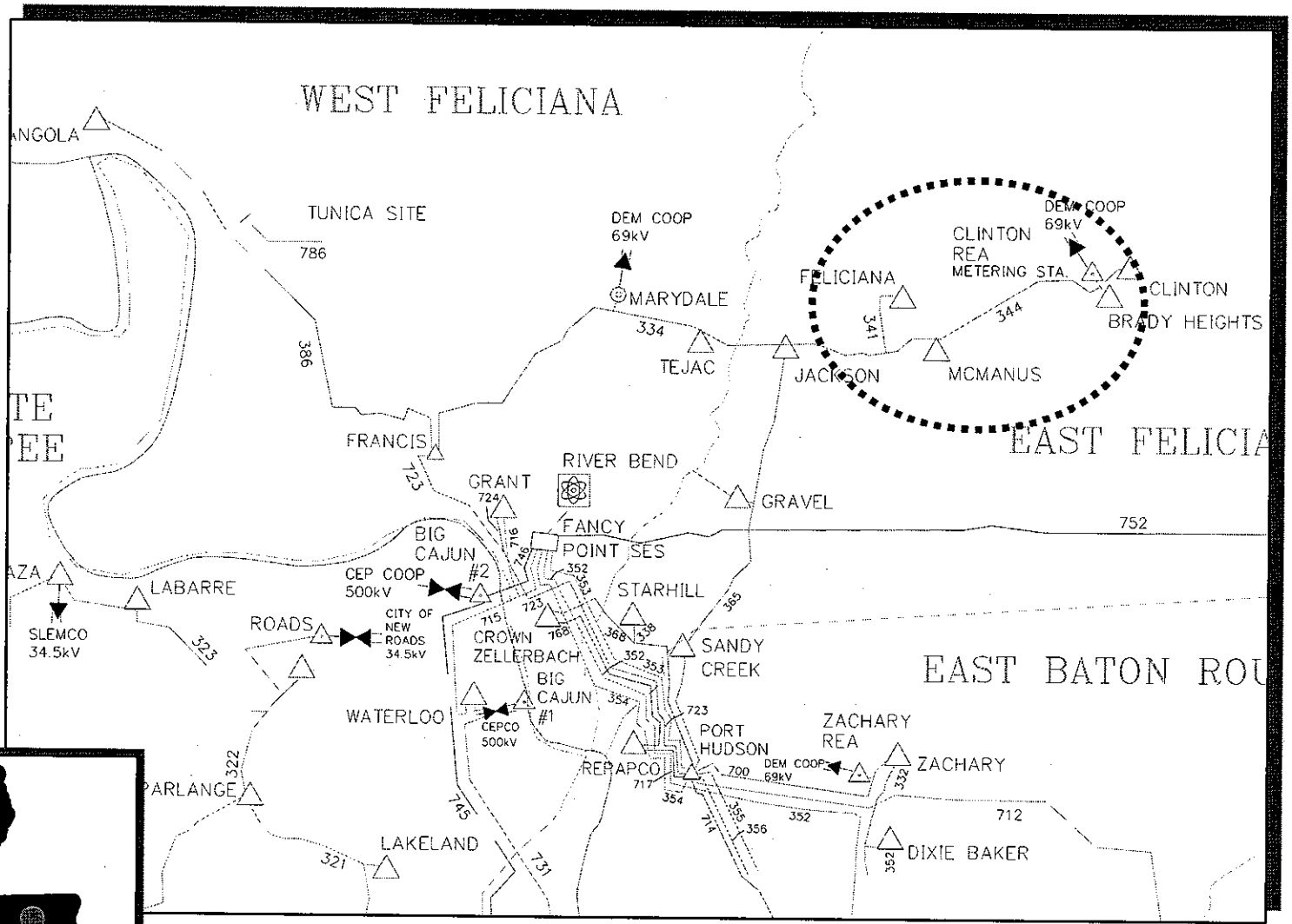
- **Loss of Port Hudson to Jackson 69 kV will cause voltages less than 90% at multiple substations in East Feliciana Parish.**

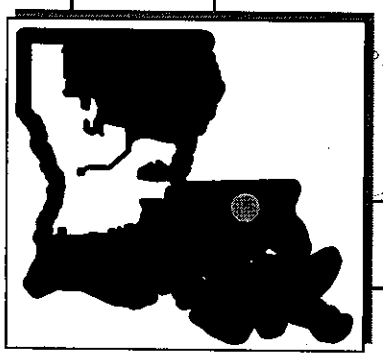
Recommended Solution:

- **Install a 6 MVAr capacitor bank at McManus substation for contingencies only. The existing 18 MVAR bank at McManus should be on-line during summer peak.**

- **Estimated Cost: $550 K**

McManus 69kV Substation





Entergy

69 kV Coly-Denham Springs: Upgrade Line

2005-06

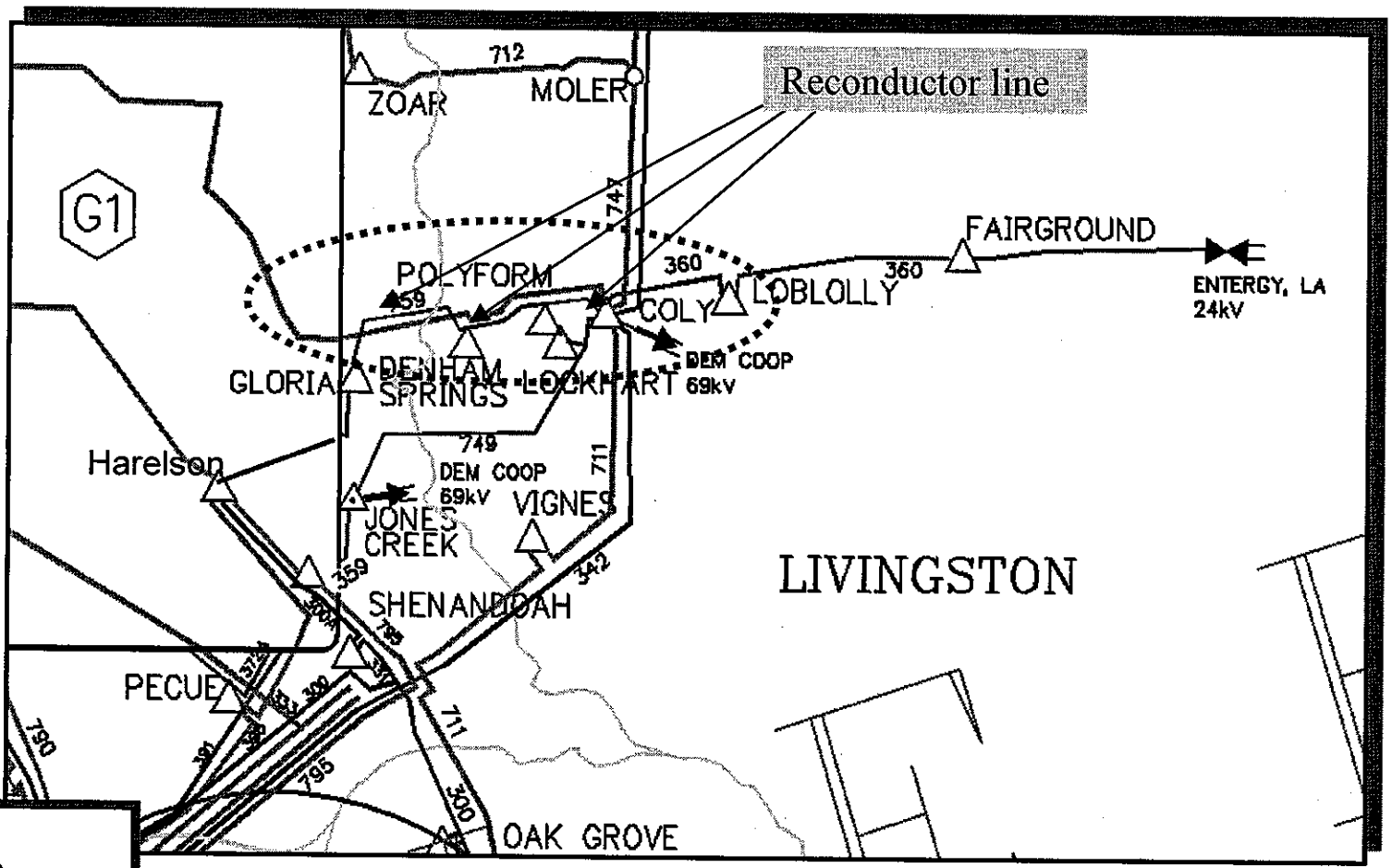
Scenario

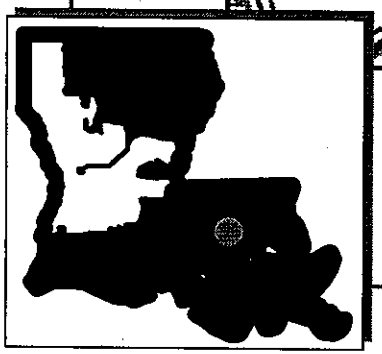
- **There is approximately 67 MW of load on the affected 69 kV transmission line.**
- **For the loss of Gloria-Harelson 69 kV line, the Coly-Polyform-Denham Springs line overloads by 12% in summer 2005.**

Recommended Solution:

- **Replace 4.37 miles of a mix of 500 Cu, 1033 AA, and 1024 ACAR with twin bundle 666 ACSR or conductor rated at least 180 MVA (1,500 amps).**
- **Estimated cost: $2.1 MM**

69 kV Coly-Denham Springs Line 759





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Jefferson Davis Parish
69 kV System Improvement Plan

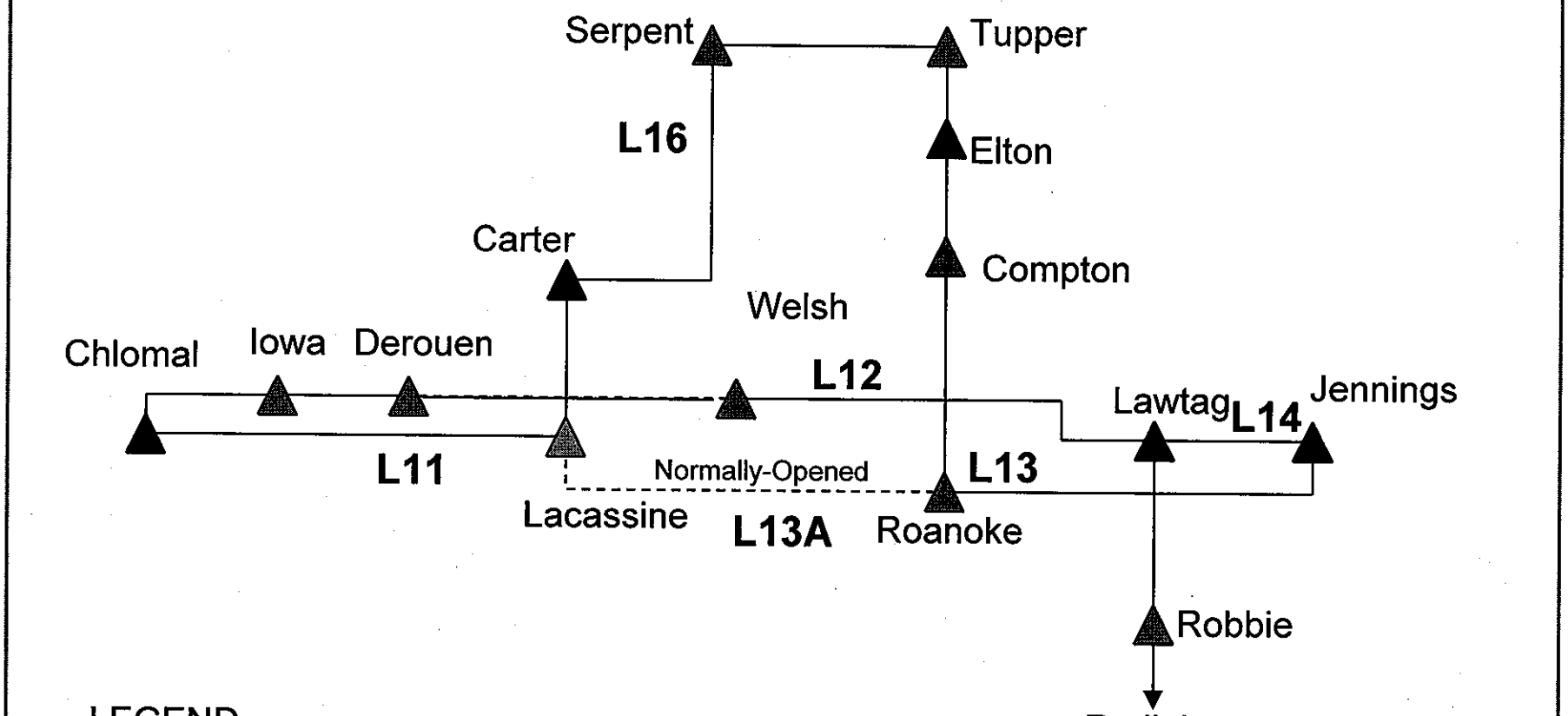
Scenario:

- **The 69 kV transmission system between Jennings and Chlomal substations will serve approximately 85 MW of load including the radial from Lawtag substation in 2005. The main "trunk" of these systems are the contiguous segments comprising of Line 13 (Jennings-Compton-Elton), Line 16 (Elton-Tupper-Serpent-Carter), and Line 11 (Carter-Lacassine-Chlomal).**

- **As an indication of load growth in this area, a new 25 MVA transformer was added in 2004 at Lacassine Substation.**

- **Splices have been used to make repairs and they are beginning to fail. The current loading can potentially cause the 69kV lines to sag into the distribution underbuild that is located along most of these lines. Upgrading these lines is needed to address safety and reliability concerns.**

Existing Configuration of Lines 11, 12, 13, 14



Entergy

Jefferson Davis Parish
69 kV System Improvement Plan

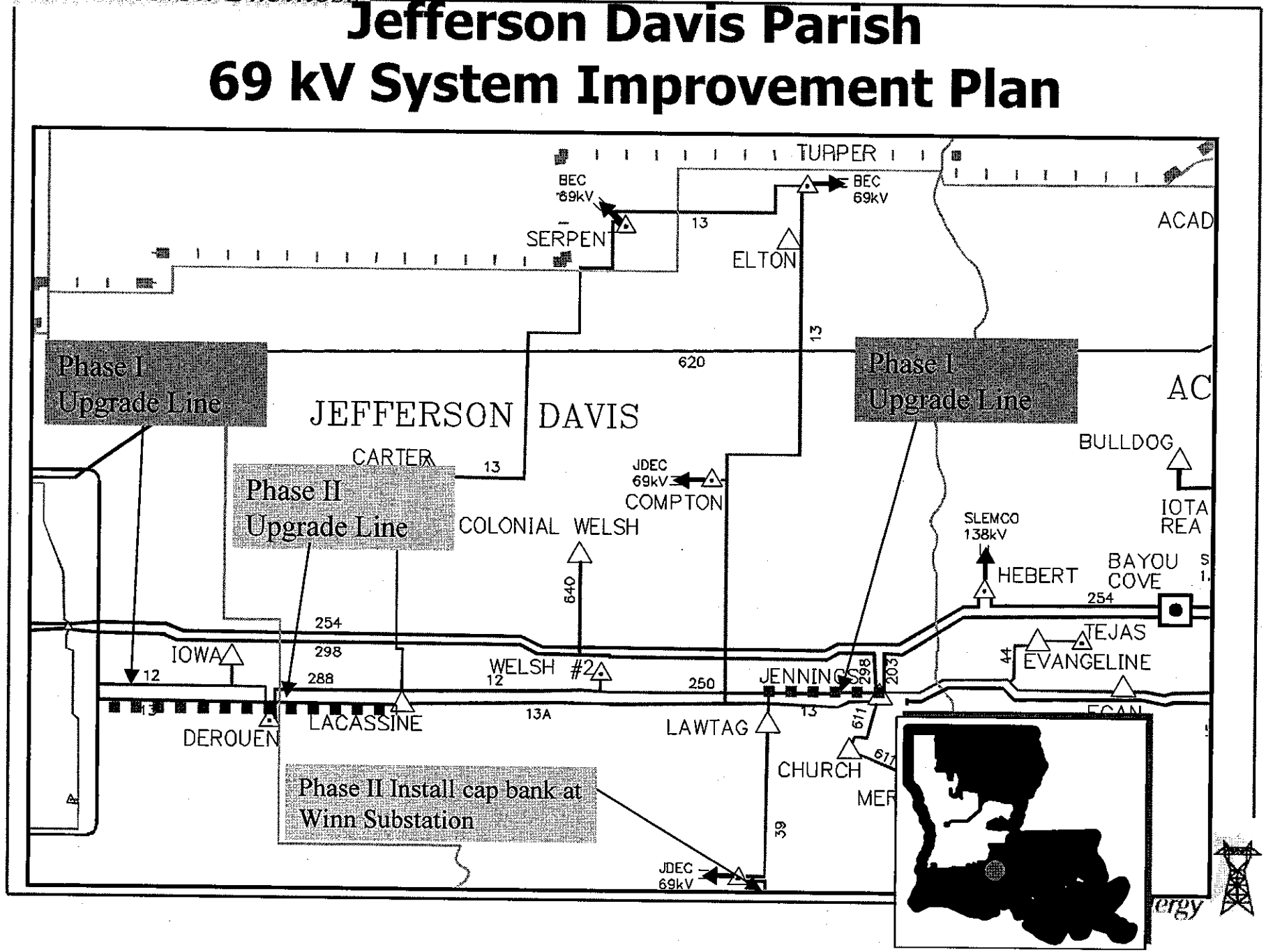
Contingency	Overload/Undervoltage
Loss of Jennings-Lawtag	Chlomal-Iowa 20%
Loss of Elton-Jennings	Chlomal-Lacassine 28%
	LC Bulk-Chlomal 6%
Loss of Chlomal-Carter	Compton-Jennings 5%
Loss of Lawtag-Jennings	Robbie, Winn, Texlake
	Potter < 0.915 p.u.
Loss of Richard-Nelson 500	Lawtag-Jennings 22%

- **Recommended Solution:**
  - ***Phase I:*** **Upgrade 3.07 miles of 795 AA from Lake Charles Bulk to Chlomal. Upgrade 4.78 miles 4/0 CU from Jennings-Lawtag with a conductor rated at least 101 MVA of capacity. Install breaker at Lacassine.**
  - ***Phase II*** **Upgrade 12.36 miles 1/0 ACSR of Chlomal-Lacassine to a conductor with at least 101 MVA of capacity. Install a 9MVAR capacitor at Winn Substation.**
- **Estimated cost:** **Phase I $3.7 MM**
  Phase II $6.3 MM

Entergy

Transmission Business

Jefferson Davis Parish
69 kV System Improvement Plan



69 kV Lafayette-Holiday: Upgrade Line

Scenario:

- **There is approximately 141 MW of load in the area. Lafayette-Holiday-Billeaud line is currently rated at 39 MVA. In fall 2002, a breaker was installed at Billeaud, a normally-opened point, allowing it to be normally-closed. In summer 2007, Lafayette-Holiday is expected to load to 101% under normal operations.**

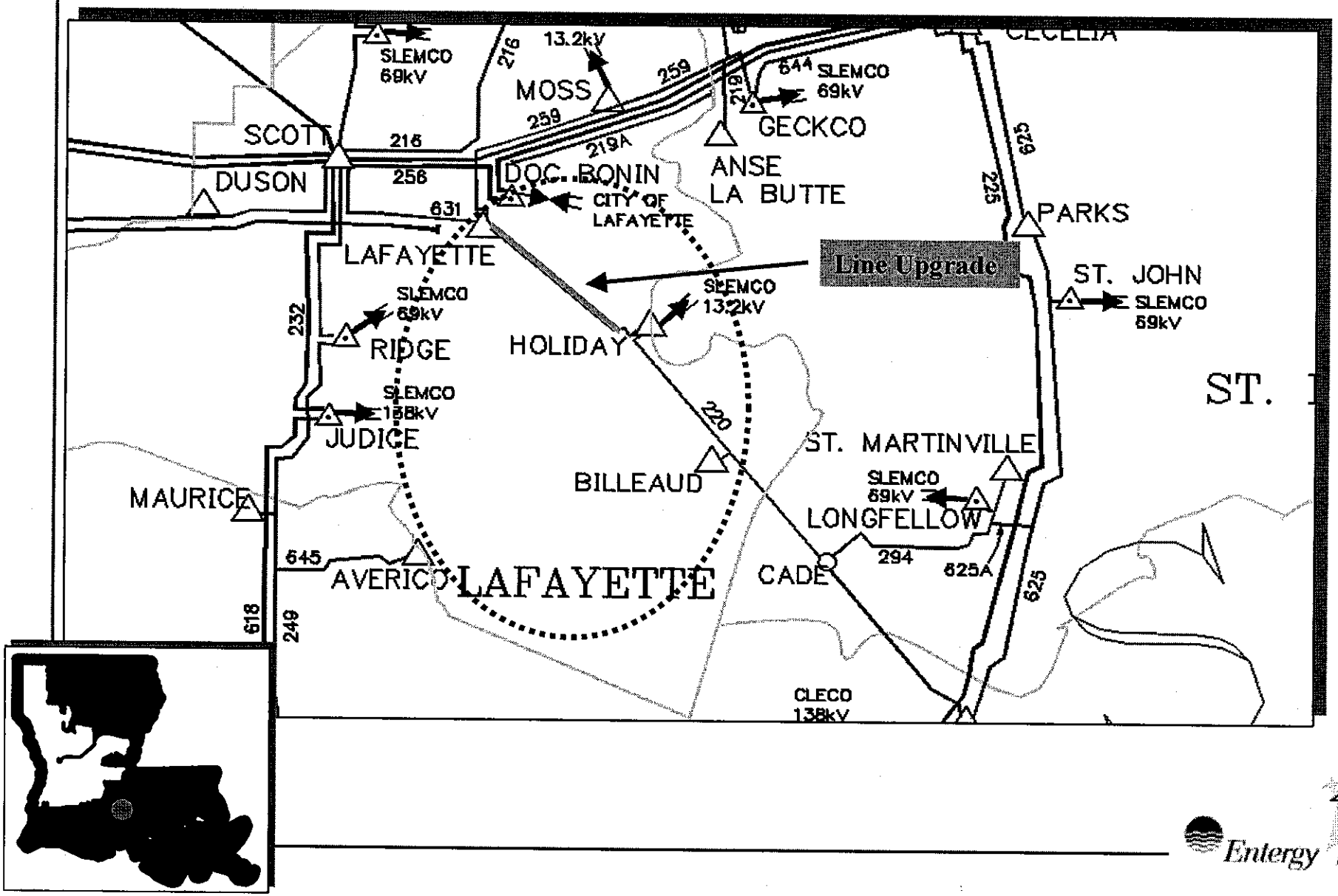
- **Loss of Moril 138/69 kV auto causes a 19% overload and loss of Moril-New Iberia 69 kV line causes an overload of 14% on Lafayette-Holiday in Summer 2005.**

Recommended Solution:

- **Replace 4.89 miles of 1- 4/0 Cu with 1-336 ACSR or conductor that achieves at least 68 MVA (or 569 amps) capacity.**

- **Estimated Cost: $2.23 MM**

69 kV Lafayette-Holiday Line Upgrade



Entergy

138 kV Moril-Hopkins (Cleco): Construct Parallel Line

Scenario

- **The Iberia and Vermillion Parish area's 69 kV transmission system is served from Scott Bulk (via Richard 138 kV lines) and the two 138 kV tie-lines (Moril-Hopkins and Ivanhoe-Bayou Warehouse) with CLECO. The area load is approximately 168 MW.**

- **For the loss of Moril-Hopkins, Duboin-Bayou Warehouse overloads by 13%.**

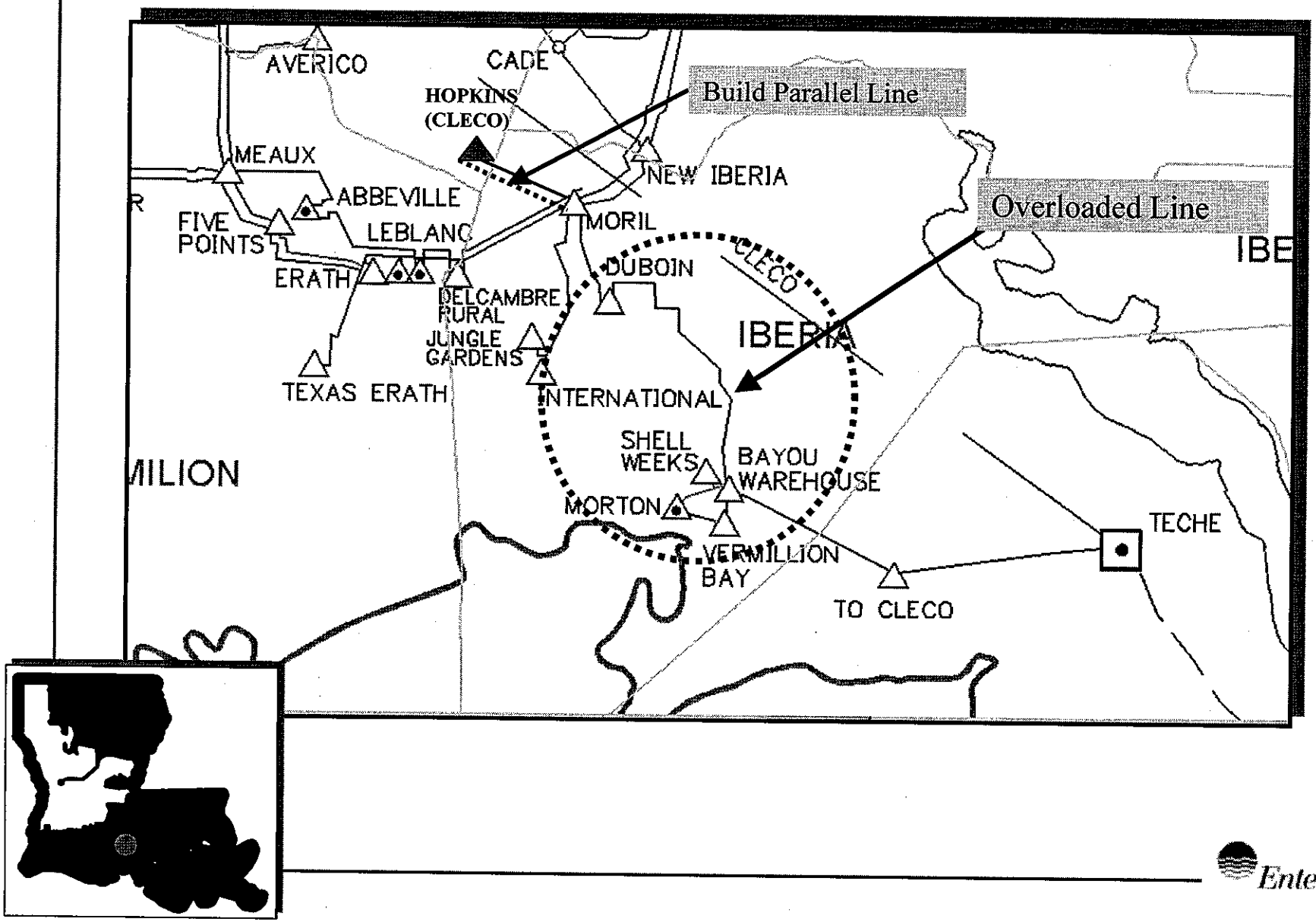
Recommended Solution

- **Build new parallel line from Moril to Hopkins 2.56 miles with a conductor that achieves at least 290 MVA (1,205 amps) capacity.**

- **Estimated cost: $2.5 MM**

Note: Requires joint planning with CLECO

138 kV Moril-Hopkins (Cleco)



Entergy

138 kV Nelson-Mossville: Upgrade Line

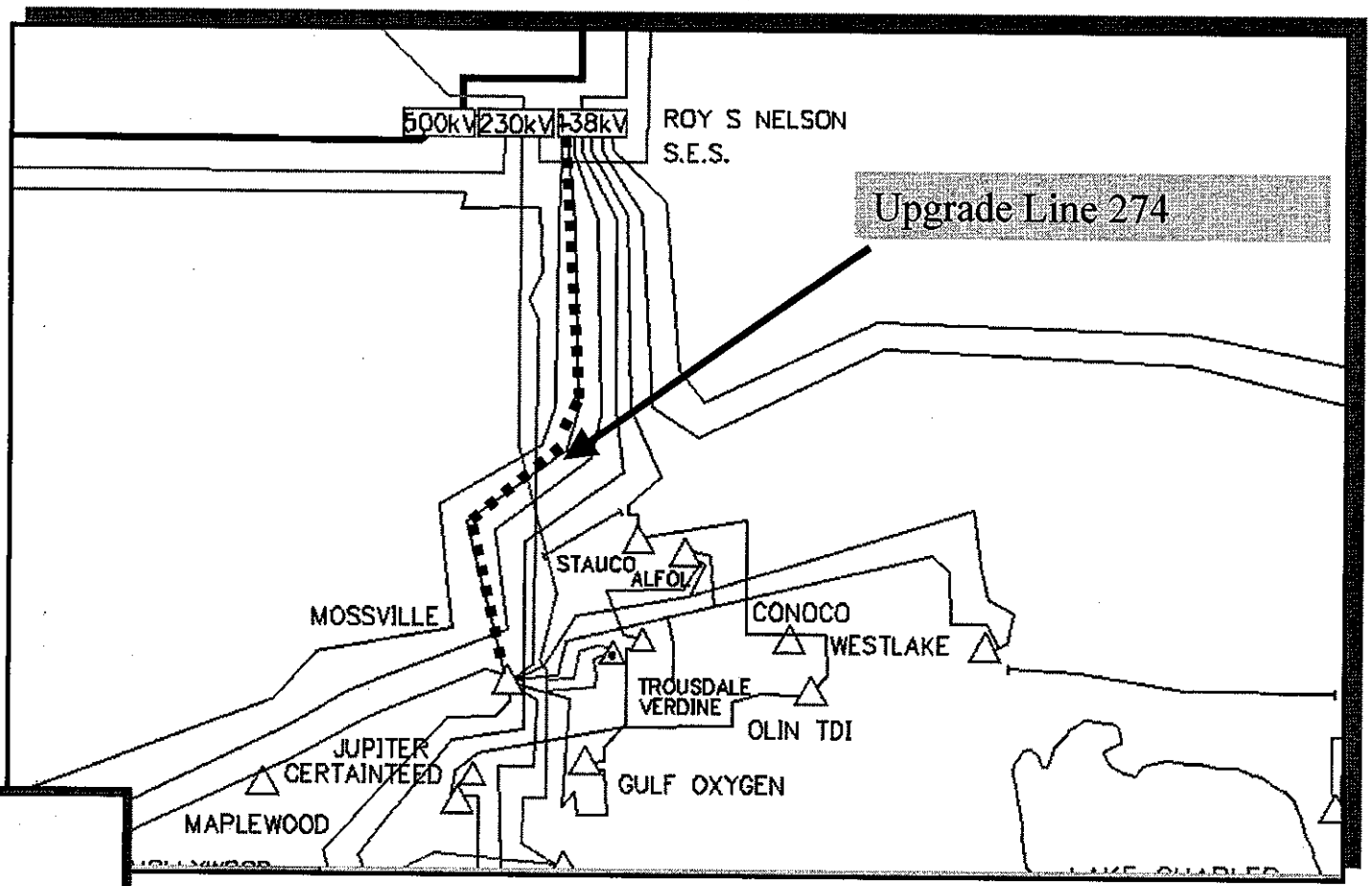
Scenario:

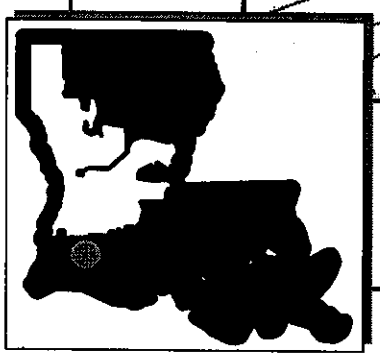
- **The 138 kV transmission system in the Lake Charles area serves large industrial loads and commercial & residential loads. The affected area load is approximately 200 MW.**
  - **For the loss of Carlyss-Citicon West, Nelson-Mossville overloads by 3% in 2005 and 6% in summer 2006.**

Recommended Solution:

- **Reconductor 3.28 miles of 1-1033 AA with conductor with at least 333 MVA capacity or 1,590 ACSR.**
- **Estimated cost: $1.7 MM**

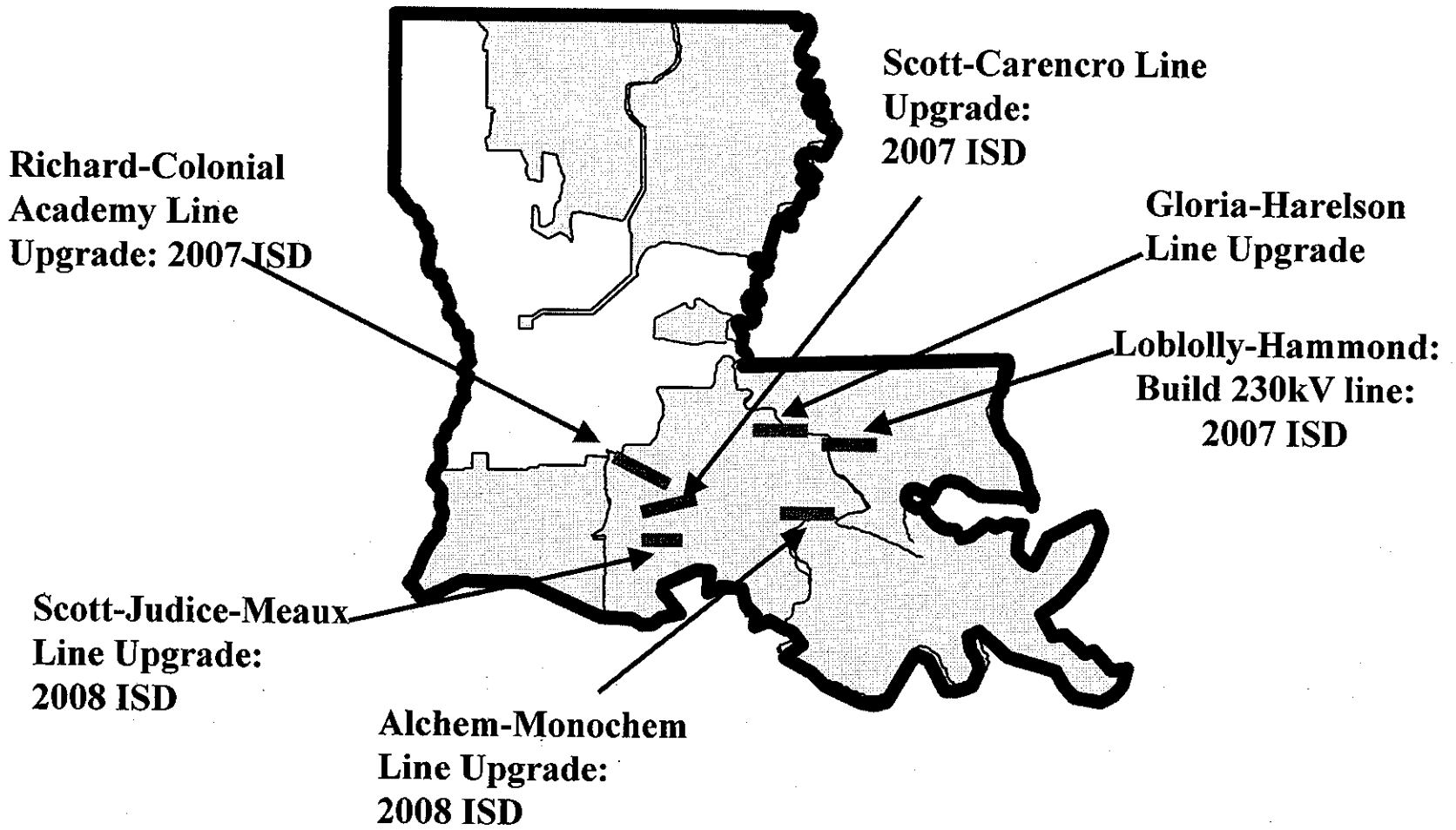
138 kV Nelson-Mossville





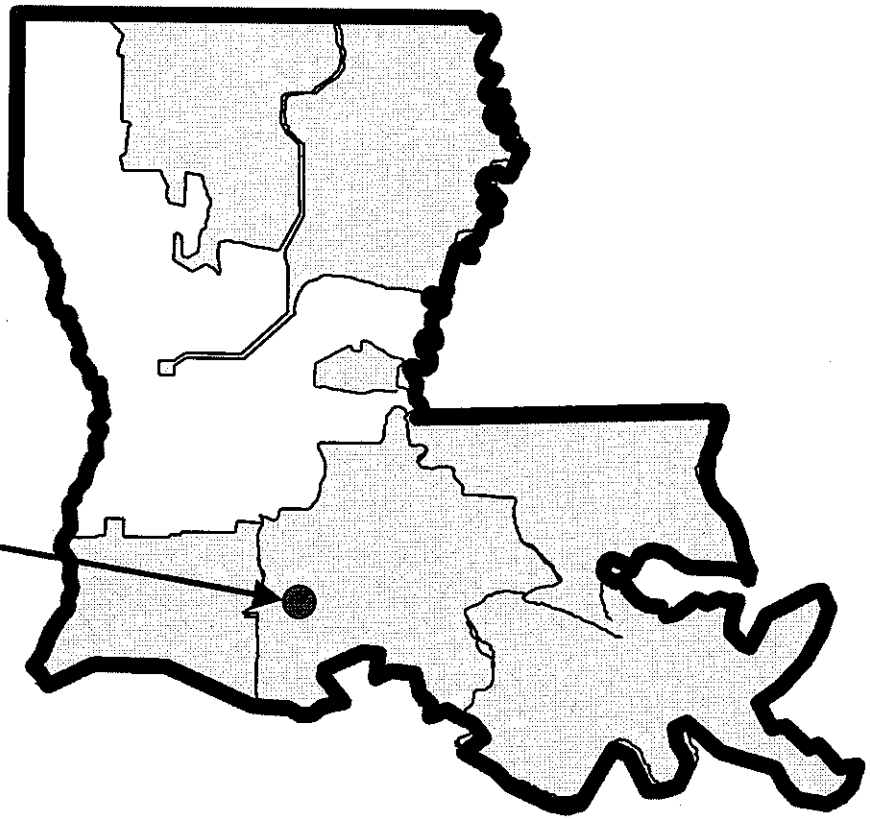
Entergy

2007-08 EGSI-LA Transmission Expansion Projects



Entergy

EGSI-LA Transmission Target Areas 2009 and Beyond



Add 3rd 138/69 kV Scott Auto 100 MVA: 2009 ISD

Entergy

Questions

Entergy Gulf States, Inc. (Texas)

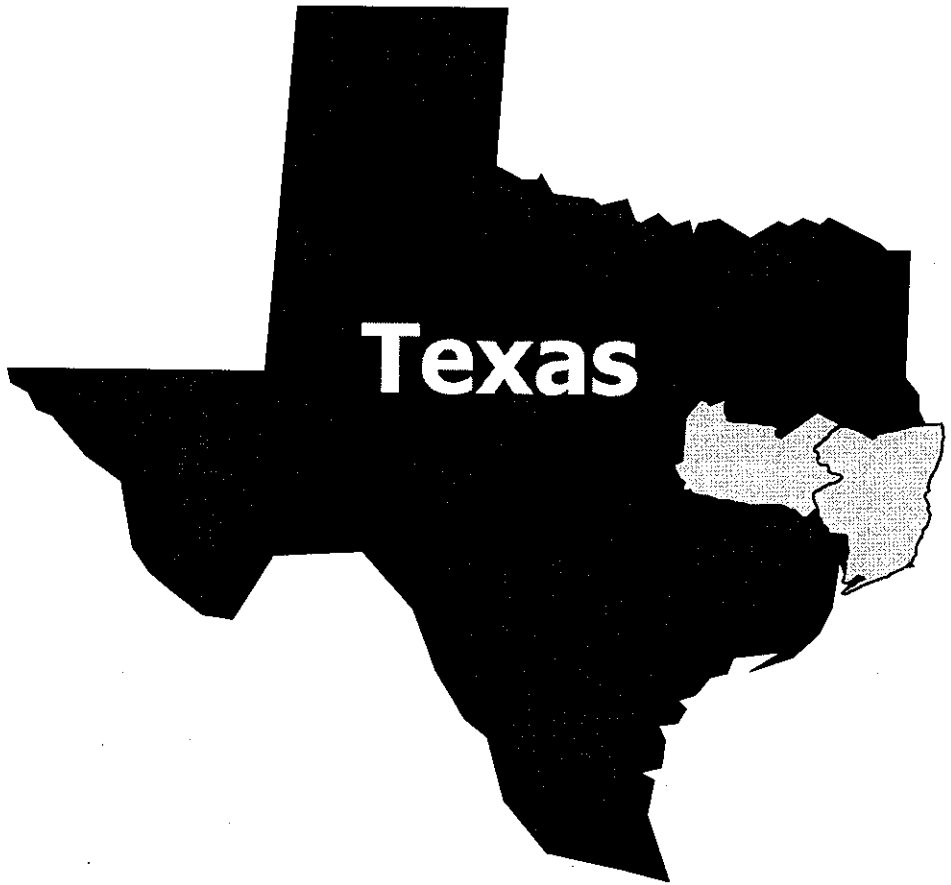
Proposed Transmission Reliability Projects

Entergy Transmission Planning Summit

New Orleans, LA

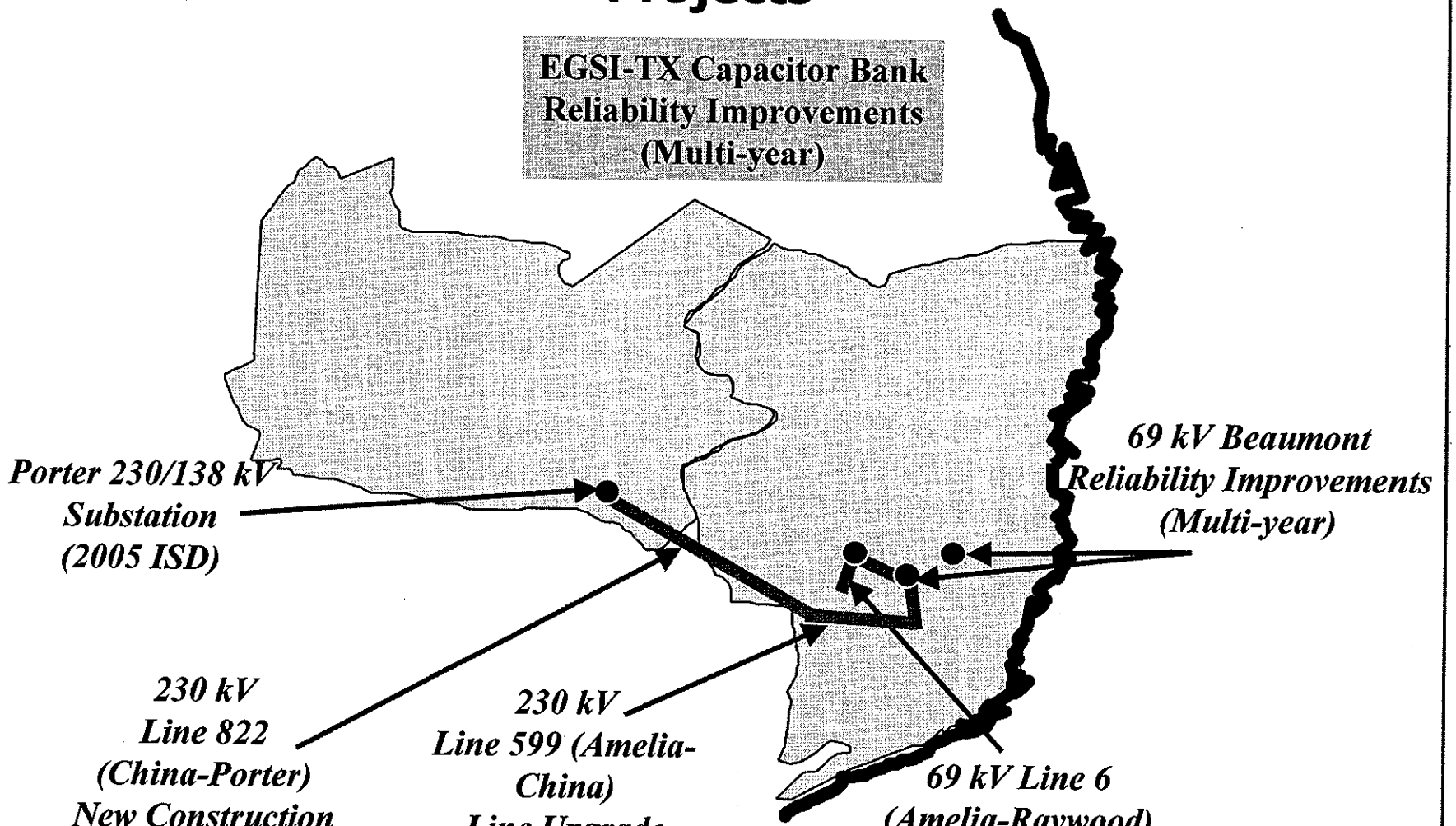
July 8, 2004

Entergy



Entergy

2005-06 EGSI-TX Proposed Transmission Reliability Projects



Entergy

9 kV Line 6 (Amelia -Raywood): Reliability Improvement Plan

Goals

- Increase sectionalizing capability to reduce restoration time
- Enhance voltage support
- Increase line capacity

Completed Projects

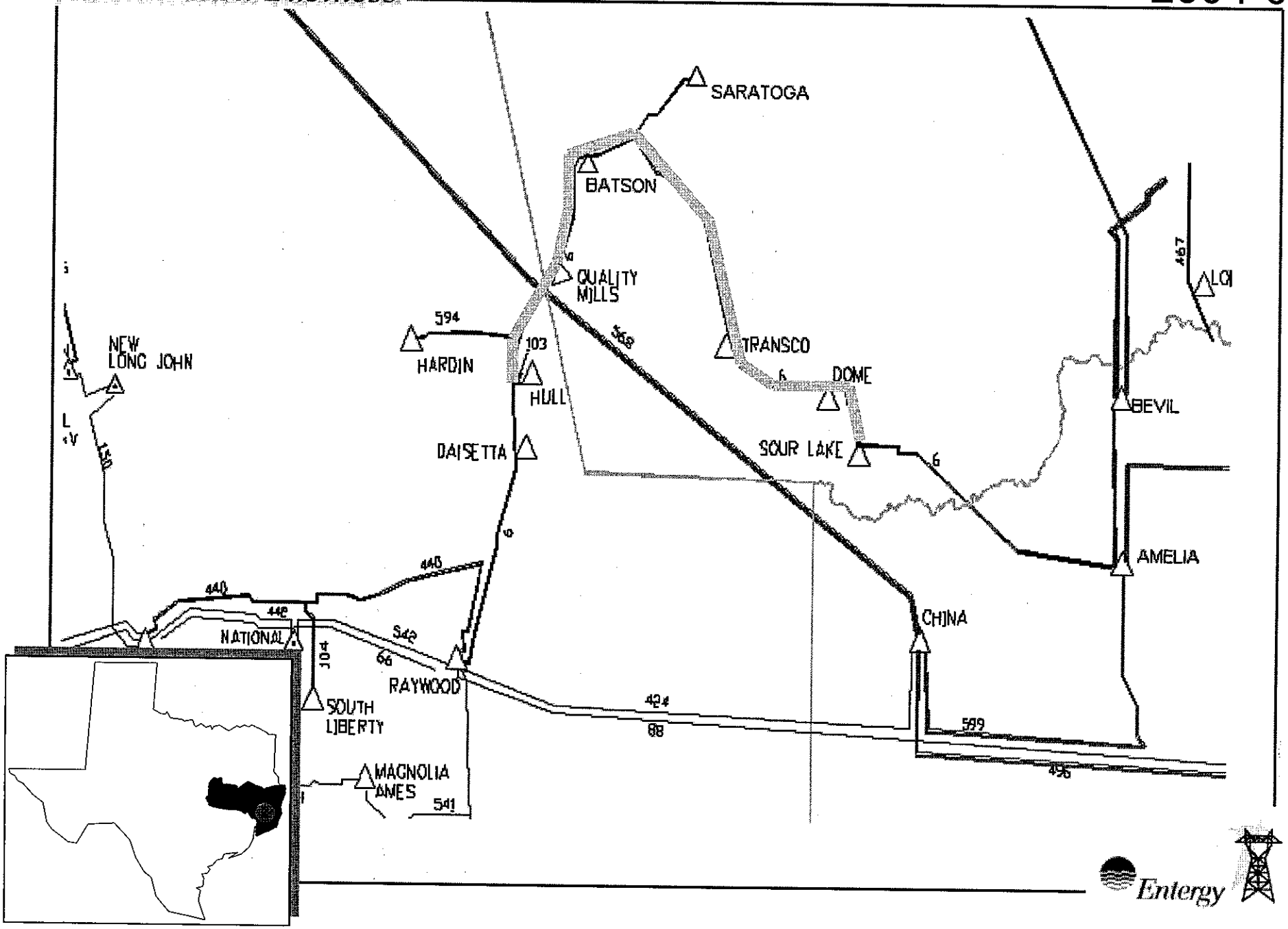
- Install 69 kV circuit breakers at Batson, Sour Lake, & Daisetta substations
- Install additional sectionalizing equipment (*i.e.*, motor-operated switches, motor mechanisms, RTUs)
- Upgrade line capacity from Raywood Substation to Hull Tap
- Estimated Cost: $3.7 MM

In Progress Projects

- Install 14 MVAR capacitor bank at Batson 69 kV substation
- Upgrade line capacity from Amelia to Sour Lake
- Estimated Cost: $2 MM

Projects scheduled for 2005 and beyond

- Upgrade capacity from Sour Lake Substation to Hull Tap
- Estimated Total Cost: $11.3 MM

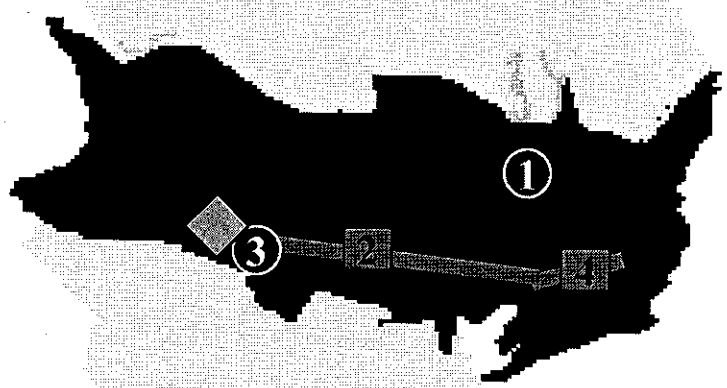

SARATOGA
BATSON
QUALITY MILLS
594
HARDIN
103
HULL
TRANSCO
DOME
NEW LONG JOHN
DAISETTA
SOUR LAKE
BEVIL
467
LCI
AMELIA
CHINA
NATIONAL
104
542
66
RAYWOOD
SOUTH LIBERTY
424
88
599
496
MAGNOLIA AMES
541
Entergy

2005 Western Region Reliability Improvement Plan (WRRIP): Phase II

Phase II of the Western Region Improvement Plan addresses the projected load growth in 2005.

Planning studies have indicated the Western Region has the potential to encounter voltage stability and thermal overloading problems under the following double contingencies:

- **Loss of Lewis Creek Unit & 345 kV Line 119 (Crockett-Grimes)**
- **Loss of Lewis Creek Unit & 230 kV Line 568 (China-Jacinto)**
- **Loss of both Lewis Creek Units**



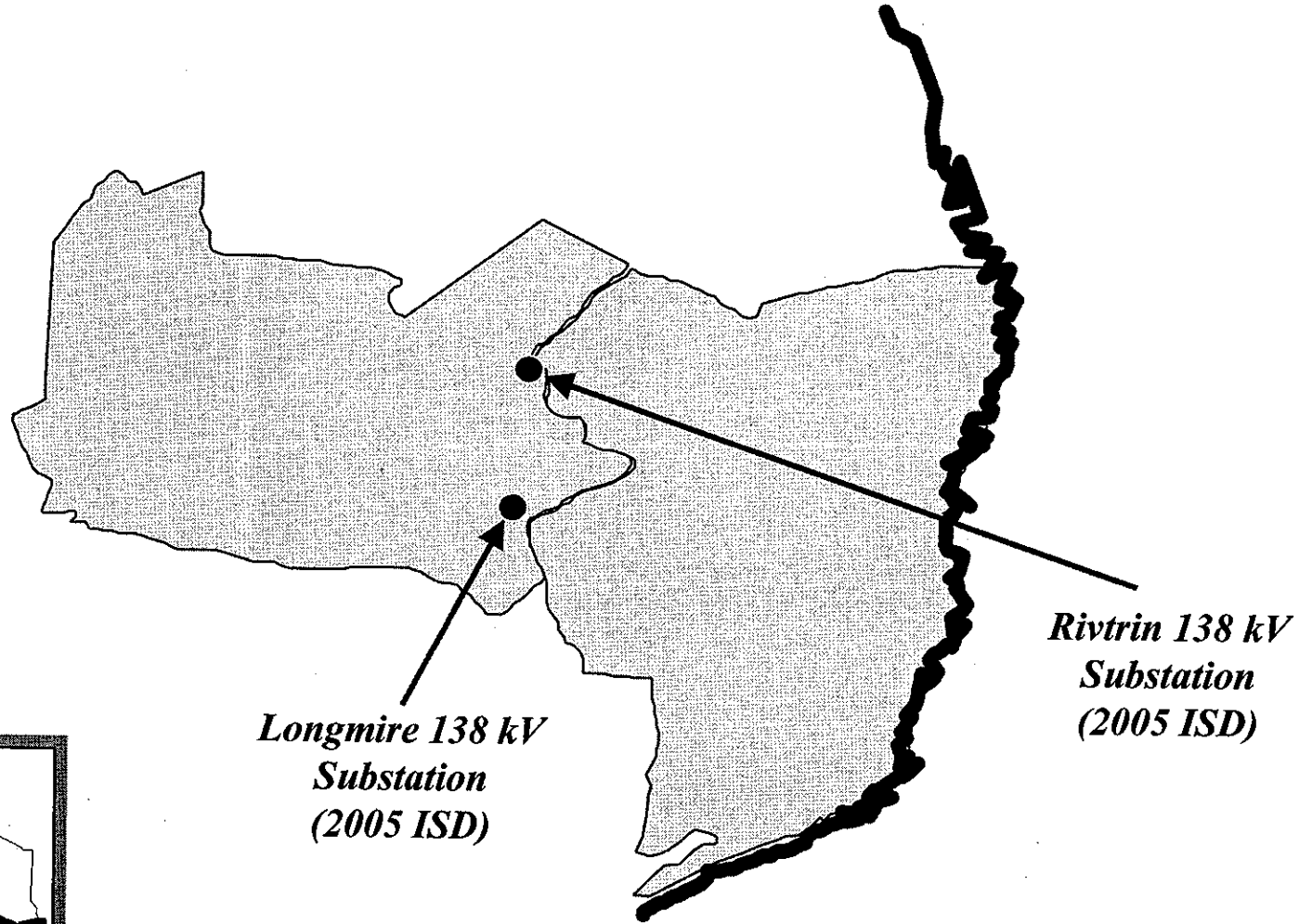
Phase II Projects

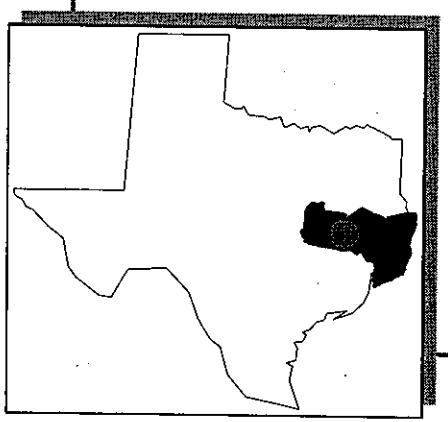
1. **500/230kV Auto (Cypress) COMPLETED**
2. **Construct Line 822 (China-Porter) 230 kV**
3. **Construct 230/138kV Porter Substation**
4. **Upgrade Line 599 (Amelia-China) 230 kV**
5. **Install 300 MVAR Static VAr Compensator At Porter 138 kV Substation**

Estimated Cost: $92 MM

Entergy

EGSI-TX apacitor Bank Reliability Improvement Plan





Entergy

EGSI-TX Capacitor Bank Reliability Improvement Plan

Scenario:

- The EGSI-TX service territory has a limited supply of reactive power from generation sources. Steady state capacitor banks provide critical reactive power support.
- In recent years, several different factors have contributed to failures of EGSI-TX capacitor banks:
  - Size of pre-insertion devices
  - Relaying on capacitor banks

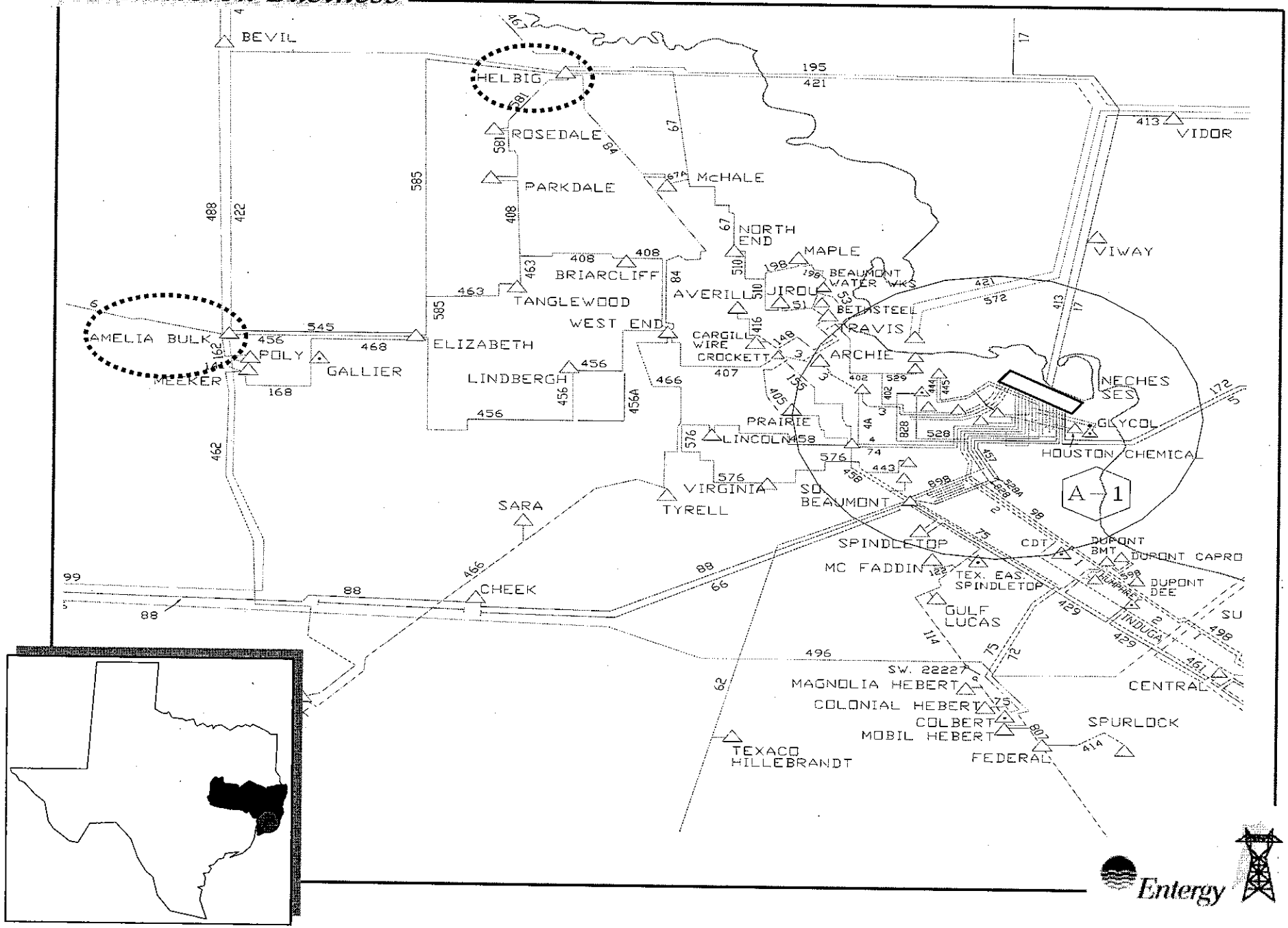
Recommended Solution:

- Capacitor banks are being targeted for reliability improvements in 2005 and beyond that may include:
  - Installation of new pre-insertion devices
  - Installation of new switches equipped with pre-insertion devices
  - Installation of new relaying equipment
  - Relocation of some capacitor banks to electrically distance the banks
  - Replace obsolescent equipment associated with capacitor banks

Estimated Costs:

- To be determined per capacitor bank

Transmission Business



Entergy

Beaumont 69 kV Reliability Improvements

Helbig 230/69 kV Substation: Reconfigure
Amelia 230/69 kV Substation: Reconfigure

Scenario:

- Loss of the Helbig 69 kV bus or loss of the Amelia 69 kV bus due to a bus-tie breaker failure has the potential to cause outages on the 69 kV subsystem that serves the Beaumont commercial and residential area.

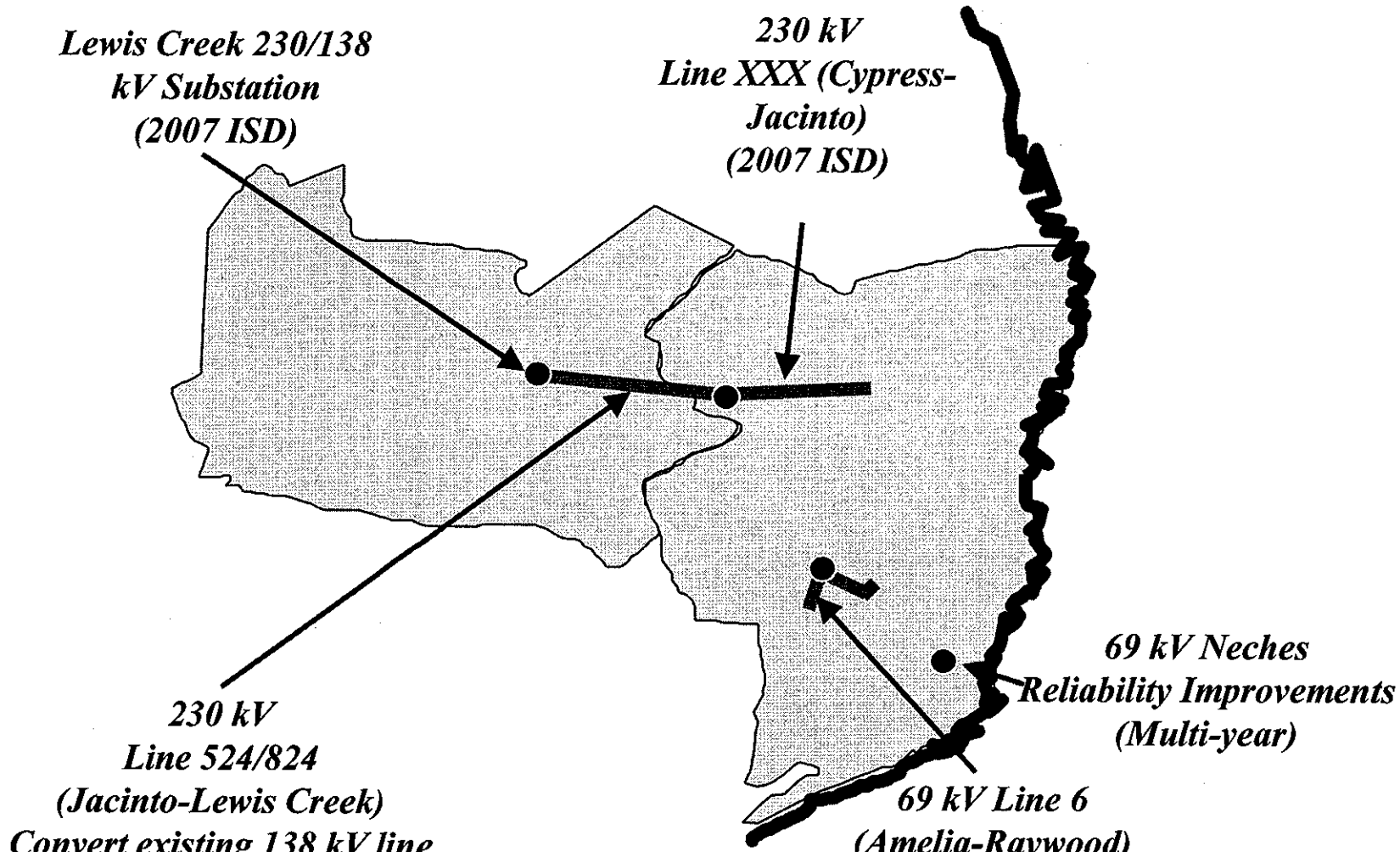
Recommended Solution:

- Reconfigure the 69 kV side of Helbig and Amelia substations with an additional bus-tie breaker.
- Reconfigure the 230 kV side of Helbig and Amelia substations to a ring bus configuration.
- Close the normally-open breaker at Crockett 69 kV substation.

Estimated Cost: $ 4.5 MM

Entergy

2007-08 EGSI-TX Transmission Expansion Projects



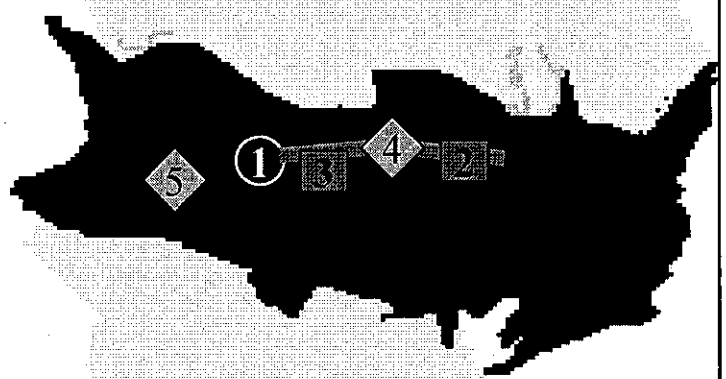
Entergy

2007 Western Region Reliability Improvement Proposal (WRRIP): Phase III

Phase III of the Western Region Improvement Plan addresses the projected load growth in 2007.

Planning studies have indicated the Western Region has the potential to encounter voltage stability and thermal overloading problems under the following double contingencies:

- **Loss of Lewis Creek Unit & 345 kV Line 119 (Crockett-Grimes)**
- **Loss of Lewis Creek Unit & 230 kV Line 568 (China-Jacinto)**
- **Loss of both Lewis Creek Units**



Phase III Projects

1. **Construct 230/138kV Lewis Creek Substation**
2. **Construct Line XXX (Cypress-Jacinto) 230 kV**
3. **Convert Line 524 (Jacinto-Lewis Creek) to 230 kV**
4. **Install 200 MVAR Static VAr Compensator At Jacinto 138 kV Substation**
5. **Install 200 MVAR steady state capacitor banks at various substations**

Estimated Cost: $60 MM

Entergy

Neches Station Reliability Improvement Plan

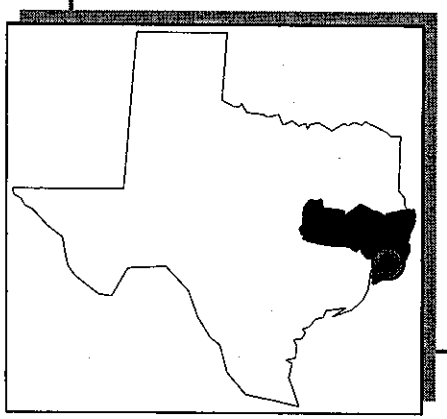
Scenario:

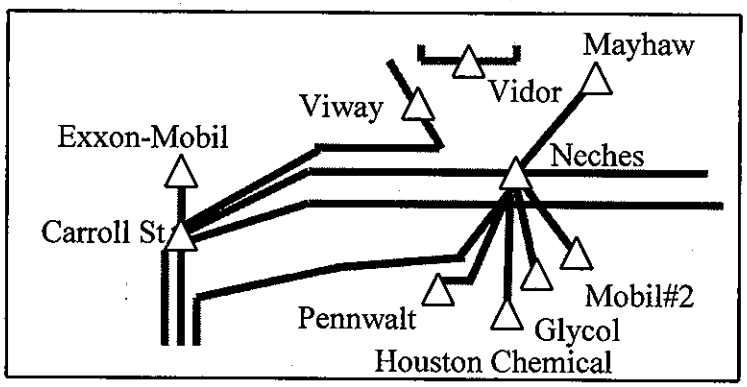
- Neches substation was constructed in conjunction with Neches Power Plant in 1926-27. Most of the station's existing equipment operating today pre-dates the 1960's.

Recommended solution:

- Construct new consolidated substation adjacent to the existing Neches Substation

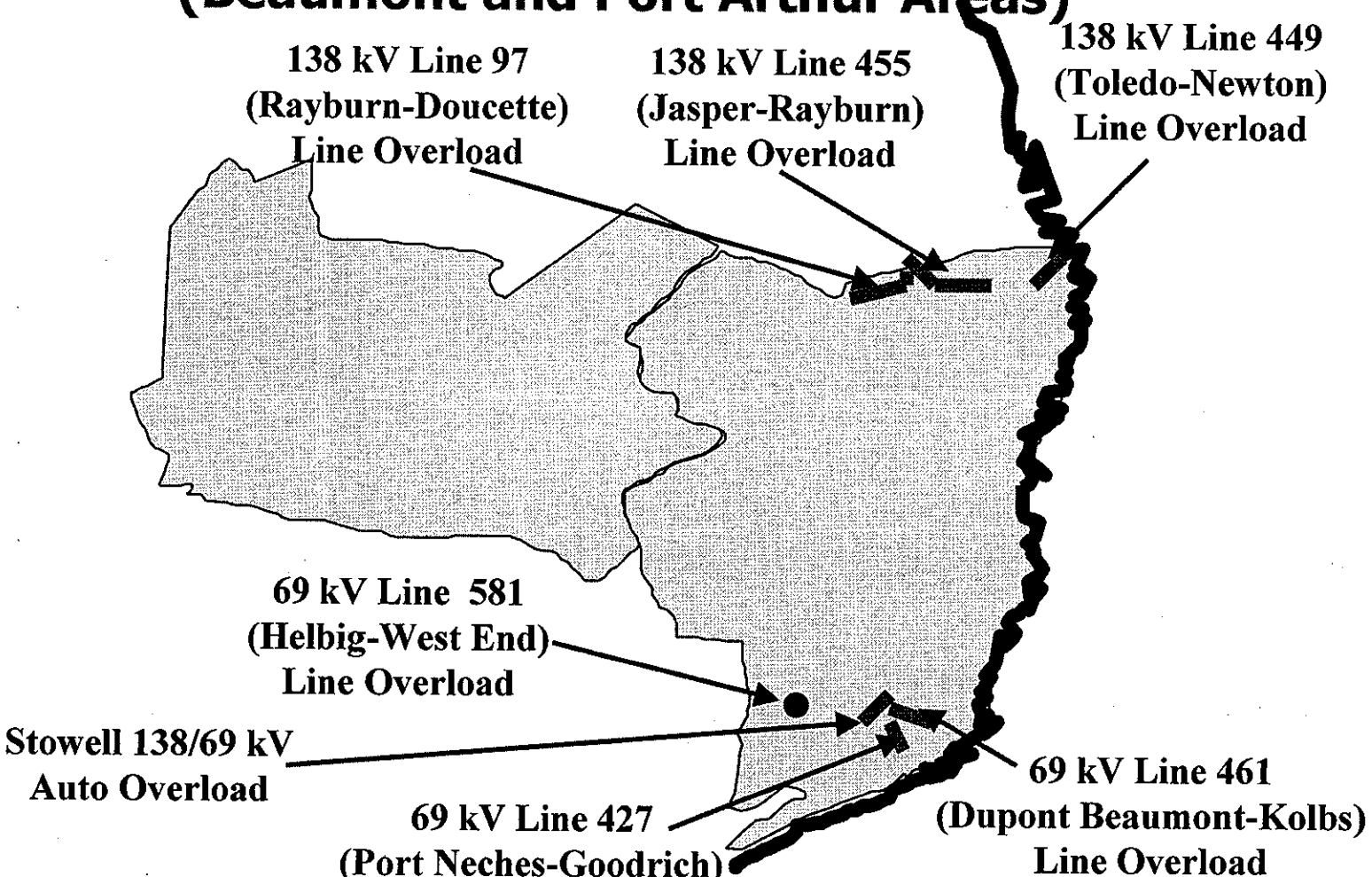
Estimated costs: $8.5 MM





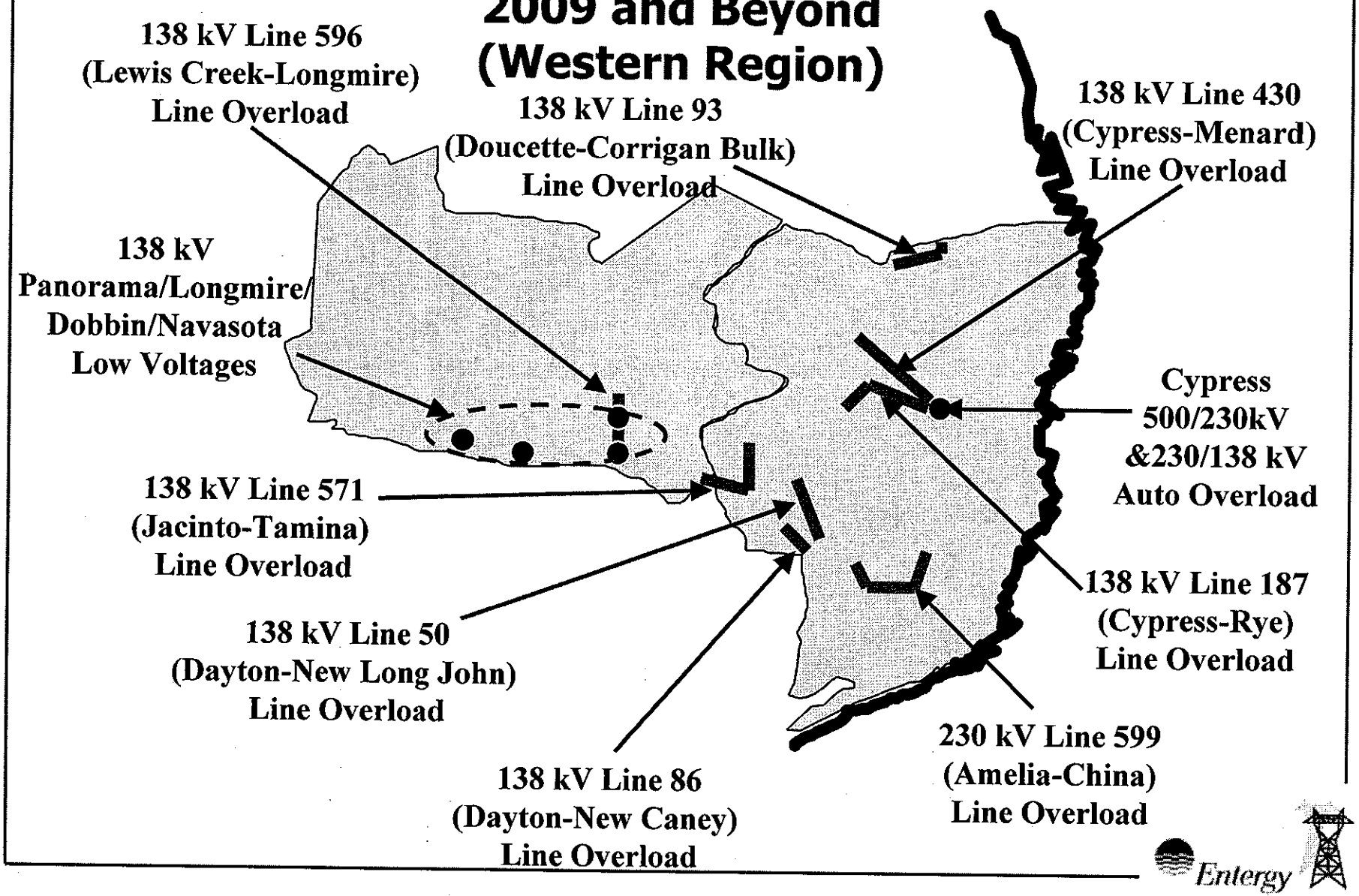
Entergy

EGSI-TX Transmission System Target Areas 2009 and Beyond (Beaumont and Port Arthur Areas)



Entergy

EGSI-TX Transmission System Target Areas 2009 and Beyond (Western Region)

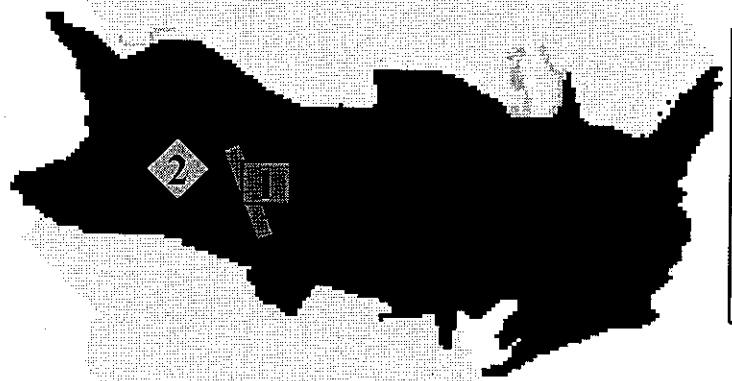


2011 Western Region Reliability Improvement Proposal (WRRIP): Phase IV

Phase IV of the Western Region Improvement Plan addresses the projected load growth in 2011.

Planning studies have indicated the Western Region has the potential to encounter voltage stability and thermal overloading problems under the following double contingencies:

- **Loss of Lewis Creek Unit & 345 kV Line 119 (Crockett-Grimes)**
- **Loss of Lewis Creek Unit & 230 kV Line 568 (China-Jacinto)**
- **Loss of both Lewis Creek Units**



Phase IV Projects

Construct Line XXX (Porter-Lewis Creek) 230 kV

2 Install 70 MVAR of steady state capacitor banks at various locations

Estimated Cost: $22 MM

Entergy

Questions

Entergy Louisiana, Inc. (North)

Proposed Transmission Reliability Projects

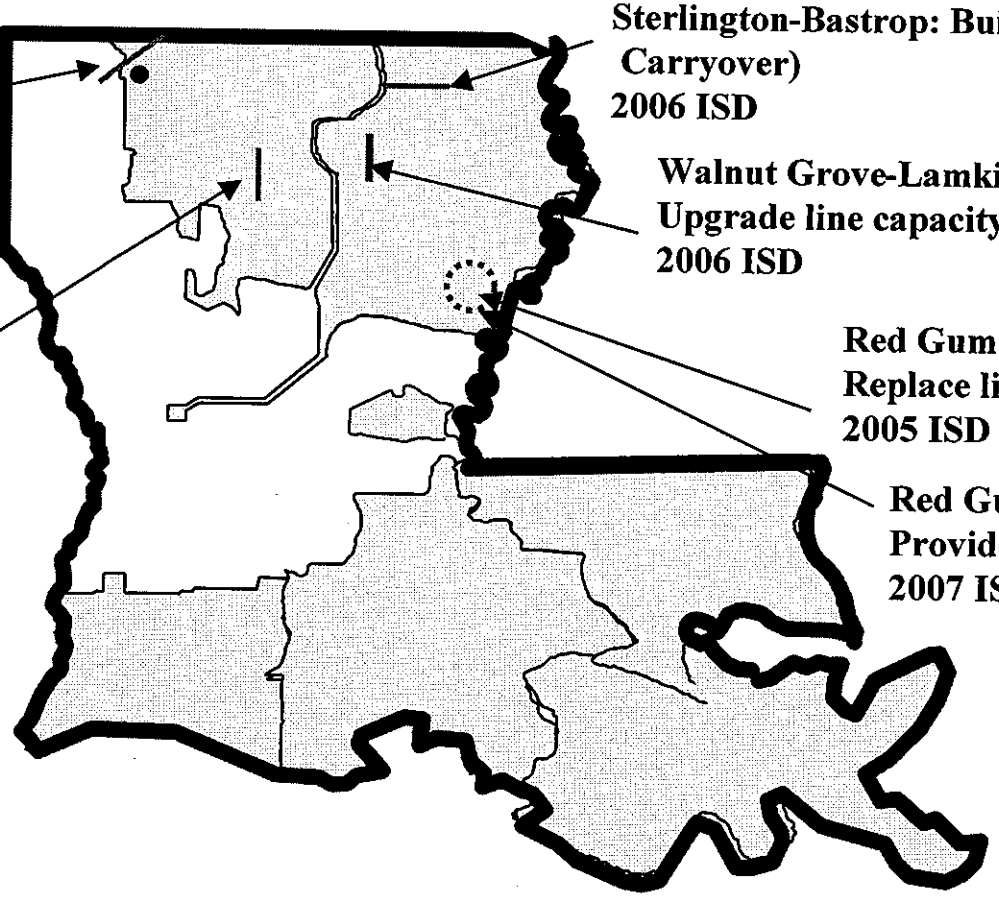
Entergy Transmission Planning Summit

New Orleans, LA

July 8, 2004

Entergy

2005-06 ELI-North Transmission Reliability Projects



Entergy

NW Louisiana/S Arkansas Voltage Support: Install a 345/115kV Auto

Scenario:

- The 115kV line from McNeil to Sarepta from south Arkansas to northwest Louisiana is 56 miles long.

- Contingency: The loss of any section of the line between McNeil to Emerson will cause severe low voltages as low as 68% at multiple stations.

Recommended Options:

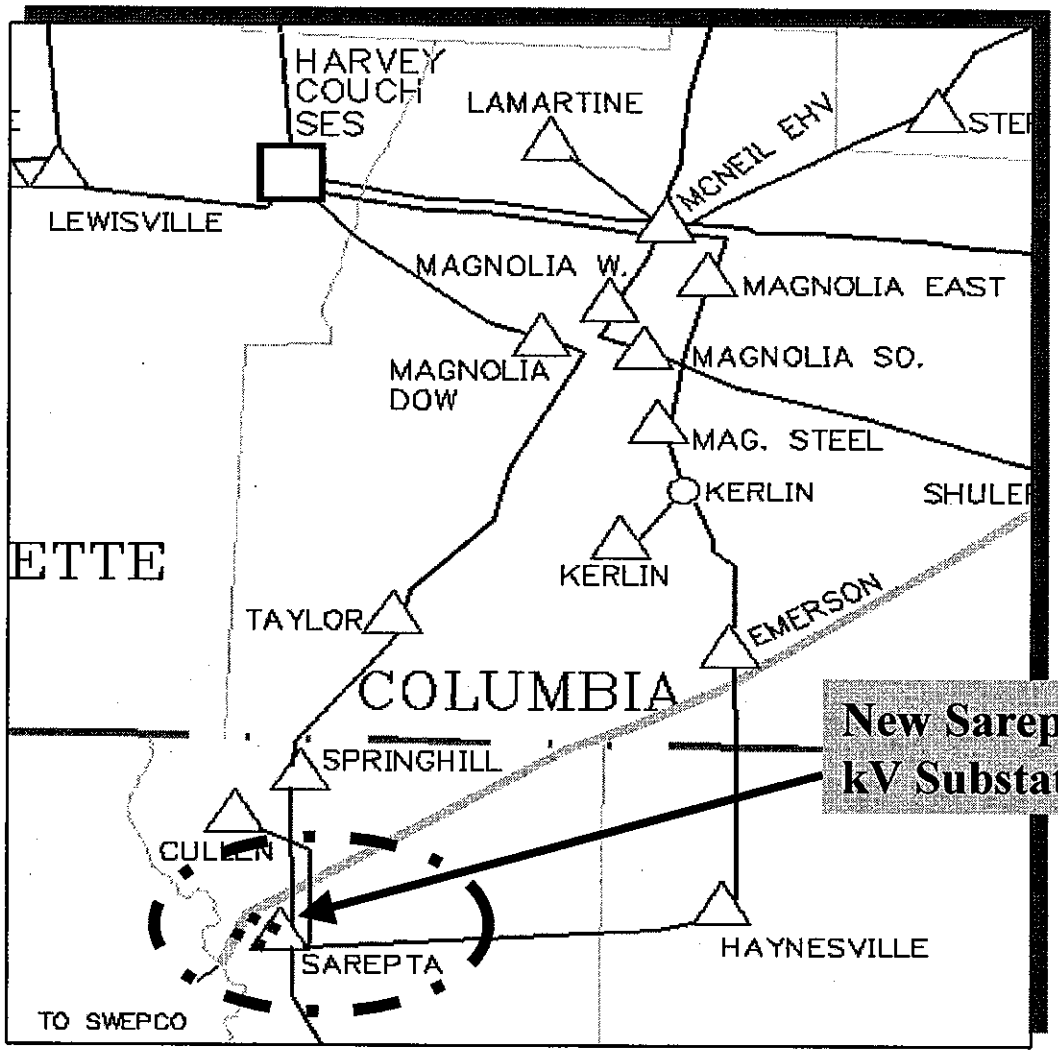
1. Build a new 345/115kV substation at Sarepta by creating an "in & out" tie from the Eldorado-Longwood 345 kV line.

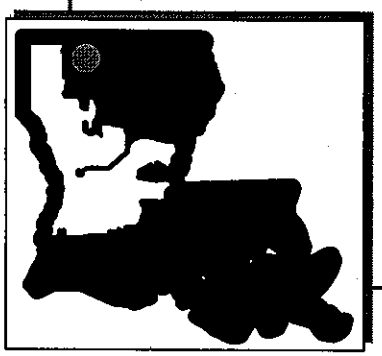
   Estimated Cost: $8.1 MM (scoped)

2. Build a new 345/115 kV substation between Emerson and Haynesville 115 kV by creating an "in & out" tie from the Eldorado-Longwood 345 kV line.

   Estimated Cost: $9.9 MM (scoped)

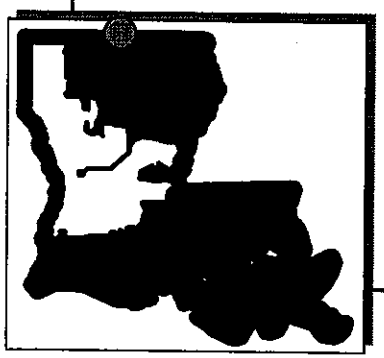
Sarepta: Tap Eldorado-Longwood 345kV Line

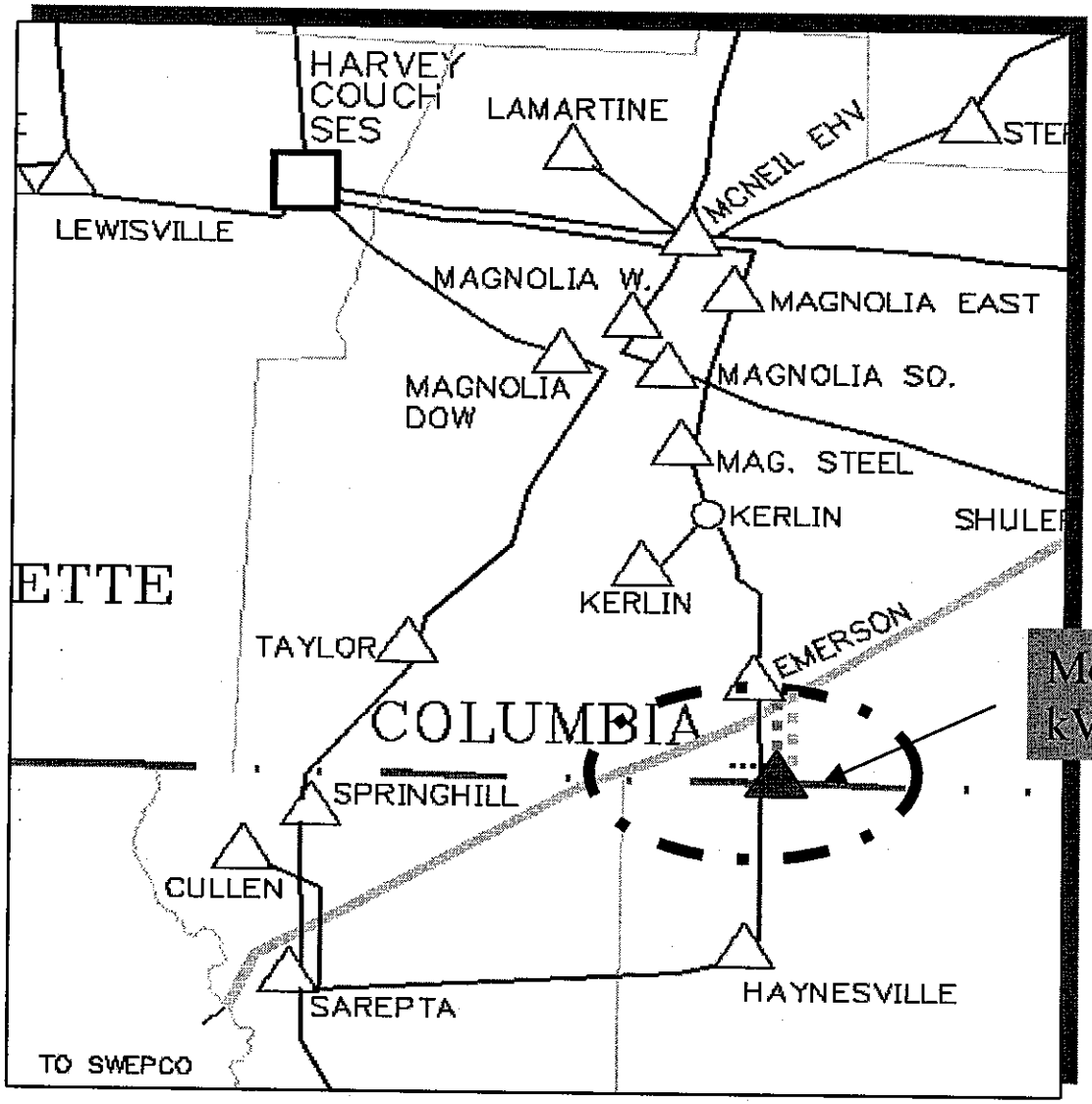




Entergy

Emerson & Haynesville Line 115 kV: New 345/115 kV Sub





Mohawk 345/115 kV Substation

Entergy

Sterlington to Bastrop: Build New 115kV Line

Scenario:

- The 115kV line from Sterlington to Bastrop in north Louisiana is 11 miles long. The distance from N. Bastrop to the Sterlington to N. Crossett line is 6 miles and the distance from N. Bastrop to the tap is 4 miles.

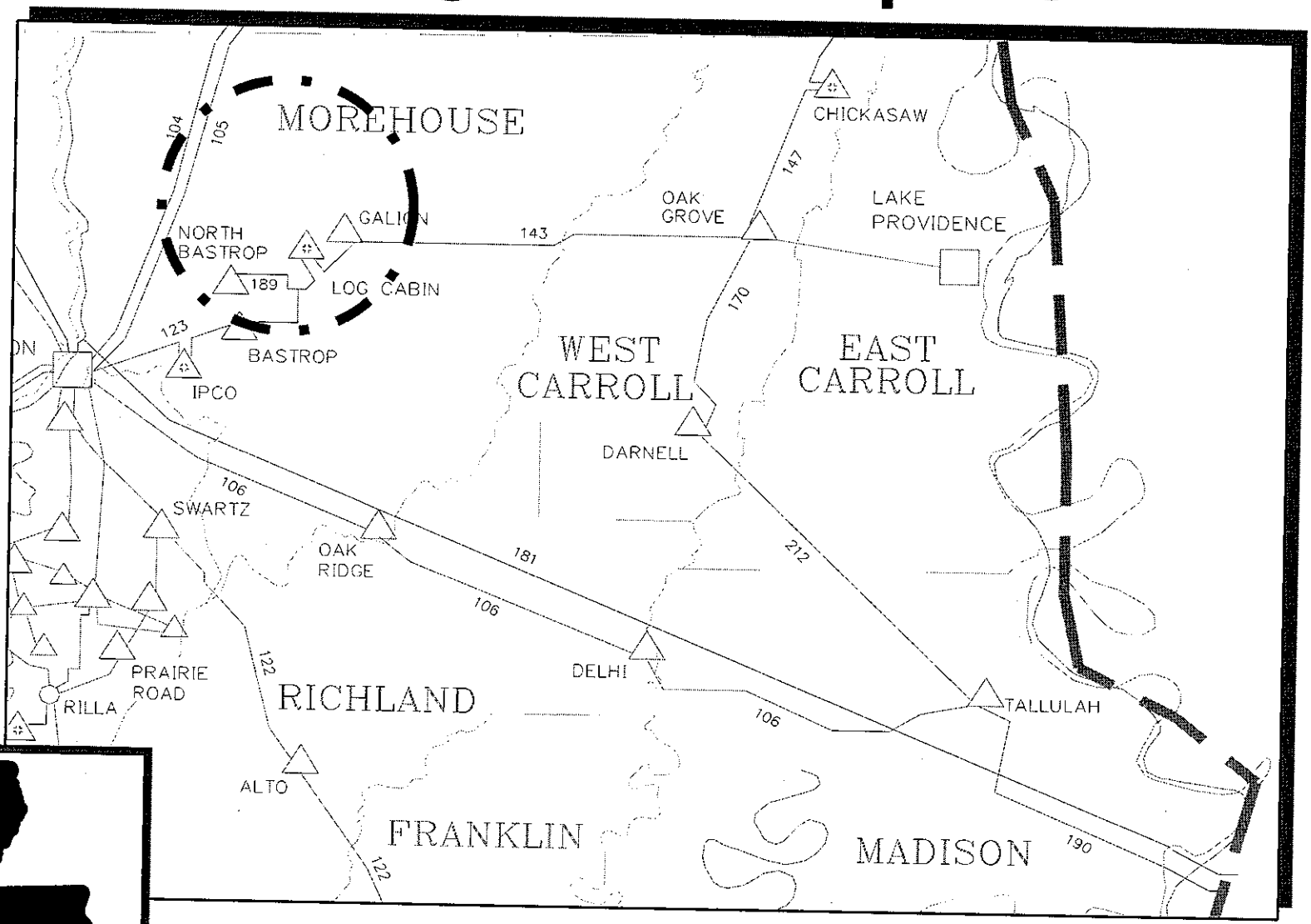
- Contingency: Loss of the Sterlington to Bastrop 115kV line will result in voltage levels as low as 82% from Bastrop to Oak Grove to Darnell. The loss of the Sterlington to IPCO results in voltage collapse in the area. The 115kV line from Sterlington to IPCO cannot be opened most of the year.

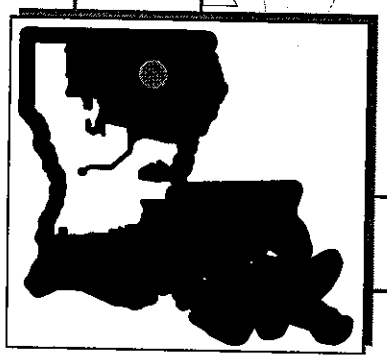
Recommended Solution:

- Build the Sterlington to Crossett North 115kV line into N. Bastrop (6 miles in & 6 miles out) and eliminate the 115kV North Bastrop tap by bringing the Bastrop to Log Cabin line into N. Bastrop with another 4 miles of "in & out" construction.

- Estimated Cost: $8.9 MM

Sterlington to Bastrop Line





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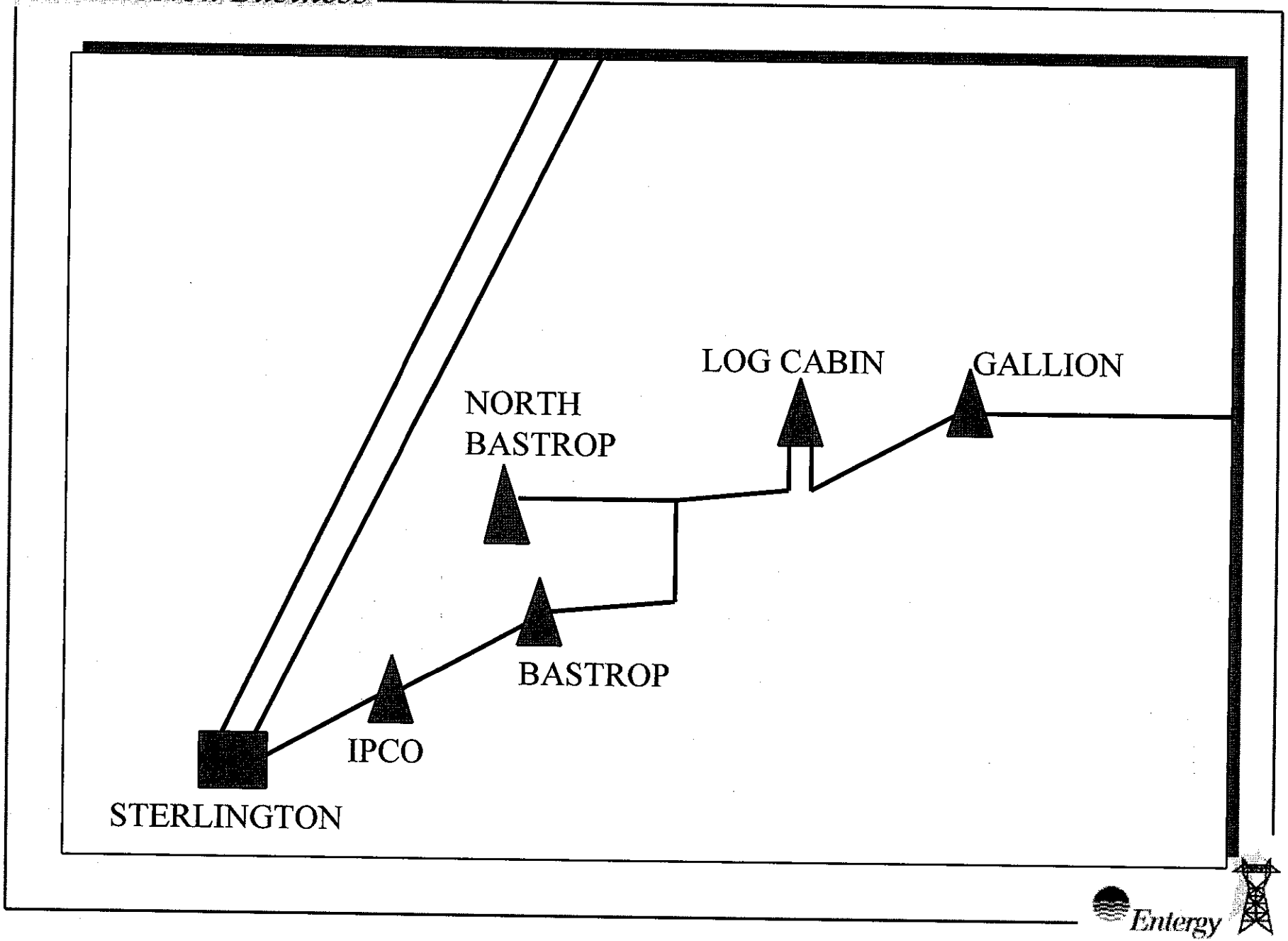
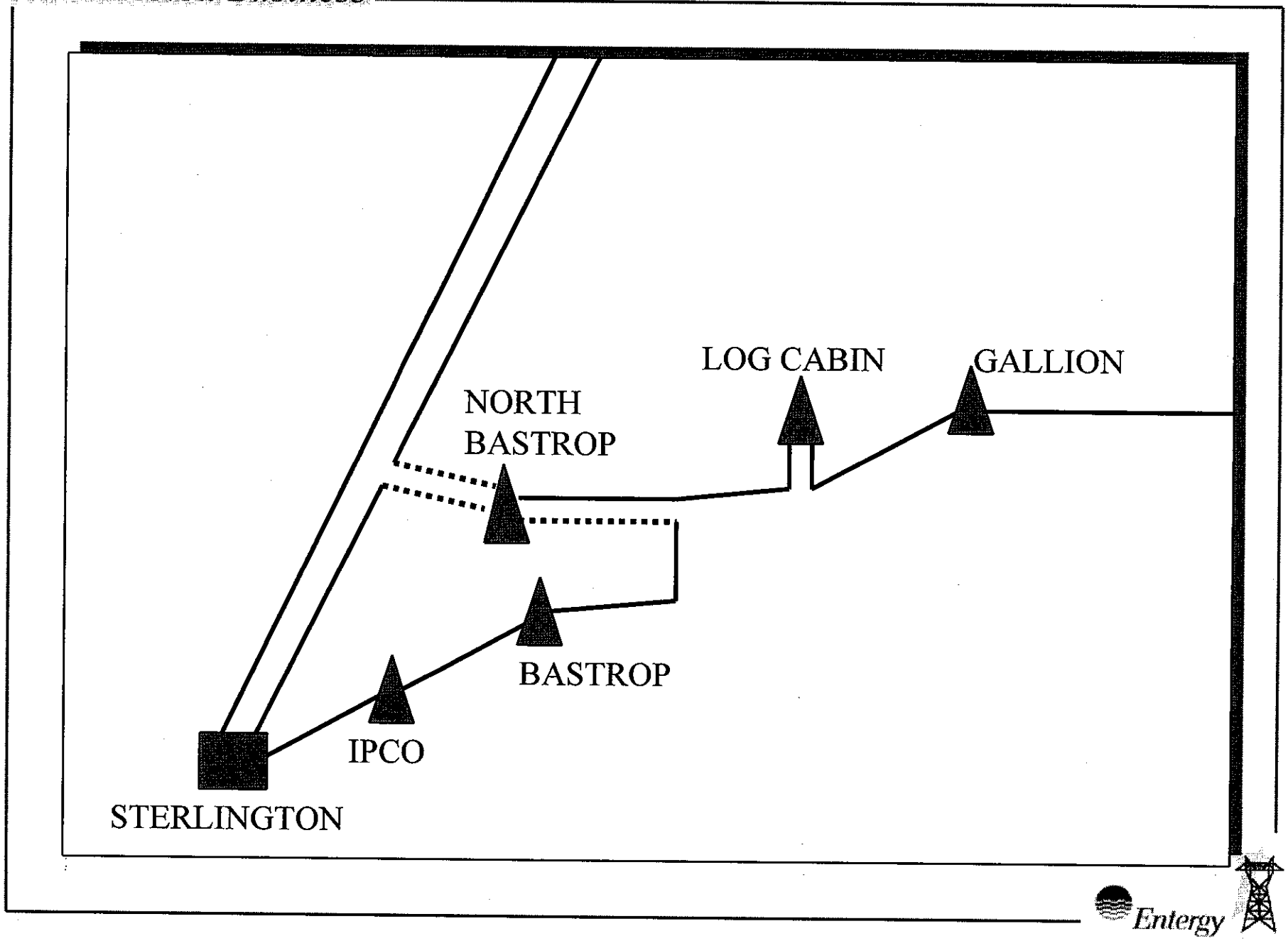

LOG CABIN
GALLION
NORTH
BASTROP
BASTROP
IPCO
STERLINGTON
Entergy


LOG CABIN
GALLION
NORTH
BASTROP
BASTROP
IPCO
STERLINGTON
Entergy

Walnut Grove to Lamkin to Monroe 115 kV Line: Upgrade line capacity

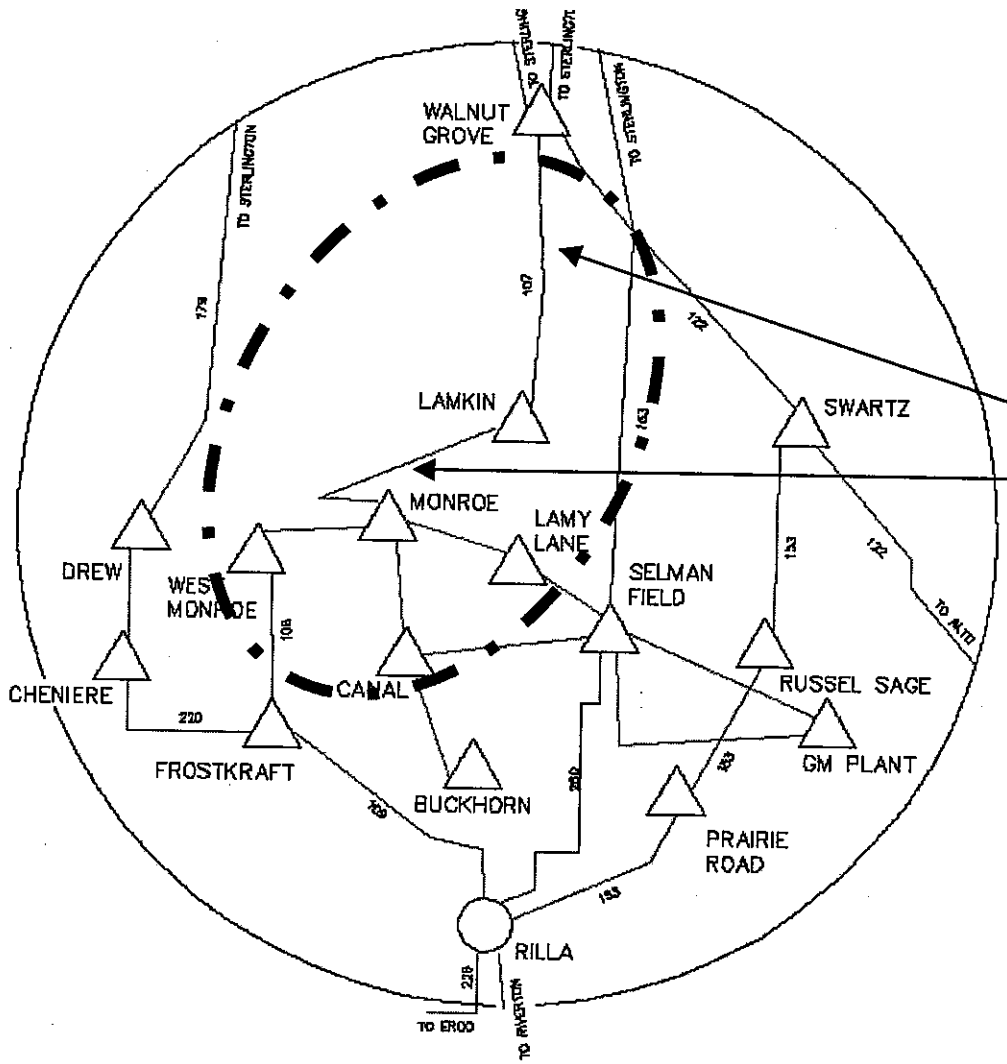
Scenario:

- The 115 kV line from Walnut Grove to Lamkin to Monroe in north Louisiana is 15 miles long. This is one of the 115 kV lines serving the Monroe Area.
  - The single contingency loss of 6 different 115kV lines will overload Walnut Grove to Lamkin by 24% in 2007. The Lamkin to Monroe 115kV Line will overload by 11% in 2007 for 6 different single contingencies.

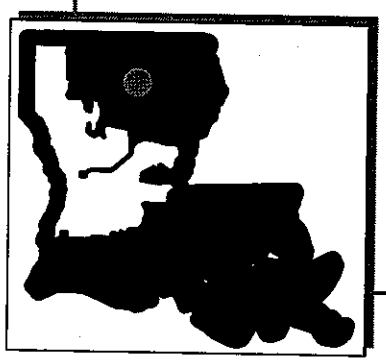
Recommended Solution:

- Upgrade the capacity of the Walnut Grove to Lamkin 115kV line by June 2005 and the Lamkin to Monroe 115kV line by June 2006. The line should be upgraded to 2000 Amps.
- Estimated Cost: $5.19 MM

Walnut Grove to Lamkin to Monroe 115 kV Line



Line Upgrade



Entergy

Persimmon Mill Rd & Red Gum 115 kV: Upgrade Line Traps

Scenario

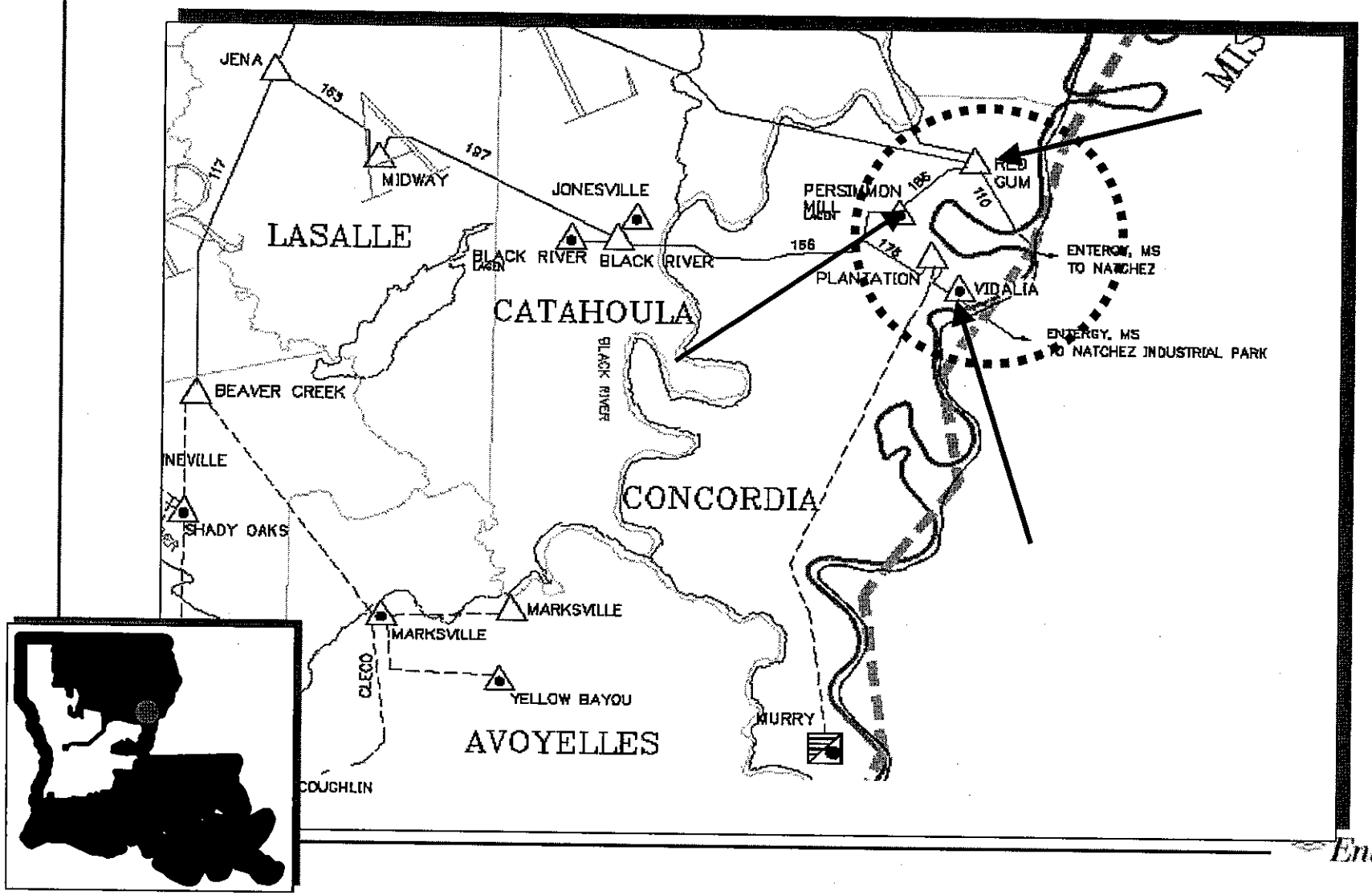
- Murray Hydro is a network resource located in east-central Louisiana. When water levels are high, this plant is operated base loaded.
- During this period of operation, the loads are generally low. This past spring the load was unusually low, while the water level was extremely high allowing Murray to produce at maximum capacity.
- For the loss of Plantation-Vidalia line, the 800 amp (160 MVA) line traps at Red Gum and Persimmon Mill Road Substations overload by 12%.
- Because of post contingent loadings, Murray Plant will be requested to re-dispatch to less than 150 MW.
- To maintain its deliverability as network resource, the lines traps at Red Gum and Persimmon Mill Road Substations need to be upgraded.

Recommended Solution:

- Replace the 4 under-rated line traps at Red Gum and Persimmon Mill Road Substations with at least 1,200 amp line traps.

- Estimated cost: $500 K

Persimmon Mill Rd & Red Gum 115 kV: Upgrade Line Traps



Entergy

Red Gum Area 115 kV: Voltage Improvement

Scenario:

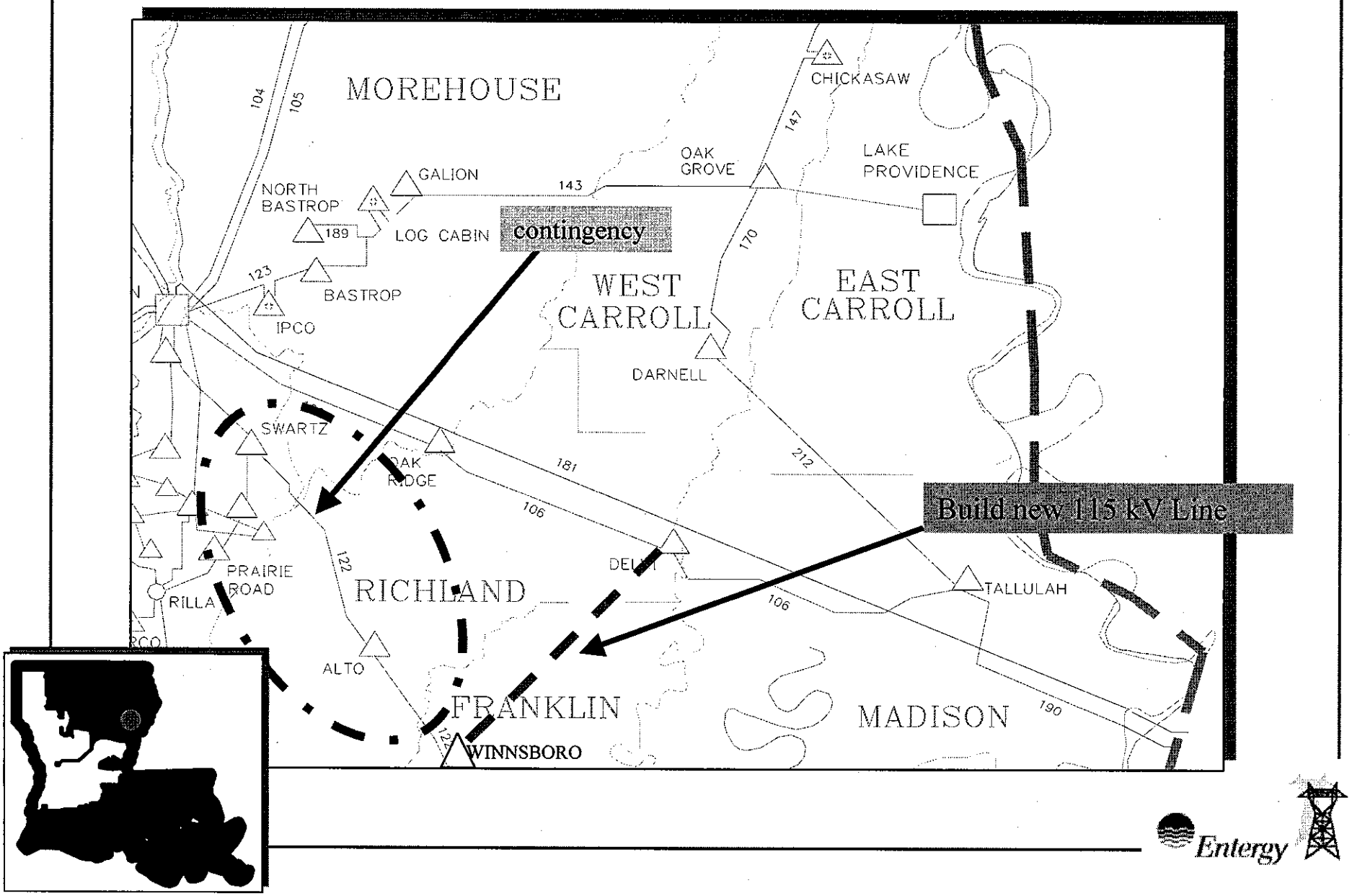
- The Red Gum area is served by substations that average 20 miles apart with some stations as far apart as 46 miles.
- The lack of generation sources in the area combined with the long distances between stations results in an area prone to voltage collapse under peak loading conditions and certain contingencies.
- For the loss of Alto-Swartz or Swartz-Winnsboro line, the voltages collapse at substations south of Winnsboro Substation and west of the MS River.

Recommended Solution:

- Build a 115 kV line tying Delhi and Winnsboro Substations spanning approximately 25 miles.

- Estimated Cost: $12 MM

Red Gum Area: 115 kV



Entergy

Danville to Hodge: Build New 115kV Line

Scenario

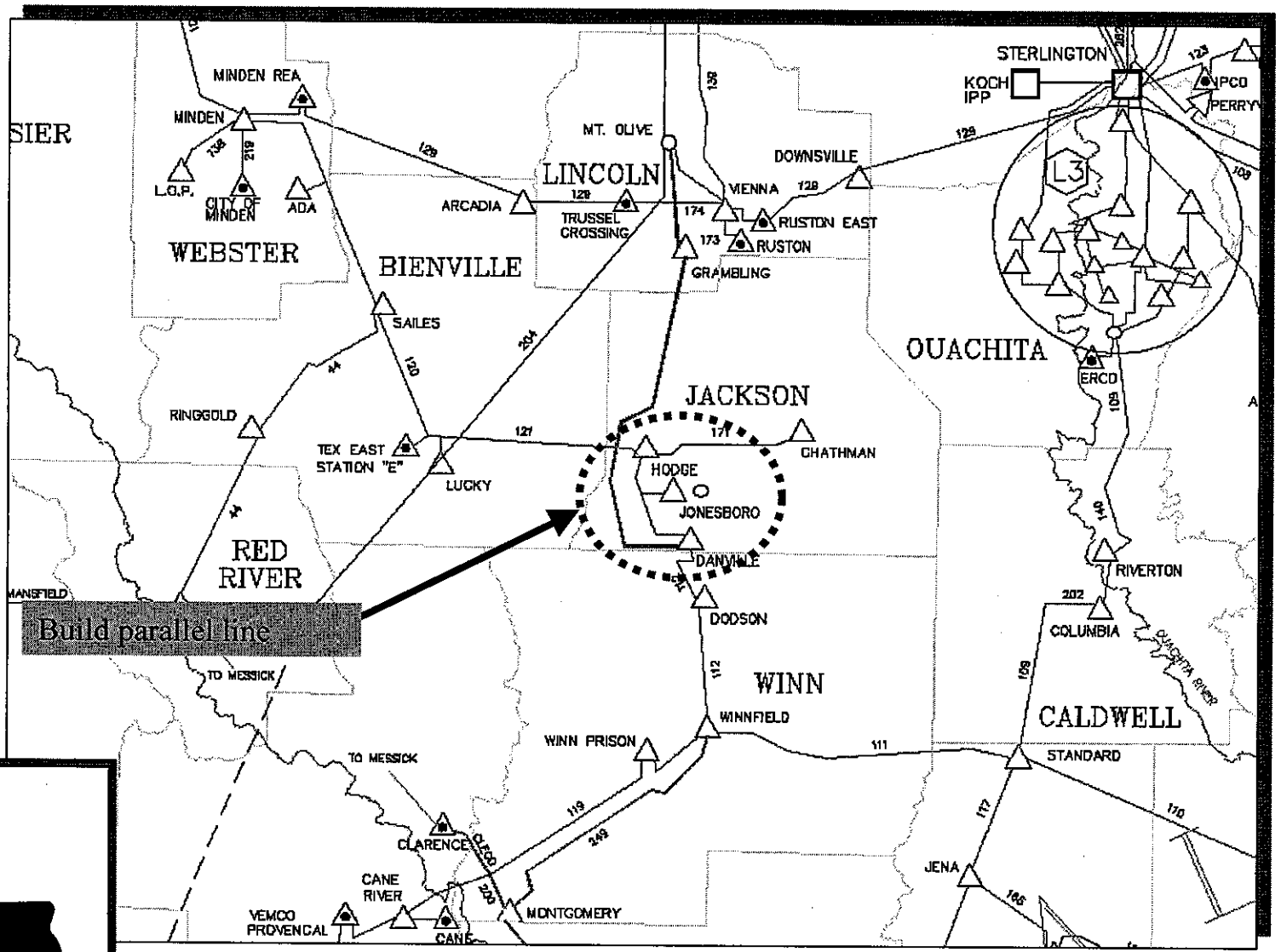
- The 115 kV line from Danville to Hodge in north Louisiana is 4.2 miles long.
- The loss of the Danville to Hodge 115kV line causes low voltages less than 81% from Hodge to Sailes.

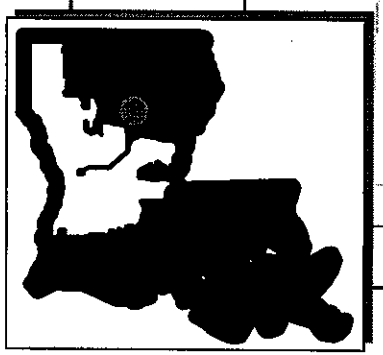
Recommended Solution

- Build a new 115 kV line with 1,272MCM ACSR conductor from Danville to Hodge. This line will relieve all resulting overloads and low voltages.

- Estimated Cost: $2 MM

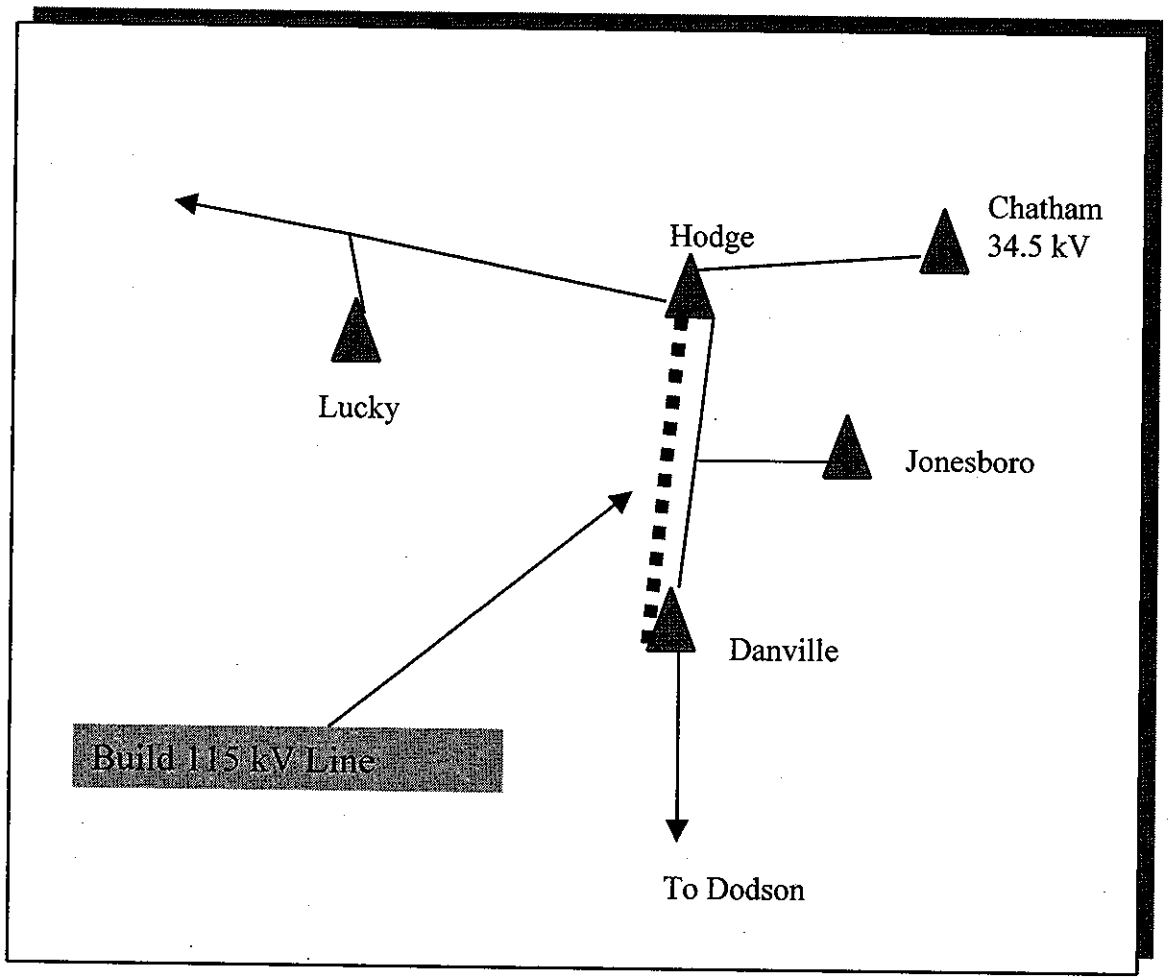
Danville to Hodge





Entergy

115 kV Danville to Hodge

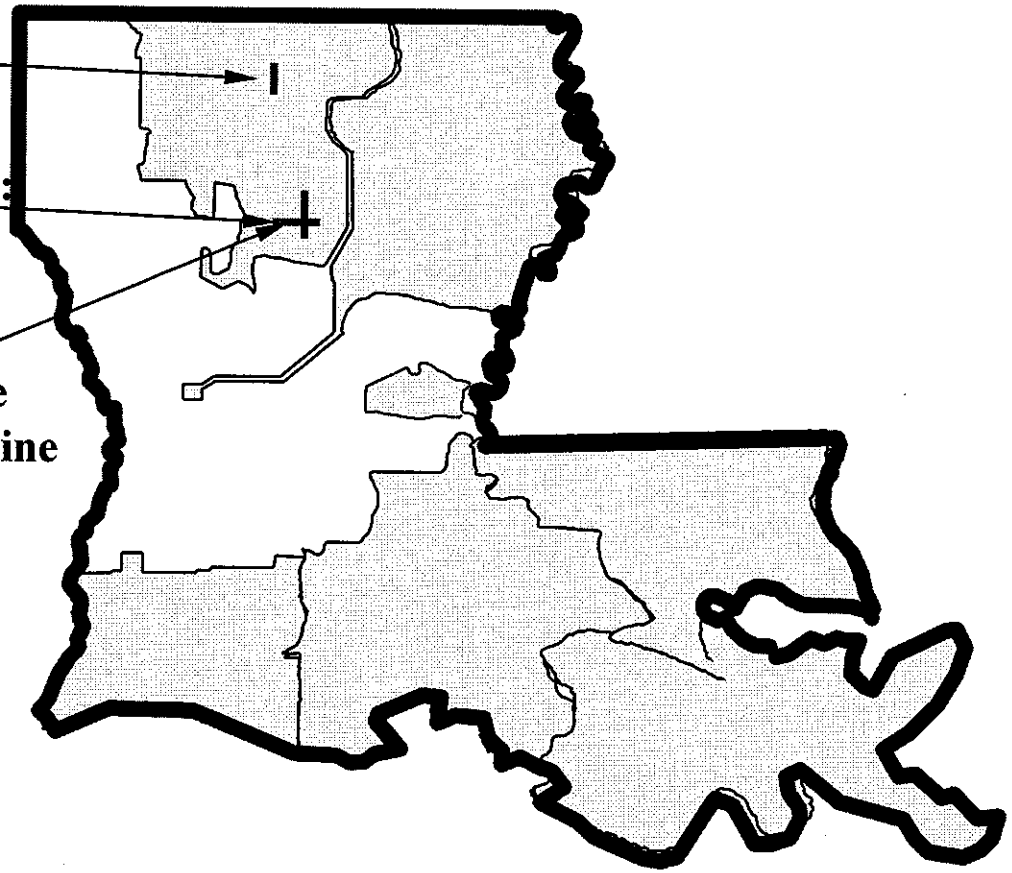


2007-08 ELI-North Transmission Expansion Projects

Vienna-Bernice:
Upgrade line
(2007 ISD)

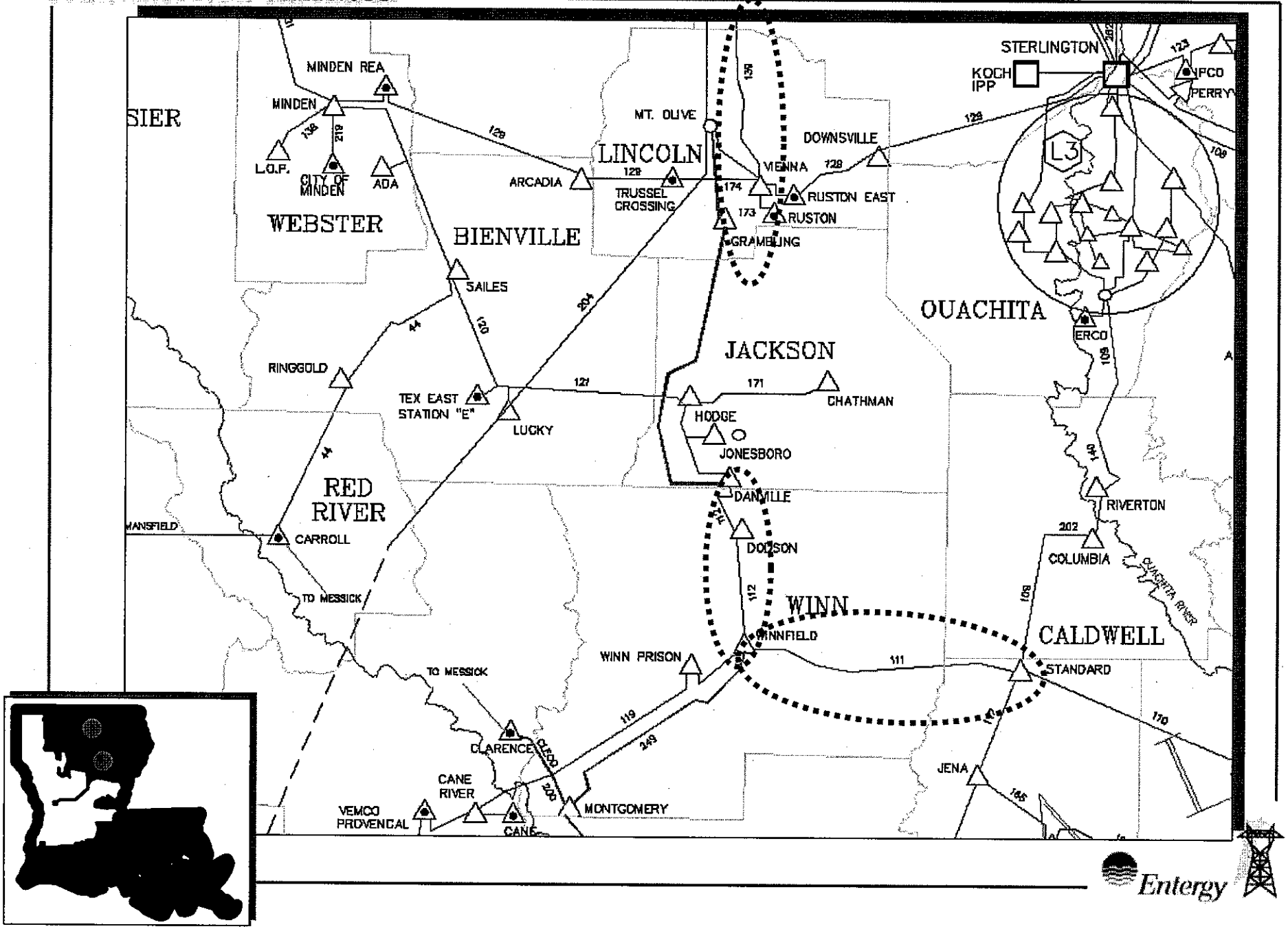
Winfield-Standard:
Upgrade Line
(2007 ISD)

Winfield to Danville
Build New 230kV Line
(2008 ISD)

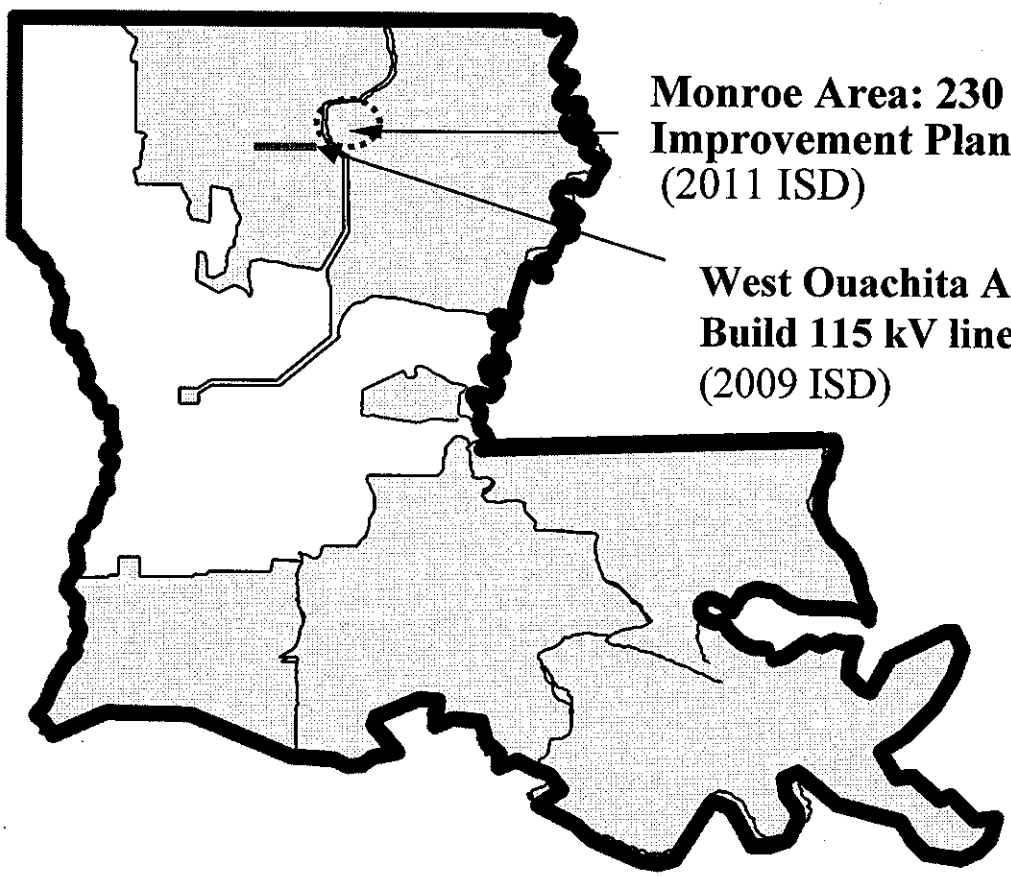


Entergy

Transmission Business



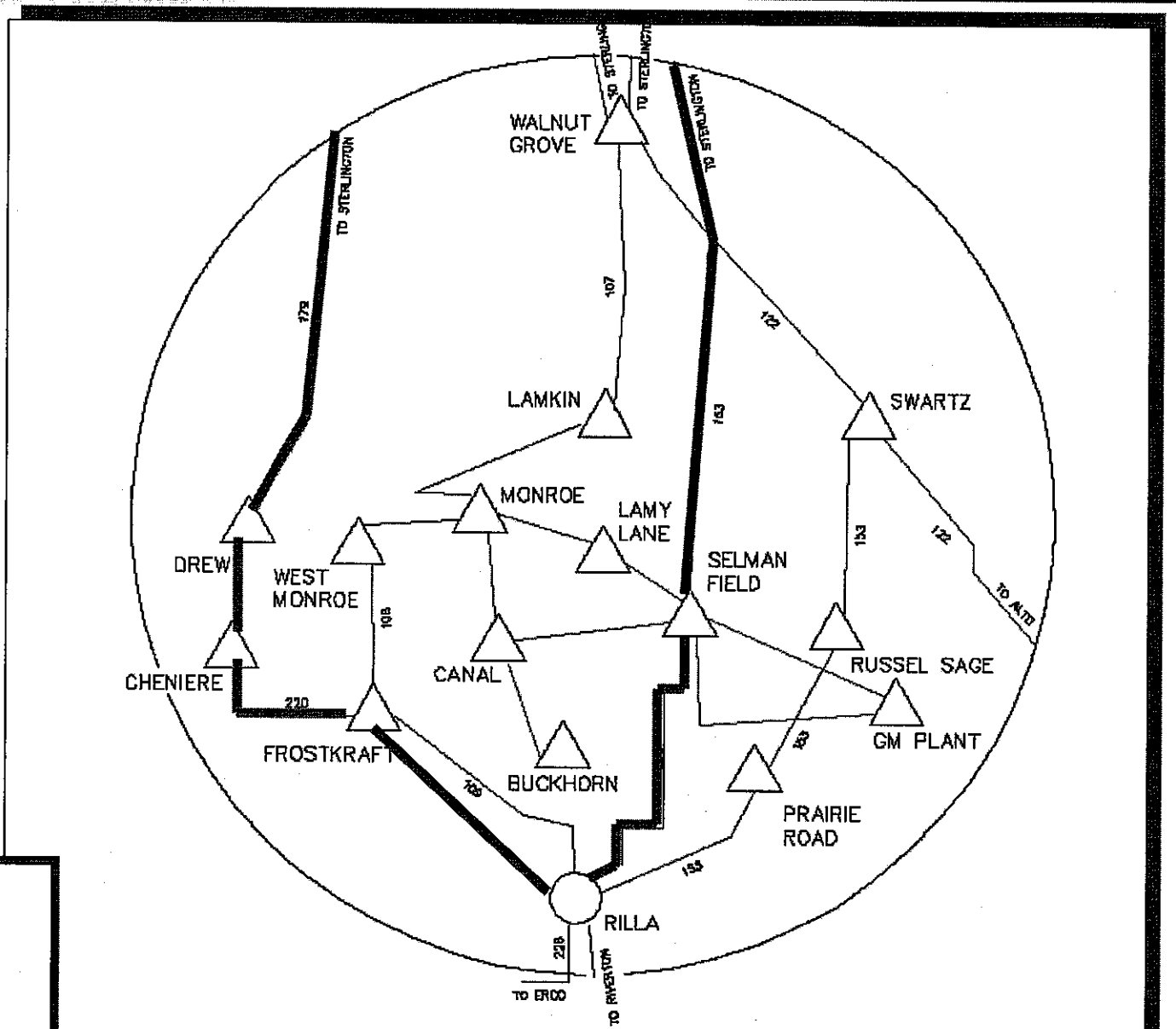
ELI-North Transmission Target Areas 2009 and Beyond



Monroe Area: 230 kV Loop Improvement Plan
(2011 ISD)

West Ouachita Area: Build 115 kV line
(2009 ISD)

Entergy


TO STERLINGTON
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TO STERLINGTON
WALNUT GROVE
LAMKIN
SWARTZ
MONROE
LAMY LANE
DREW
WEST MONROE
SELMAN FIELD
CHENIERE
CANAL
RUSSEL SAGE
FROSTKRAFT
BUCKHORN
GM PLANT
PRAIRIE ROAD
RILLA
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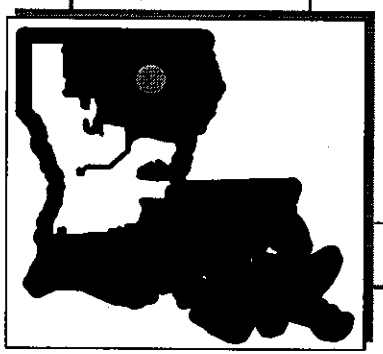


Entergy

Questions

Entergy Louisiana, Inc. (South) & Entergy New Orleans, Inc.

Proposed Transmission Reliability Projects

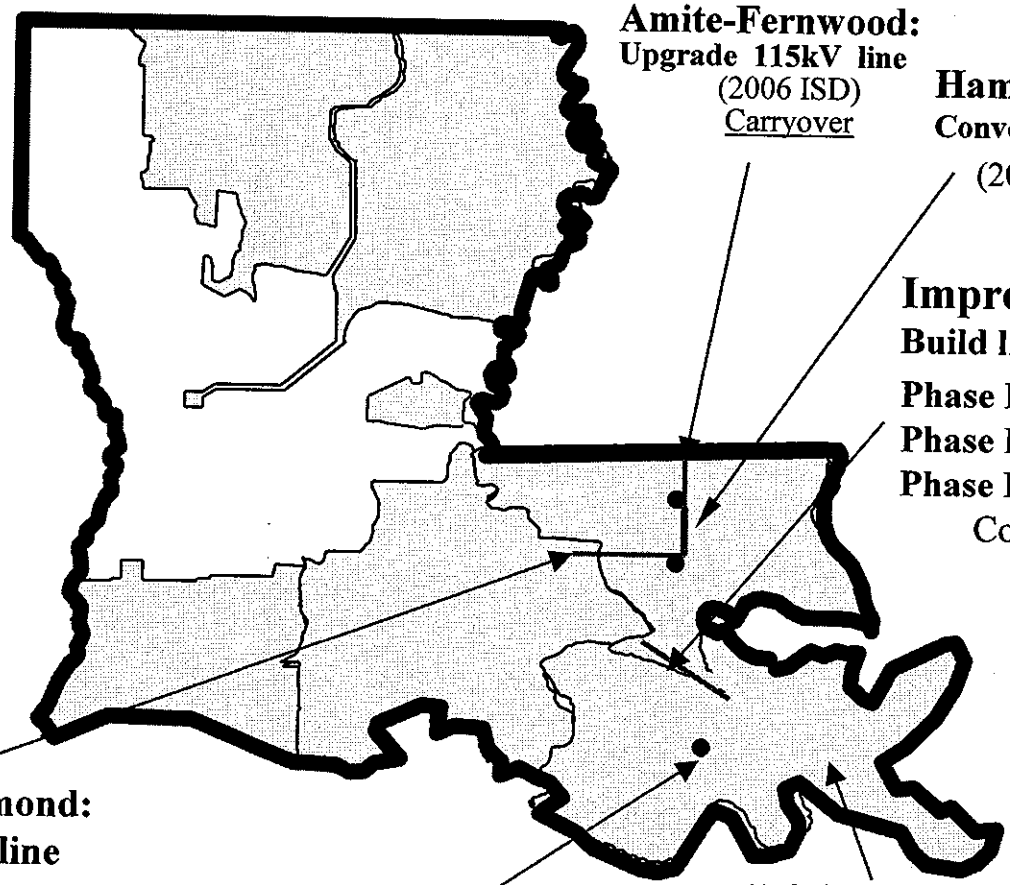
Entergy Transmission Planning Summit

New Orleans, LA

July 8, 2004

Entergy

2005 – 2006 ELI-South & ENOI Transmission Reliability Projects



Amite-Fernwood:
Upgrade 115kV line
(2006 ISD)
Carryover

Hammond-Amite:
Convert to 230kV
(2006 ISD)

Improve ASI:
Build lines -- Carryover
Phase I - Conway-Panama (2005 ISD)
Phase II- Panama-Frisco (2006 ISD)
Phase III- Coly-Vignes (2006 ISD)
Conway-Bagatelle (2007 ISD)

Loblolly-Hammond:
Build 230kV line
(2007 ISD)

Houma: Install breakers
(2005 ISD)

DSG – Carryover
Phase I (complete)
Phase II (2005 ISD)
Phase III (2006 ISD)
Phase IV (2007 ISD)

Entergy

Amite (ELI) – Fernwood (EMI) Line: Upgrade 115 kV Line

Scenario:

- The Amite to Fernwood 115kV line, located in south Louisiana, north of Lake Pontchartrain, extending north into southern Mississippi is 32 miles long. The section of line from Amite Substation to the Mississippi state line is approximately 17 miles and the section from the state line to Fernwood Substation is approximately 15 miles. This 115kV line, constructed with 4/0 ACSR conductor, is part of the Amite to McComb tie between ELI and EMI.
- Single contingencies in Mississippi of Brookhaven-Mallalieu or Mallalieu-Norfield in 2005 will cause overloads up to 24% on the Amite-Kentwood-Colonial Pipeline-Fernwood line segments.

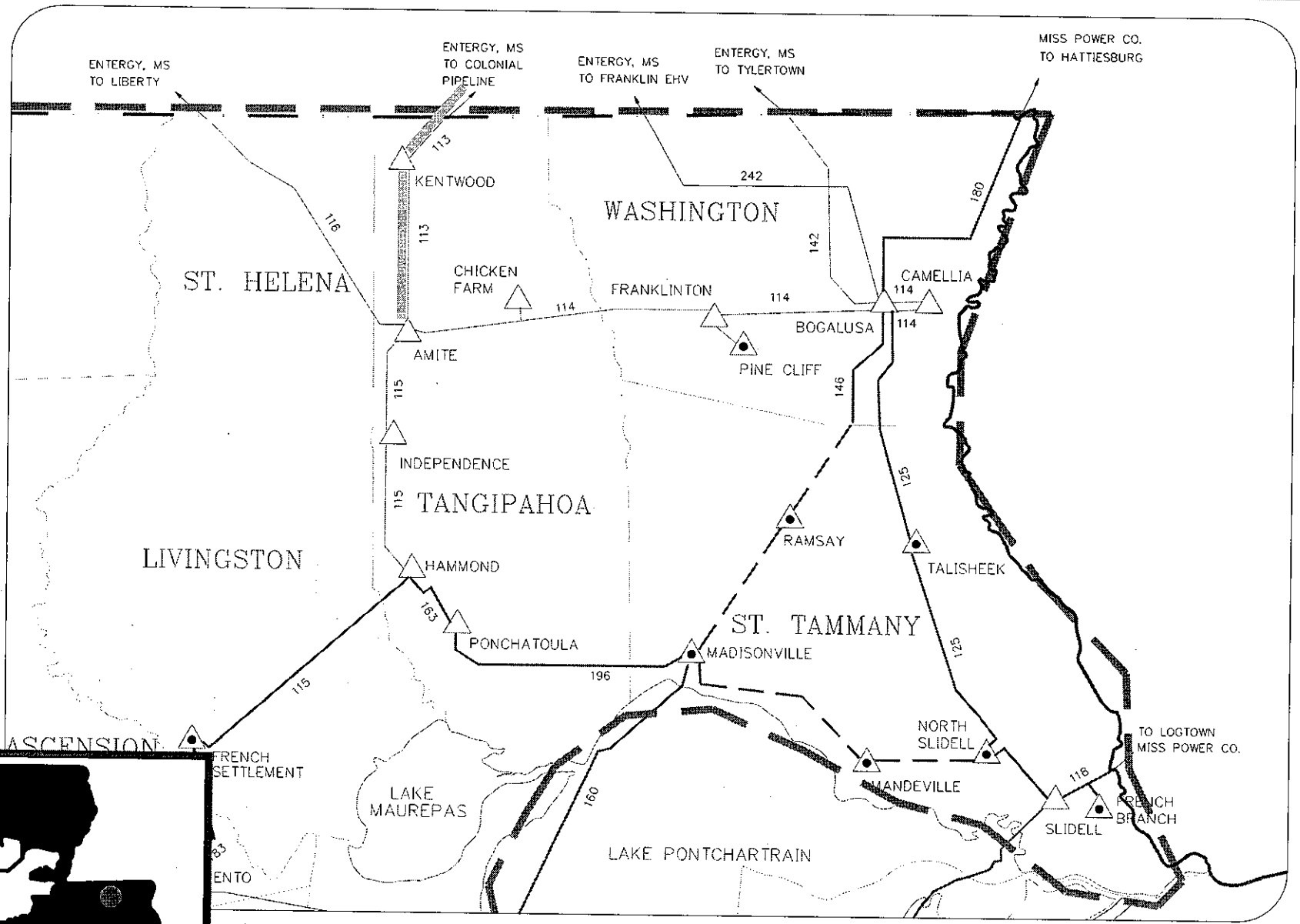
Recommended Solution:

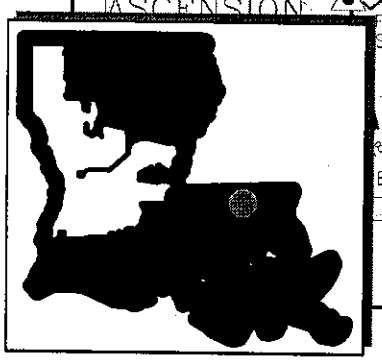
- Rebuild the line with 1,272MCM ACSR conductor to obtain a line rating of 261 MVA.

  NOTE: This project needs to be in place prior to the Hammond-Amite conversion and the Loblolly-Hammond 230kV line.

- Estimated Total Cost: $11.5 MM for ELI & EMI

Transmission Business





Entergy

Hammond-Independence-Amite 115kV: Convert to 230kV

Scenario:

- The Hammond-Independence-Amite 115kV line is limited by the Hammond 230/115 kV, 168 MVA autotransformer and an 800 Amp circuit breaker at Amite. This circuit overloads by 22% for a single contingency loss of Franklin-McKnight 500kV and by 18% for the loss of Bogalusa-Franklin 115 kV line in 2004.

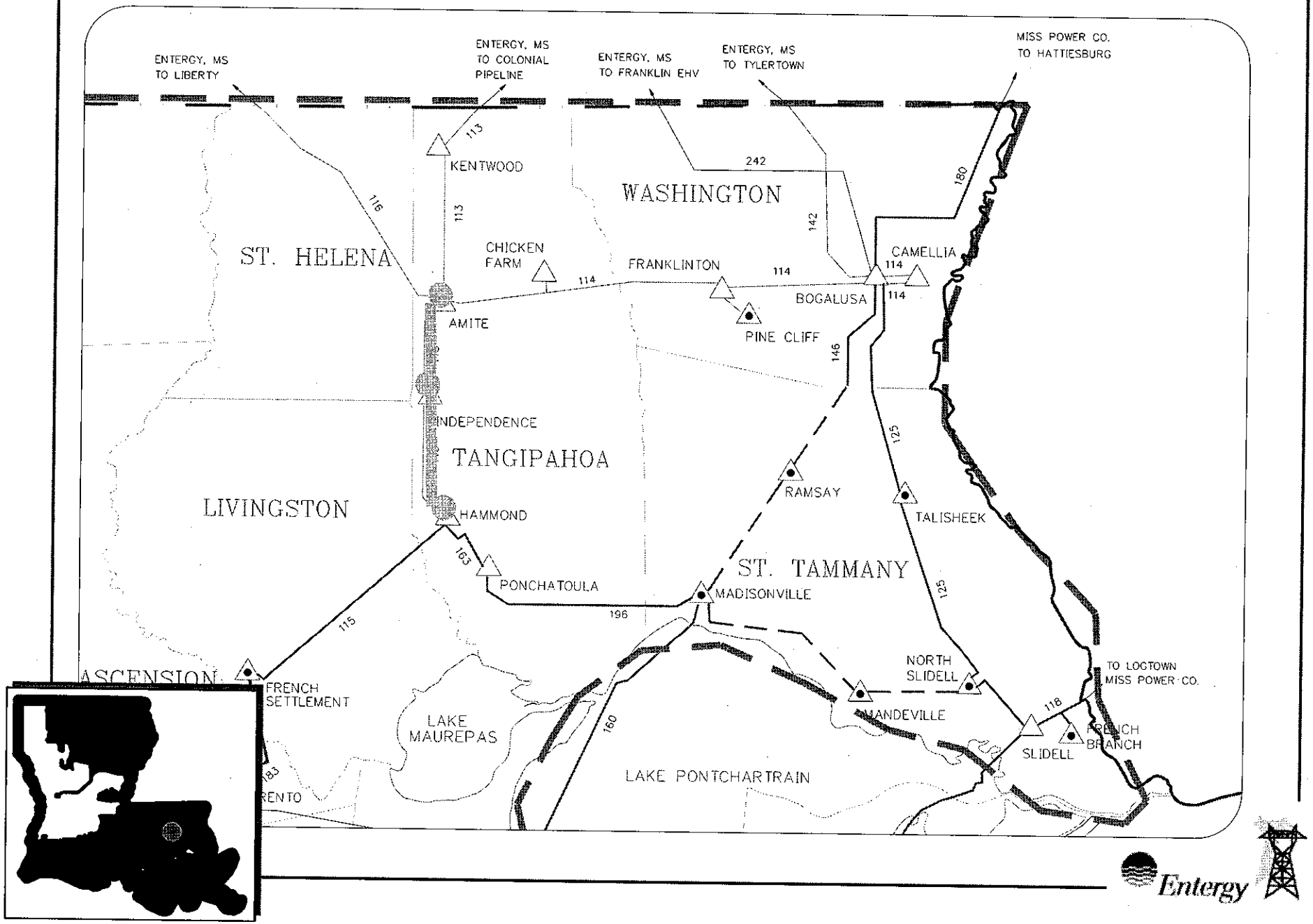
Recommended Solution:

- Convert the Hammond-Independence-Amite 115 kV line (constructed to 230kV) and the Independence 115 kV substation to 230kV operation. Install a 230/115 kV, 400MVA autotransformer at Amite and remove the autotransformer at Hammond.

NOTE: This project needs to be in place prior to the Loblolly-Hammond 230kV line.

- Estimated Cost: $7.4 MM

Transmission Business



Entergy

Loblolly-Hammond: Build 230 kV Line

Scenario:

- Entergy's transmission system north of Lake Pontchartrain is primarily supported from the ELI 230kV system between Willow Glen and Waterford.
  - Loss of the Franklin-McKnight 500kV line causes overloads on the underlying transmission system, primarily on the Gypsy-Madisonville 230kV line.
  - Adding another 230kV source from a location north of Willow Glen reduces loading on the existing system and improves load serving capability north of Lake Pontchartrain and into south Mississippi.

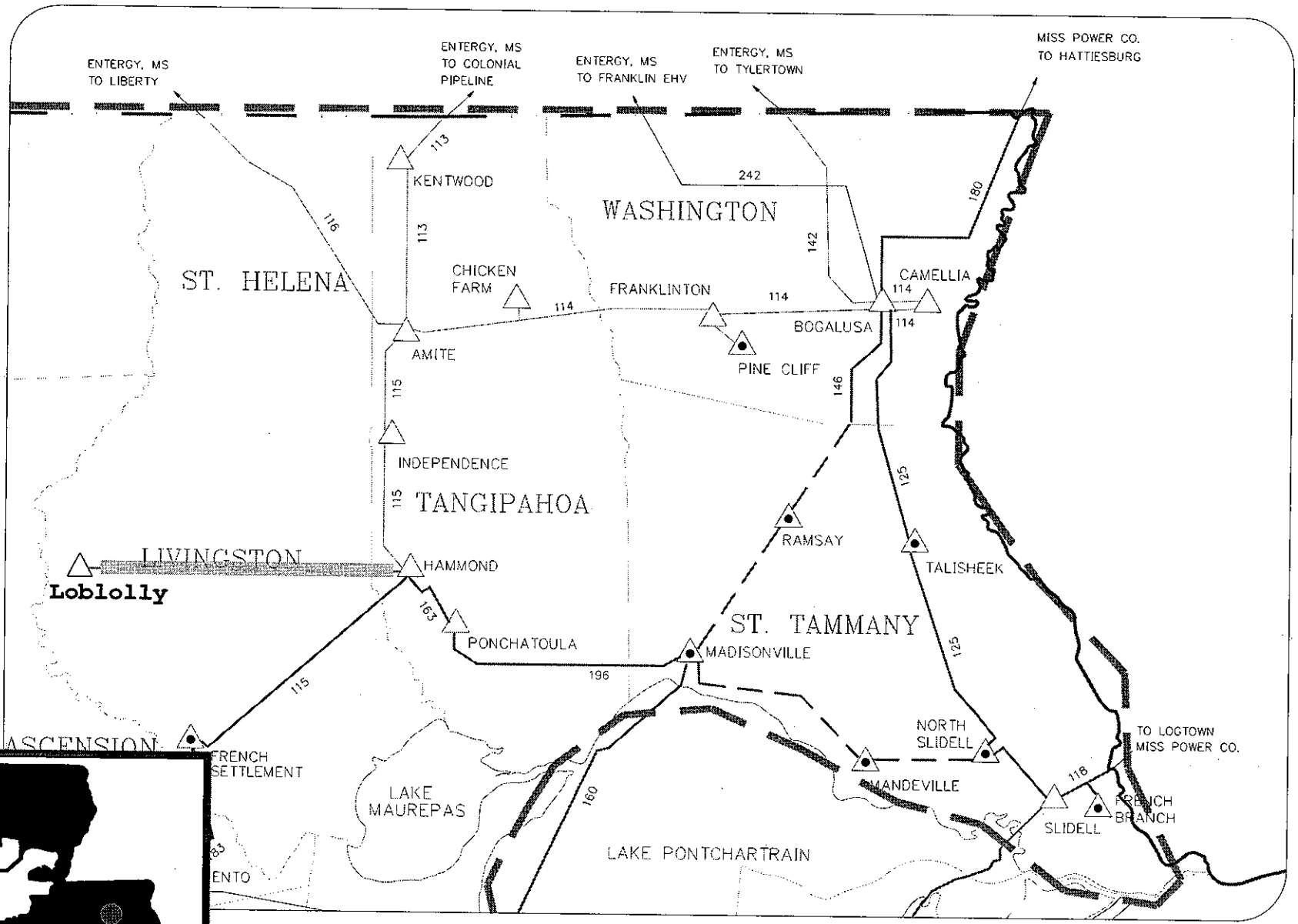
Recommended Solution:

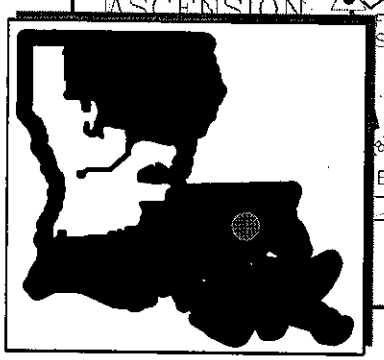
- Build a 230kV line, approximately 21 miles, from Loblolly to Hammond. Convert Coly–Loblolly 69kV (constructed for 230kV) to 230kV operation.

- NOTE: This line cannot be connected until the Amite - Fernwood 115kV line is upgraded and the Hammond-Amite line is converted.

- Estimated Cost: $23 MM

Transmission Business





Entergy

Houma 115kV: Install 3 Breakers

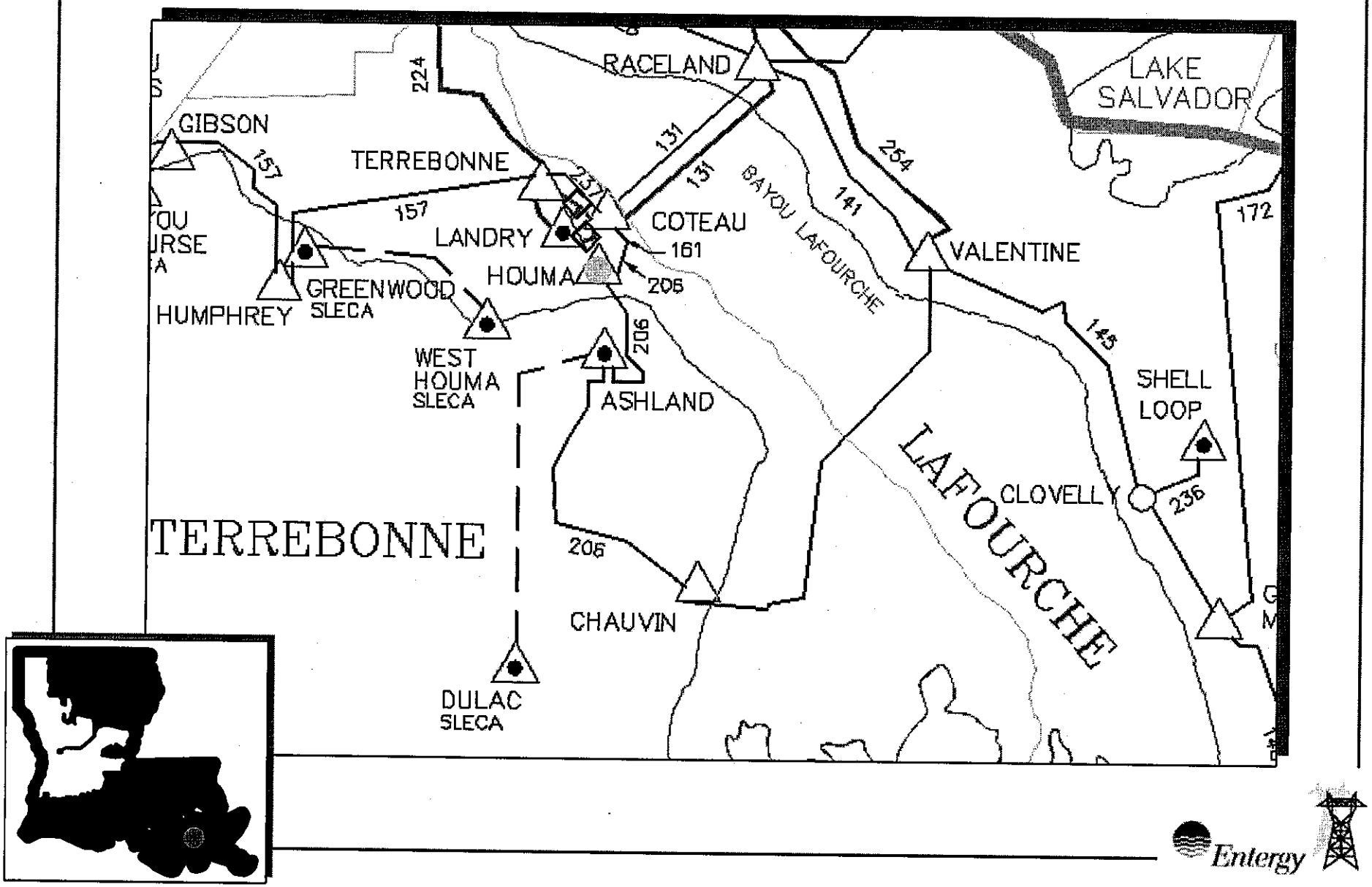
Scenario:

- Houma Substation has a single 115 kV operating bus with no 115 kV breakers. There have been frequent outages on the Chauvin – Houma – Ashland – Coteau 115 kV line and the Houma – City of Houma 115 kV line.

Recommended Solution:

- Install 3-115 kV breakers along with associated bus and switches at Houma Substation.

- Estimated Cost: $2.1 MM


RACELAND
LAKE SALVADOR
GIBSON
TERREBONNE
COTEAU
LANDRY
HOUMA
VALENTINE
BAYOU LAFOURCHE
GREENWOOD SLECA
HUMPHREY
WEST HOUMA SLECA
ASHLAND
SHELL LOOP
CLOVELLY
LAFOURCHE
TERREBONNE
CHAUVIN
DULAC SLECA
224
157
131
254
141
172
161
206
145
236
237

Entergy

ASI Improvement Plan - Phase I: Build Panama Switching Station & Conway-Panama 230 kV Line

Scenario:

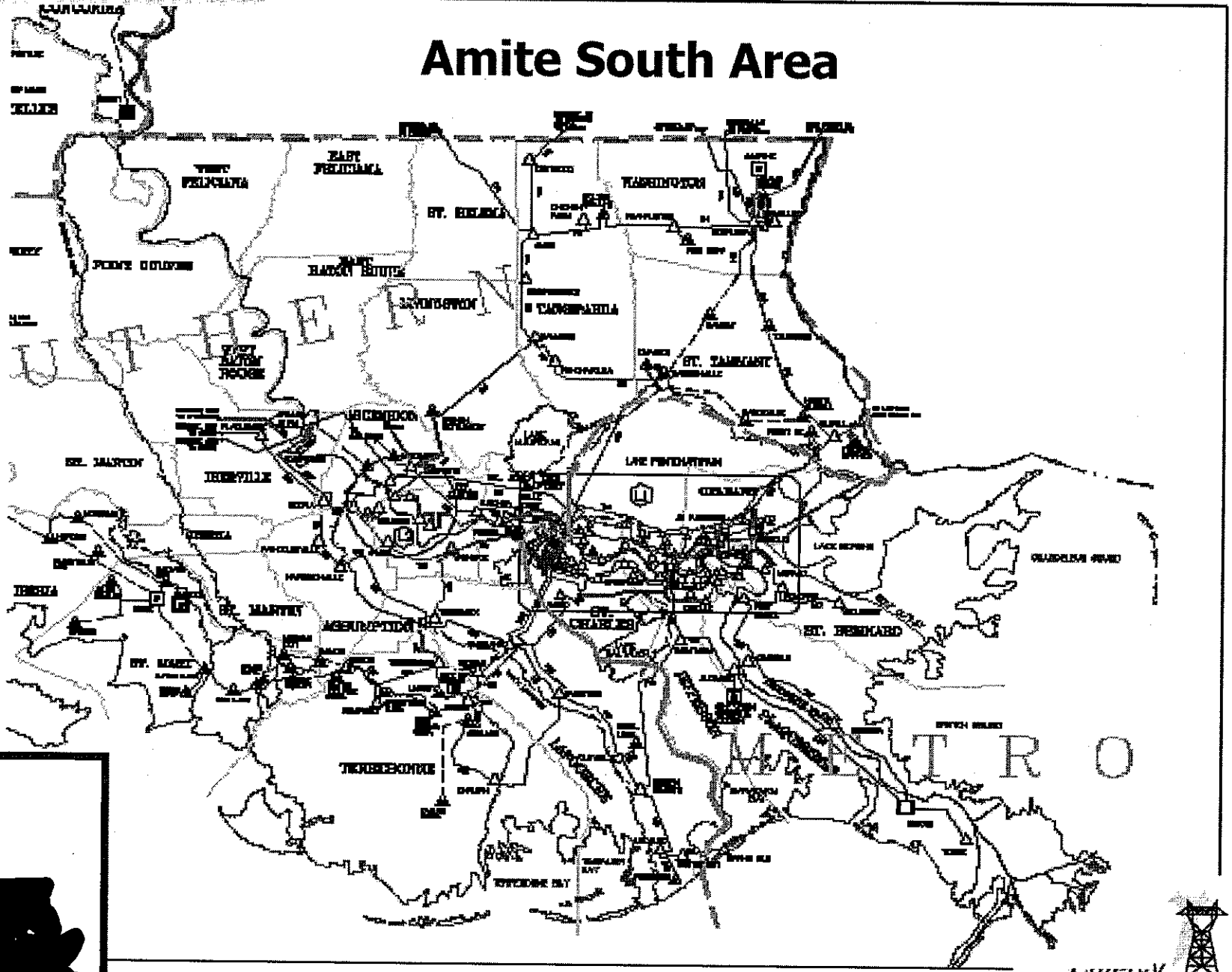
- The Amite South Import (ASI) capability has been approximately 2,100 MW during the summer operating season.
  - When generation in the Amite South area is low, Waterford–Willow Glen 500 kV line is most severe contingency, defining the ASI limit.
  - Recent studies have shown that the Conway–Bagatelle line is the most limiting transmission line that establishes the ASI capability.
  - The potential benefit from the use of Dynamic Line Rating equipment on this line is no longer adequate to maintain ASI capability at appropriate levels.

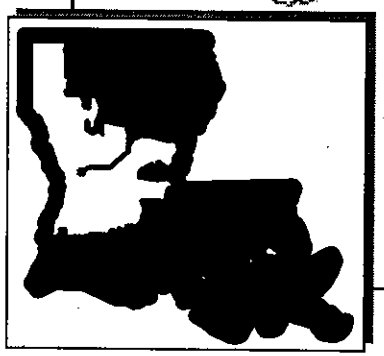
Recommended Solution:

- Build a 9 mile circuit from Conway to a new 230kV Panama switching station. This phase will increase the import capability to approximately 2,450MW.

- Estimated Total Cost - Phase I: $17.7 MM

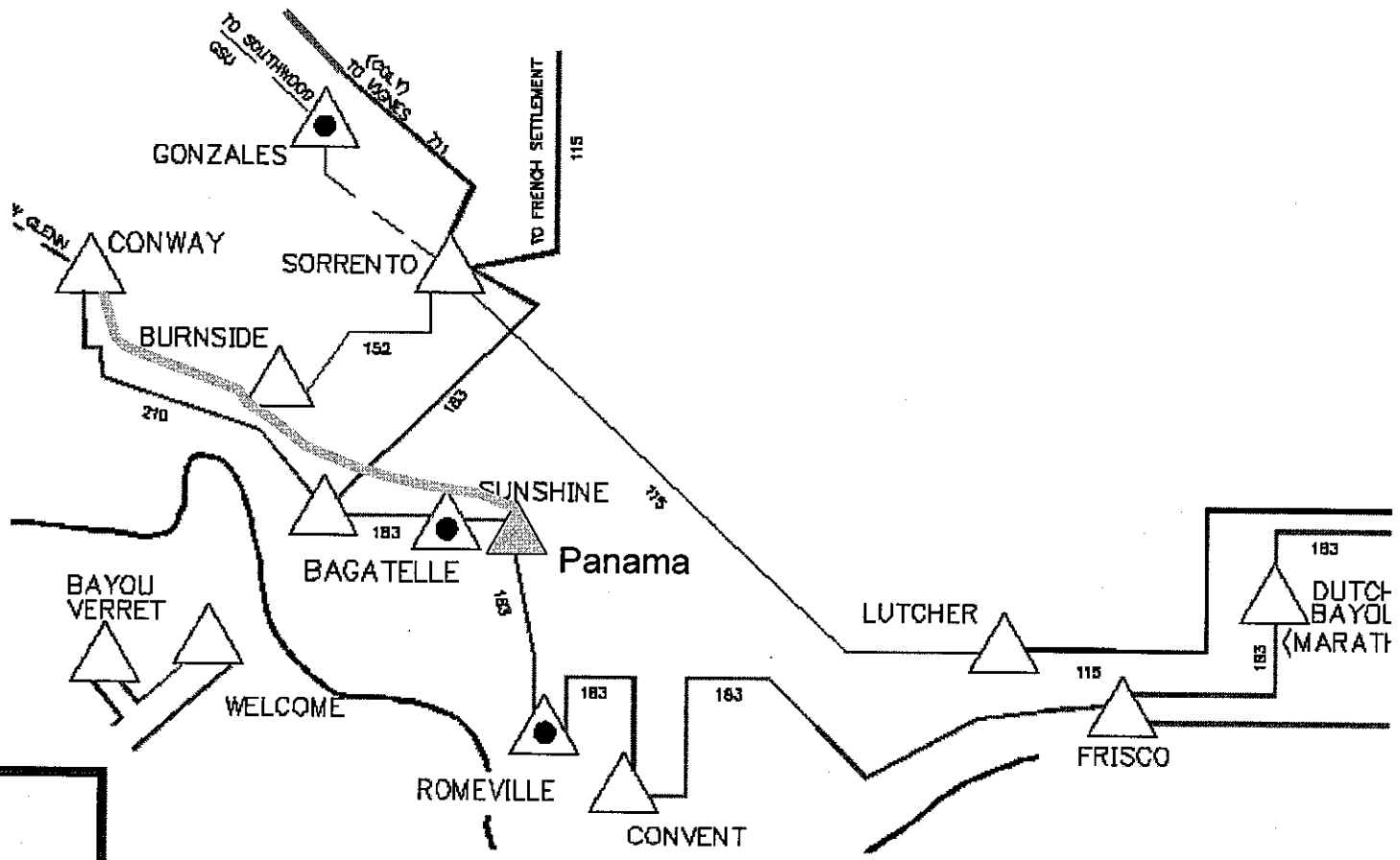
Amite South Area

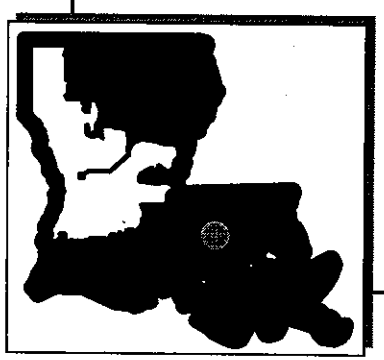




Entergy

Transmission Business





Entergy

ASI Improvement Plan - Phase II: Build Panama –Dutch Bayou 230kV Line

Scenario:

- As described in Phase I above.

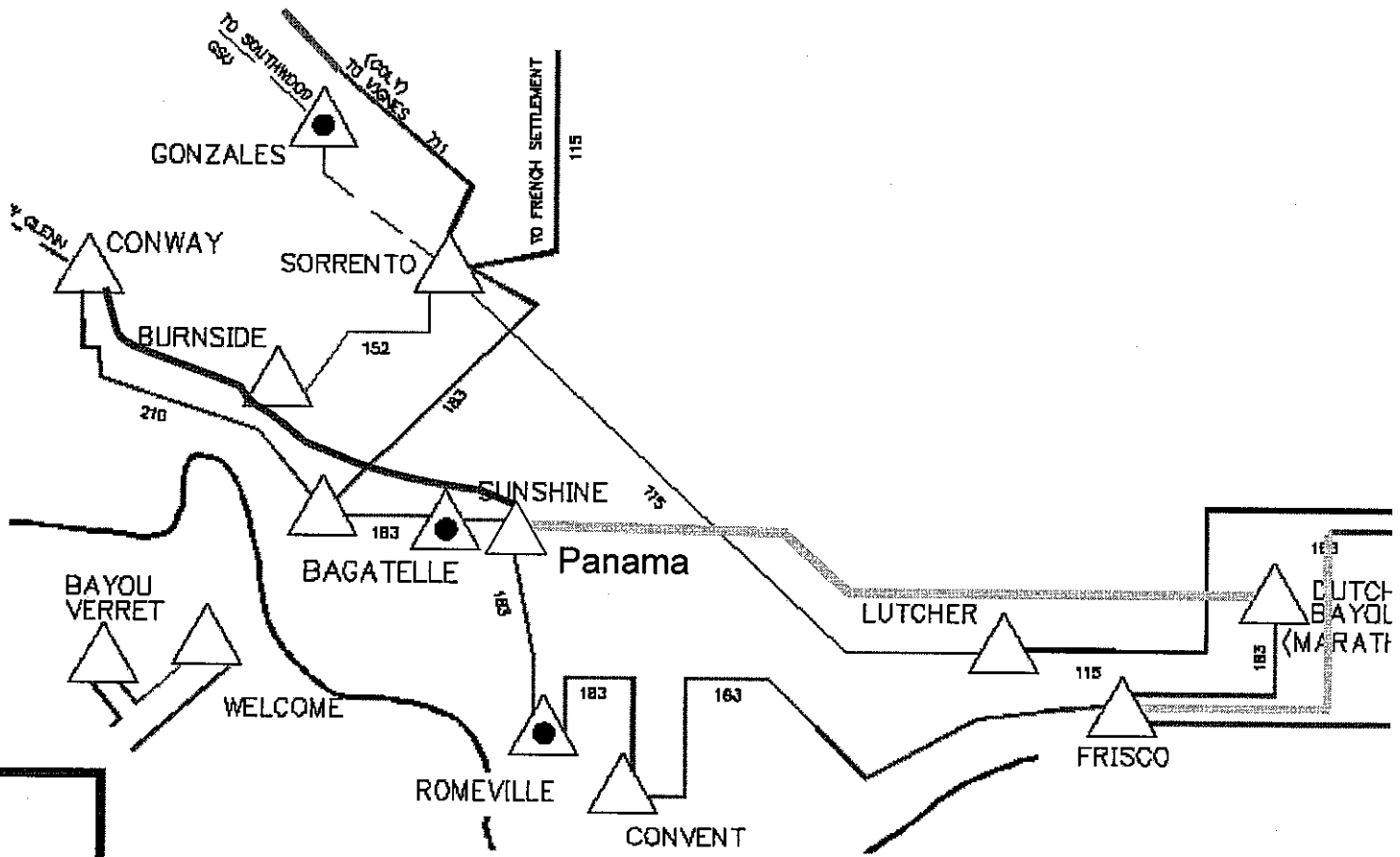
- Construction of Phase I (Conway-Panama) along with other upgrades will increase the ASI capability from 2,100 MW to 2,450 MW. Load growth in the Amite South area will require additional import capability into the area. The LPSC Transmission Study indicated that performing Phase II will also provide the Company with economic benefits.

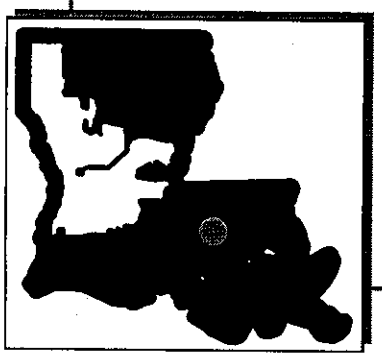
Recommended Solution:

- Build a new 230 kV circuit from Panama to Dutch Bayou. This circuit will be approximately 20 miles long and will be constructed using bundled 666MCM ACSR conductor (1,770 amps). Lines between Dutch Bayou, Frisco and Belle Point will be re-arranged. This phase will increase the import capability from 2,450 MW to approximately 2,685 MW.

- Estimated Total Cost – Phase II: $23 MM

Transmission Business





Entergy

ASI Improvement Plan - Phase III: Upgrade Coly-Vignes & Conway-Bagatelle 230 kV Lines

Scenario:

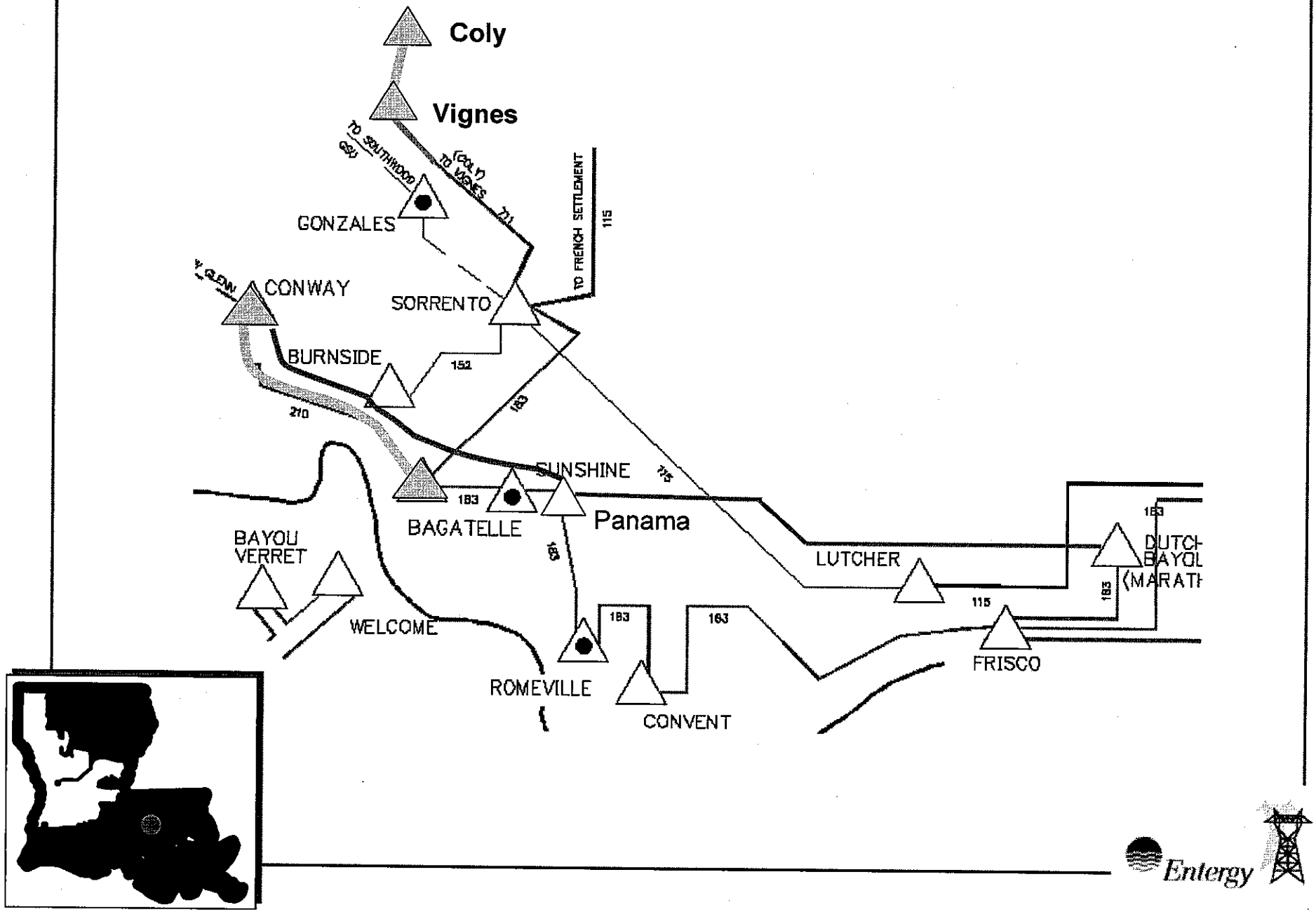
- As described in Phase I above.

- Construction of Phase I (Conway-Panama) along with other upgrades will increase the ASI capability from 2,100 MW to 2,450 MW.
- Construction of Phase II (Panama-Dutch Bayou) will increase the ASI capability from 2,450 MW to 2,685 MW.
- Load growth in the Amite South area will require additional import capability into the area. The LPSC Transmission Study indicated that performing Phase III will also provide the Company with economic benefits.

Recommended Solution:

- Upgrade the Coly-Vignes 230 kV line and the Conway-Bagatelle 230 kV line with 1,780 ACSR conductor (1,608Amps). This phase will increase the import capability to approximately 2,800MW.

- Estimated Total Cost: $16 MM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Vignes
TO SOUTHDOWN
(COLY)
TO VIGNES
GONZALES
TO FRENCH SETTLEMENT
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CONWAY
SORRENTO
BURNSIDE
152
210
183
SUNSHINE
BAGATELLE
183
Panama
BAYOU VERRET
WELCOME
LUTCHER
115
183
183
163
ROMEVILLE
CONVENT
FRISCO
Entergy

Down Stream of Gypsy (DSG) Area – Phase I (complete)

Scenario:

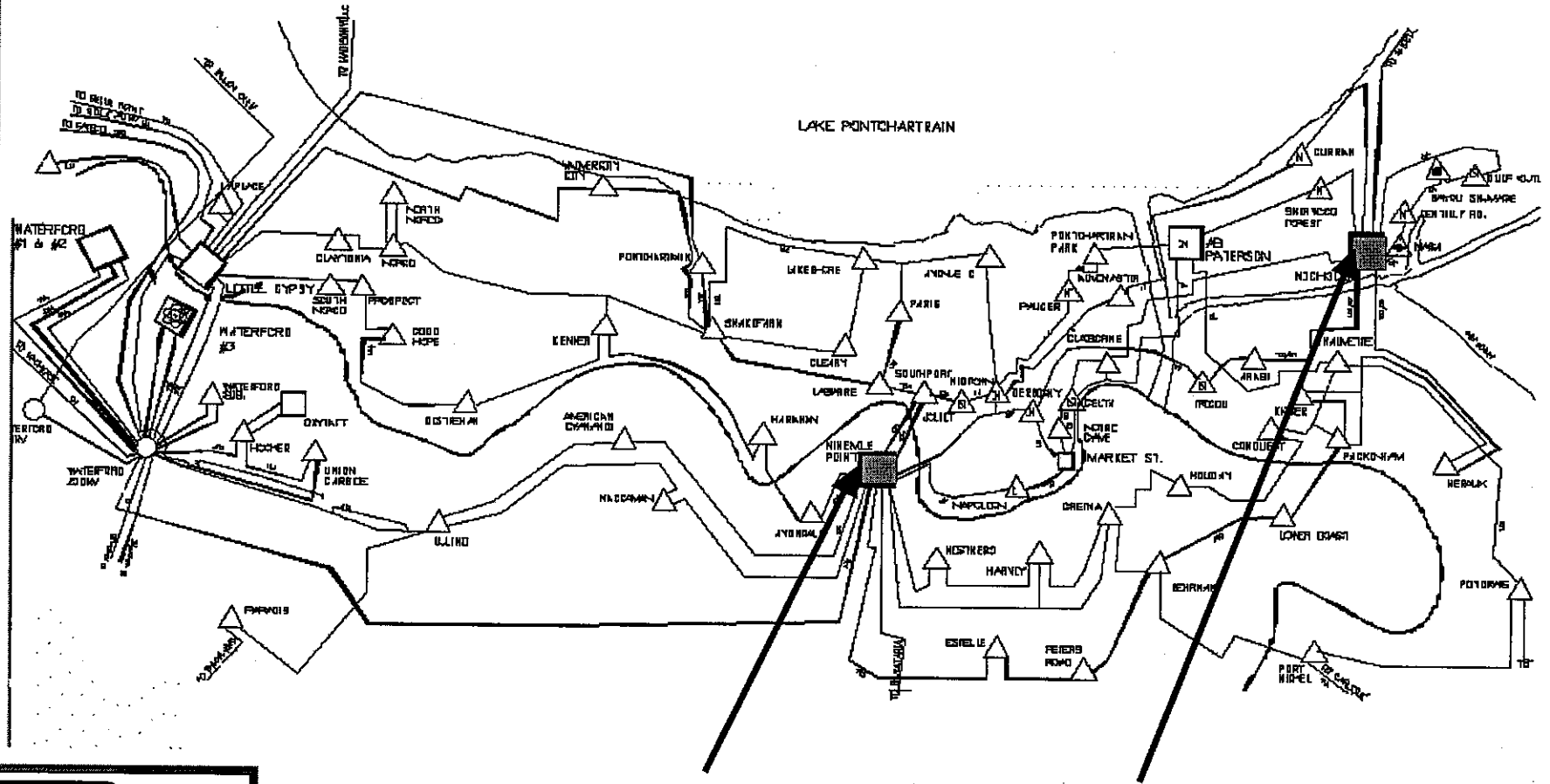
- For the loss of the Waterford to Ninemile 230 kV line and one of the 230 kV generating units at Ninemile or Michoud, the DSG area's load-serving capability is approximately 3,290 MW, which is less than the projected 2004 peak load of 3,672 MW.
- Transmission has placed a requirement for all eight generating units at Ninemile and Michoud to run during high loading conditions, which typically occurs from June through August.
- The Company requested an operating condition of five units at Ninemile and Michoud.

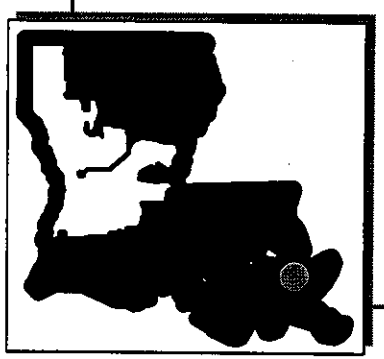
Recommended Solution:

- In order to attain the desired operating condition, Entergy has proposed the Downstream of Gypsy Transmission Investment. This transmission proposal has been divided into four phases over four years.
  - Phase I – Install one 151.2 MVAr capacitor bank at Ninemile 230kV and two 84.6MVAr capacitor banks at Michoud 230kV.
  - Phase II, III & IV will be described in subsequent slides

- Estimated Total Cost - Phase I: $2.6 MM

2004 DSG Area Transmission Improvements





Ninemile: Install one 151.2 MVAR capacitor bank

(complete)

Michoud: Install two 86.4 MVAR capacitor banks

(complete)

Entergy

Down Stream of Gypsy (DSG) Area – Phase II

Scenario:

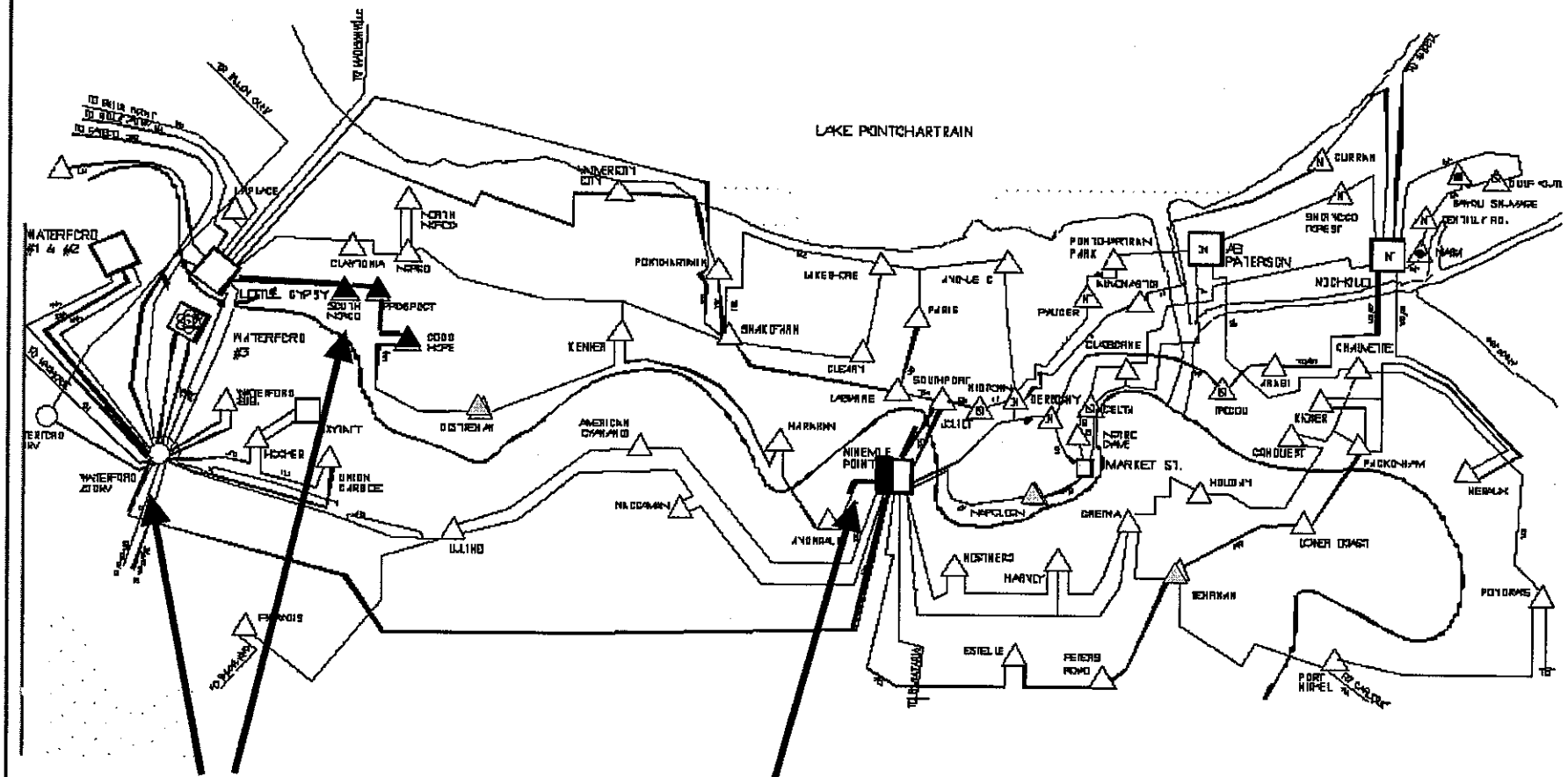
- As described above

Recommended Solution:

- In order to attain the desired operating condition, Entergy has proposed the Downstream of Gypsy Transmission Investment. This transmission proposal has been divided into four phases over four years.
  - Phase II (2005)-Upgrade Gypsy-South Norco-Prospect-Good Hope 230kV, upgrade Waterford-Ninemile 230kV, install 300 MVAr SVC at Ninemile, and install 200MVAr of capacitor banks at Behrman, Napoleon, and Destrehan.

- Estimated Total Cost - Phase II: $31.4 MM

2005 DSG Area Transmission Improvements



- Rebuild 230kV line from Gypsy-S. Norco-Prospect-Good Hope
- Replace underrated breakers and switches
- Upgrade portion of Waterford-Ninemile 230kV line
- Rebuild 230kV Ninemile-Waterford up to Churchill Junction
- Move Avondale line to new bay & rebuild 1.7 miles. Double circuit with Waggaman
- Install 300 MVAr SVC at Ninemile (turnkey)
- Relocate Southport ckt 1 to new bay at Ninemile

△ Install 200 MVAr of capacitor banks at Behrman, Napoleon & Destrehan

Entergy

Down Stream of Gypsy (DSG) Area – Phase III

Scenario:

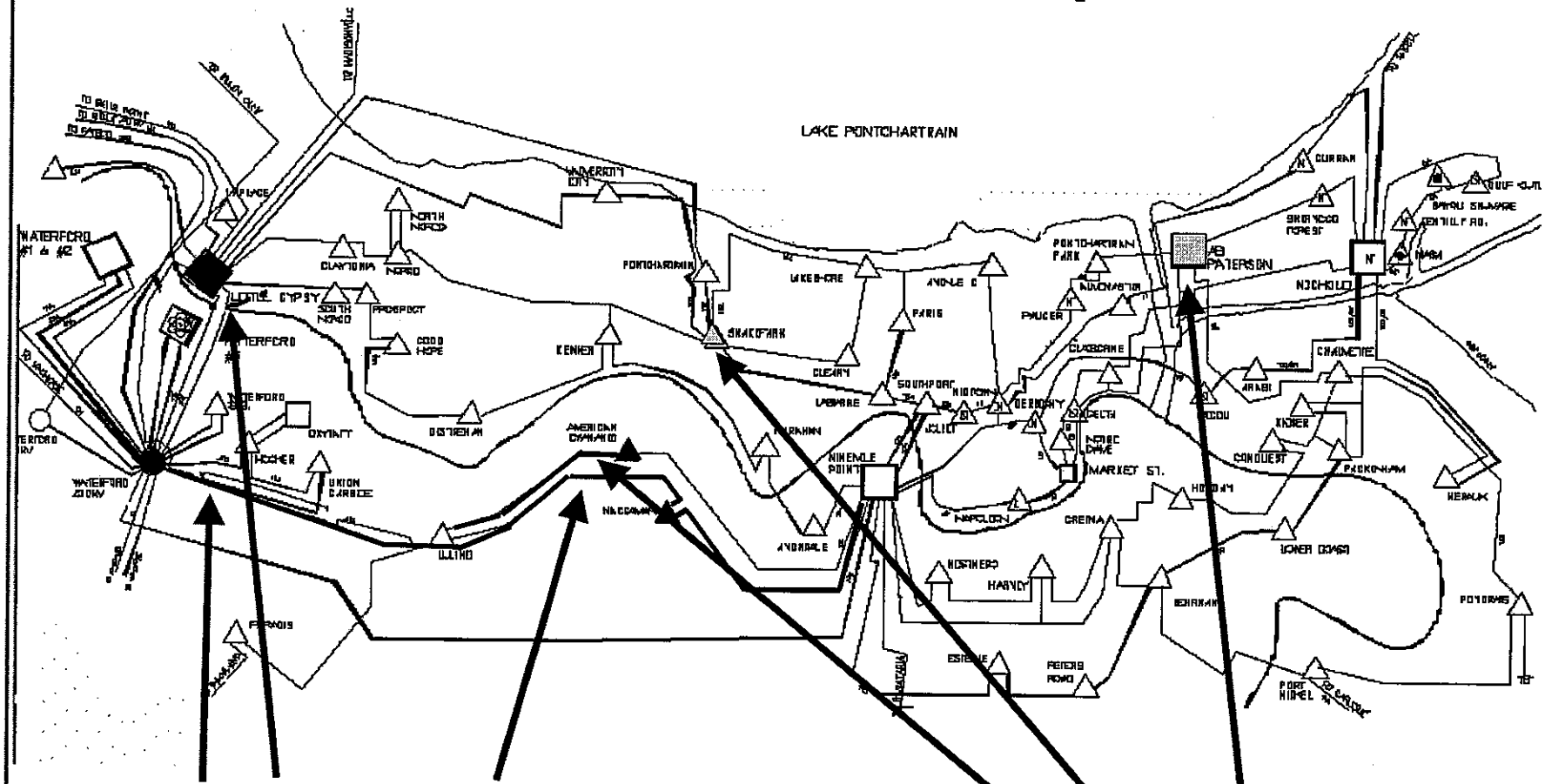
- As described above

Recommended Solution:

- In order to attain the desired operating condition, Entergy has proposed the Downstream of Gypsy Transmission Investment. This transmission proposal has been divided into four phases over four years.
  - Phase III (2006) - Install parallel 230/115 kV autotransformer at Little Gypsy Substation, build new 230kV line segment from Waterford-Luling (bypass Luling) and conversion of the existing Luling-Waggaman-Ninemile 115kV line to 230kV operation, upgrade Luling–American Cyanamid 115 kV, and install 100 MVAr of capacitor banks at Paterson and Snakefarm Substations.

- Estimated Total Cost- Phase III: $36.4 MM

2006 DSG Area Transmission Improvements



- Install 230/115 kV parallel autotransformer at Gypsy including 2 new circuit breakers
- Build new 230 kV bay at Ninemile for Waggaman line
- Build new 230 kV segment from Waterford to Luling (bypass Luling)
- Convert Luling-Waggaman-Ninemile 115 kV to 230 kV. Replace underrated switches and breakers.
- Rebuild Luling-American Cyanamid 115 kV
- Install 100 MVAr of capacitor banks at Paterson and Snakefarm

△

Entergy

Down Stream of Gypsy (DSG) Area – Phase IV

Scenario:

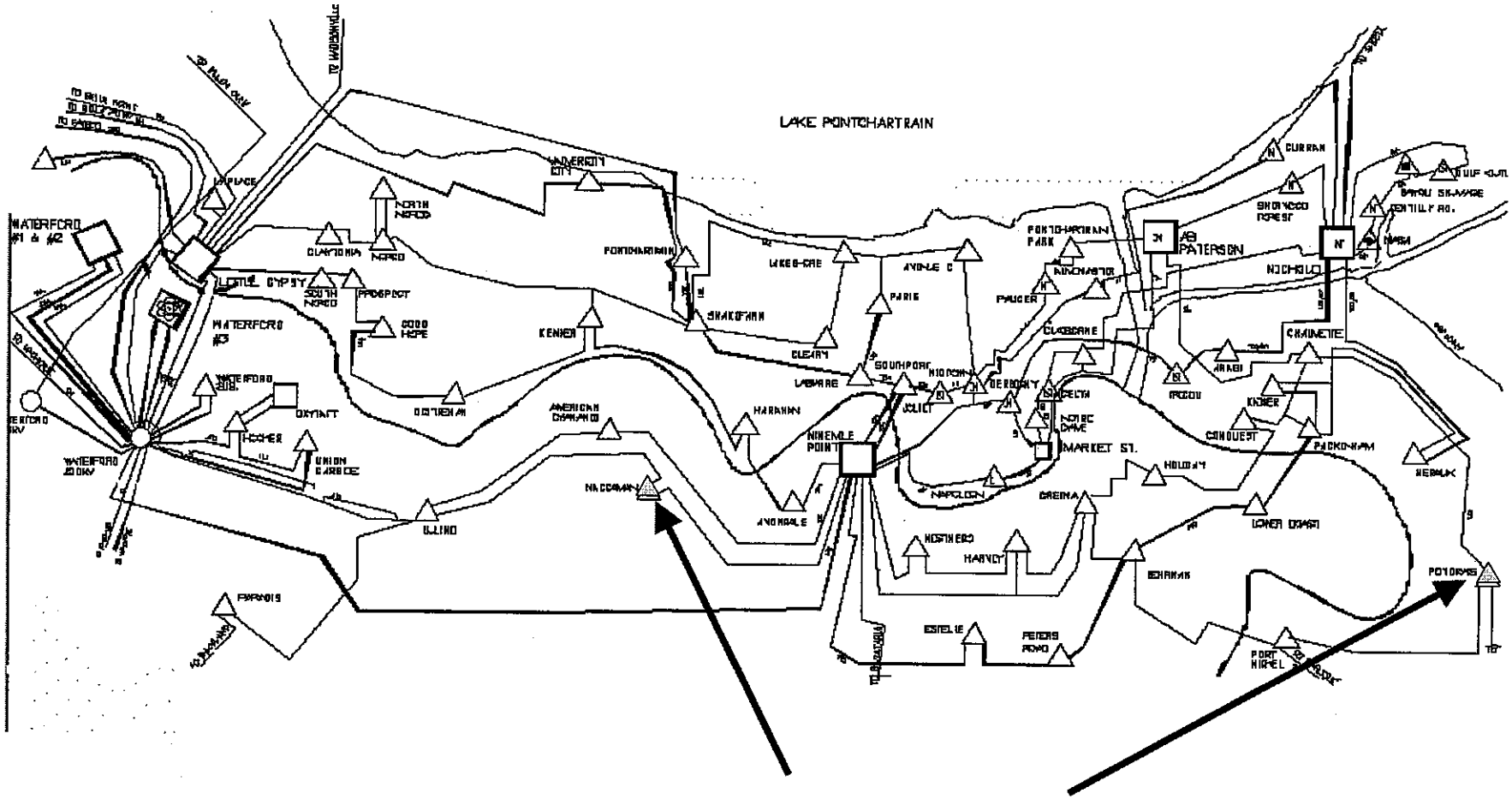
- As described above

Recommended Solution:

- In order to attain the desired operating condition, Entergy has proposed the Downstream of Gypsy Transmission Investment. This transmission proposal has been divided into four phases over four years.
  - Phase IV (2007) - Install 100 MVAr of capacitor banks at Waggaman and Poydras Substations.

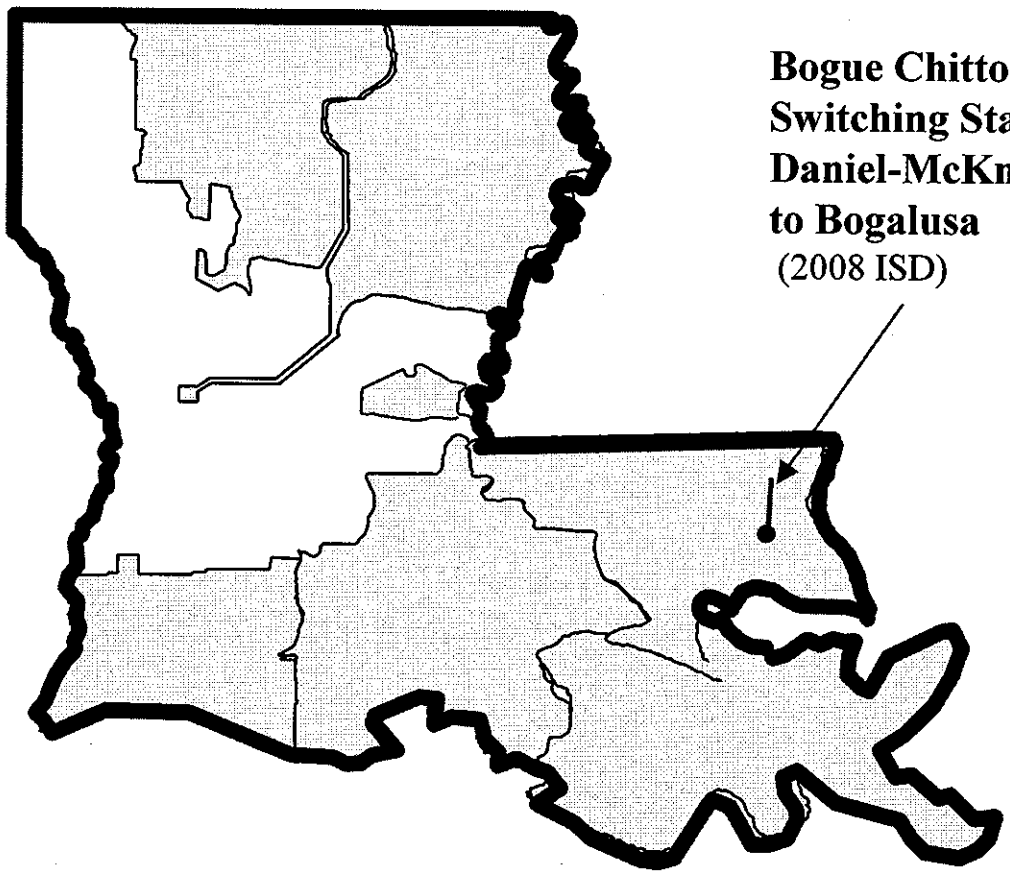
- Estimated Total Cost- Phase IV: $1.8 MM

2007 DSG Area Transmission Improvements



Entergy

2007 - 2008 ELI-South Transmission Expansion Projects



Bogue Chitto: Build 500kV Switching Station, tap Daniel-McKnight to Bogalusa
(2008 ISD)

Entergy

Bogalusa-Daniel-McKnight: Build Bogue Chitto Switching Station & 500kV Line

Scenario:

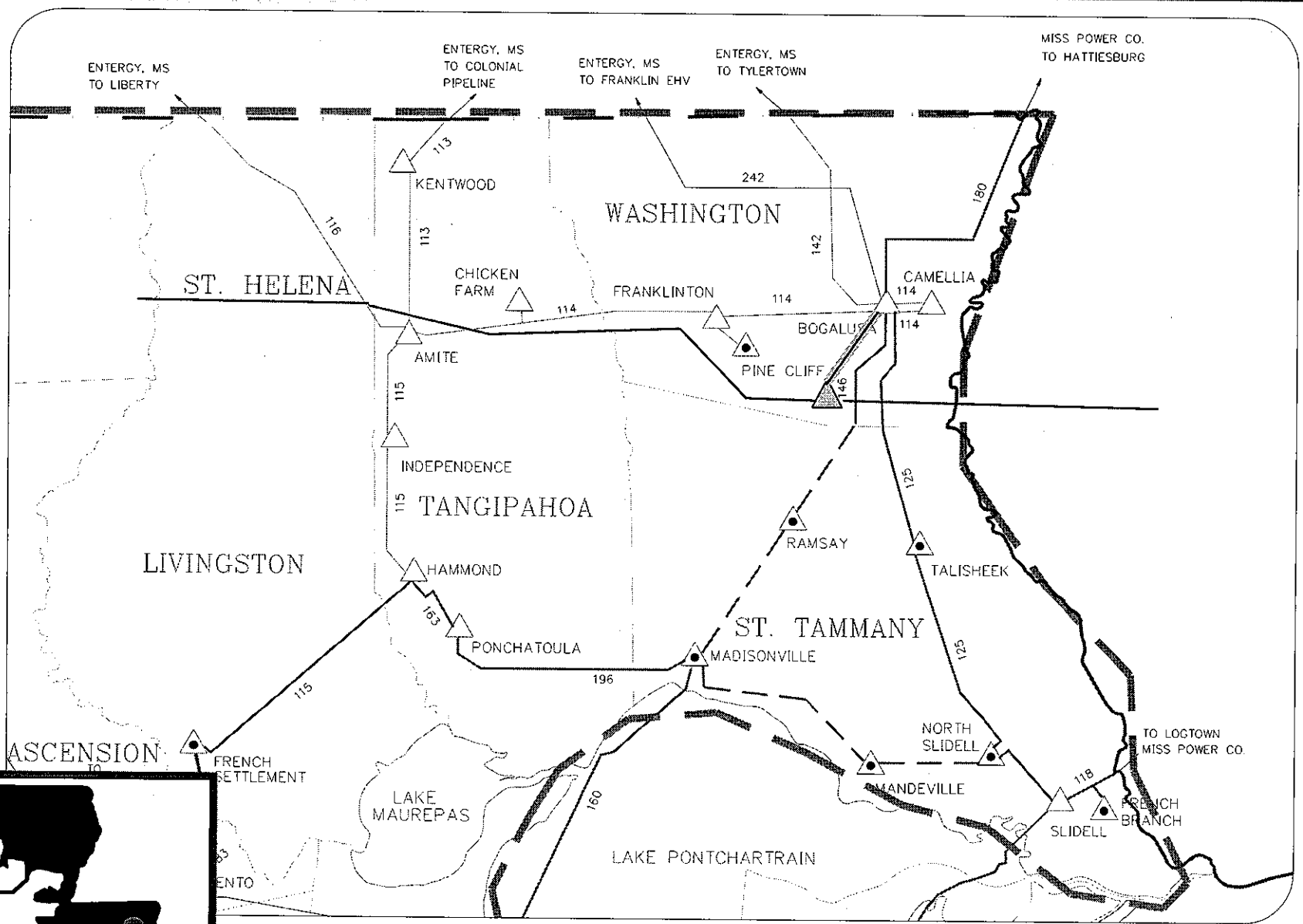
- Power transfers from the Entergy system are limited by the flow on the Franklin to McKnight 500 kV line flowgate. Loss of this line causes the underlying transmission system, particularly the Little Gypsy to Madisonville 230 kV line, to become overloaded.

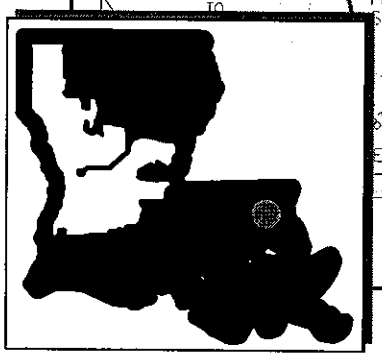
Recommended Solution:

- Build a 500 kV switching station (Bogue Chitto) on the Daniel-McKnight 500 kV line south of Bogalusa. Build an approximately 12-mile circuit to Bogalusa 500 kV substation.
  - This arrangement redirects approximately 620 MW of flow off of Franklin-McKnight, which in turn lowers the post-contingency flow on Gypsy - Madisonville by approximately 200 MW.

- Estimated Cost: $38.5 MM

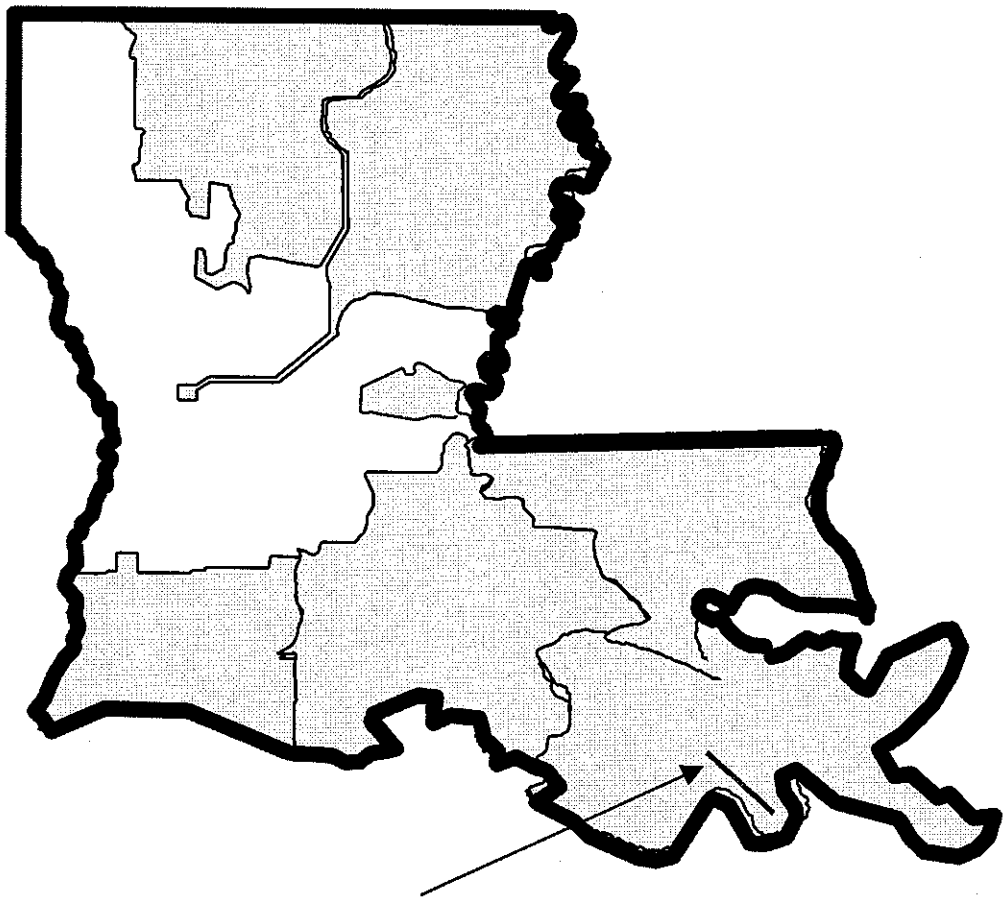
Transmission Business





Entergy

ELI-South Transmission Target Areas
2009 and Beyond



Golden Meadow - Fourchon:
Build 115kV

Entergy

Golden Meadow-Fourchon: Build 115kV Line

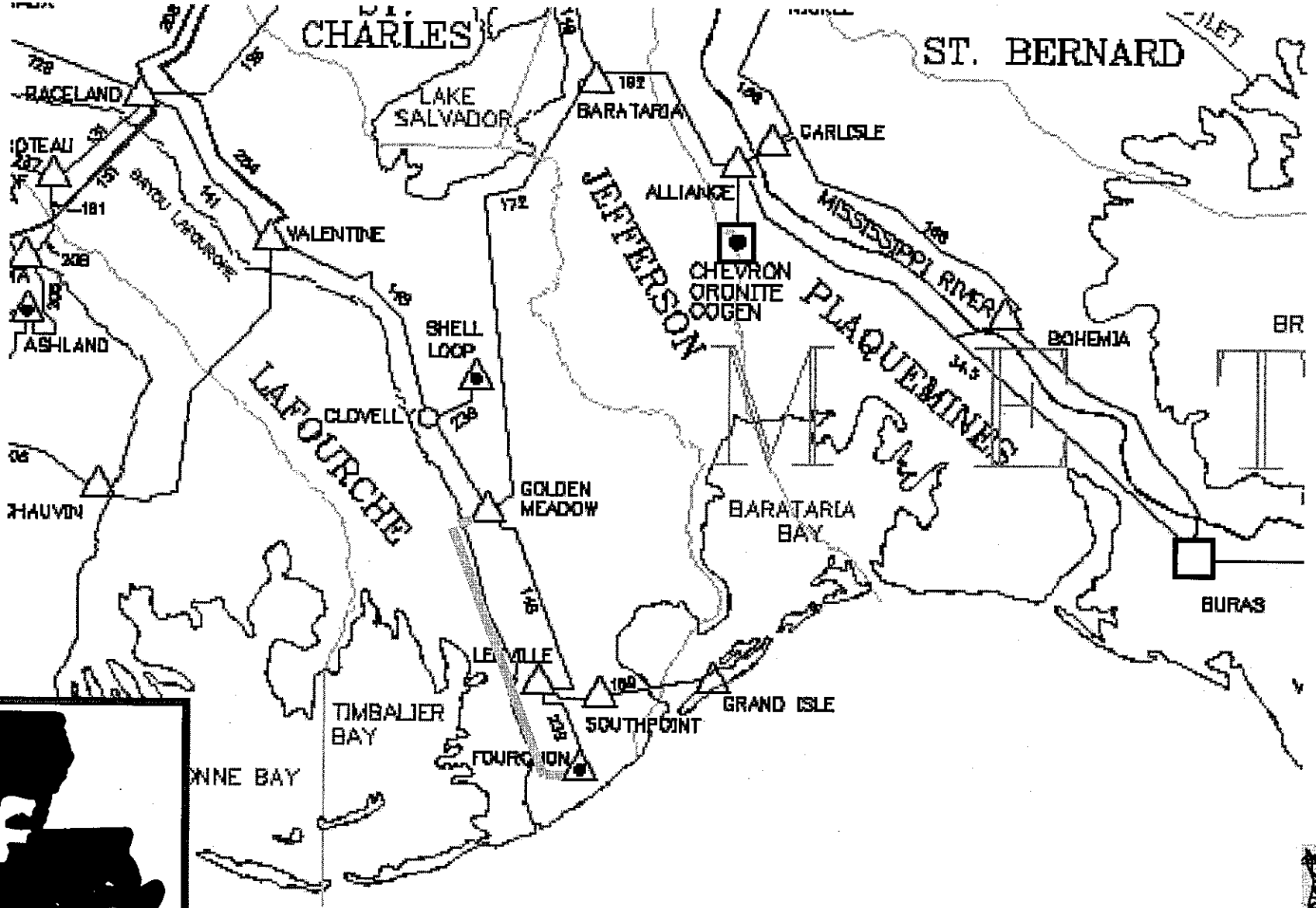
Scenario:

- Leeville and Fourchon are radial substations from Golden Meadow, serving all Fourchon and Grand Isle load (~93 MW in 2006).
  - The local area distribution system can backup approximately 40 MW under the loss of Golden Meadow-Leeville. Loading beyond this level cannot be supported.

Recommended Solution:

- Build new 115kV line from Golden Meadow to Fourchon.

- Estimated Cost: $22.3 MM


CHARLES
ST. BERNARD
RACELAND
LAKE SALVADOR
BARATARIA
CARLISLE
ALLIANCE
JEFFERSON
PLAQUEMINES
CHEVRON ORONITE COGEN
MISSISSIPPI RIVER
BOHEMIA
VALENTINE
ASHLAND
SHELL LOOP
CLOVELLY
LAFOURCHE
GOLDEN MEADOW
BARATARIA BAY
BURAS
TIMBALIER BAY
SOUTHPOINT
GRAND ISLE
Entergy

Questions

Entergy Mississippi, Inc.

Proposed Transmission Reliability Projects

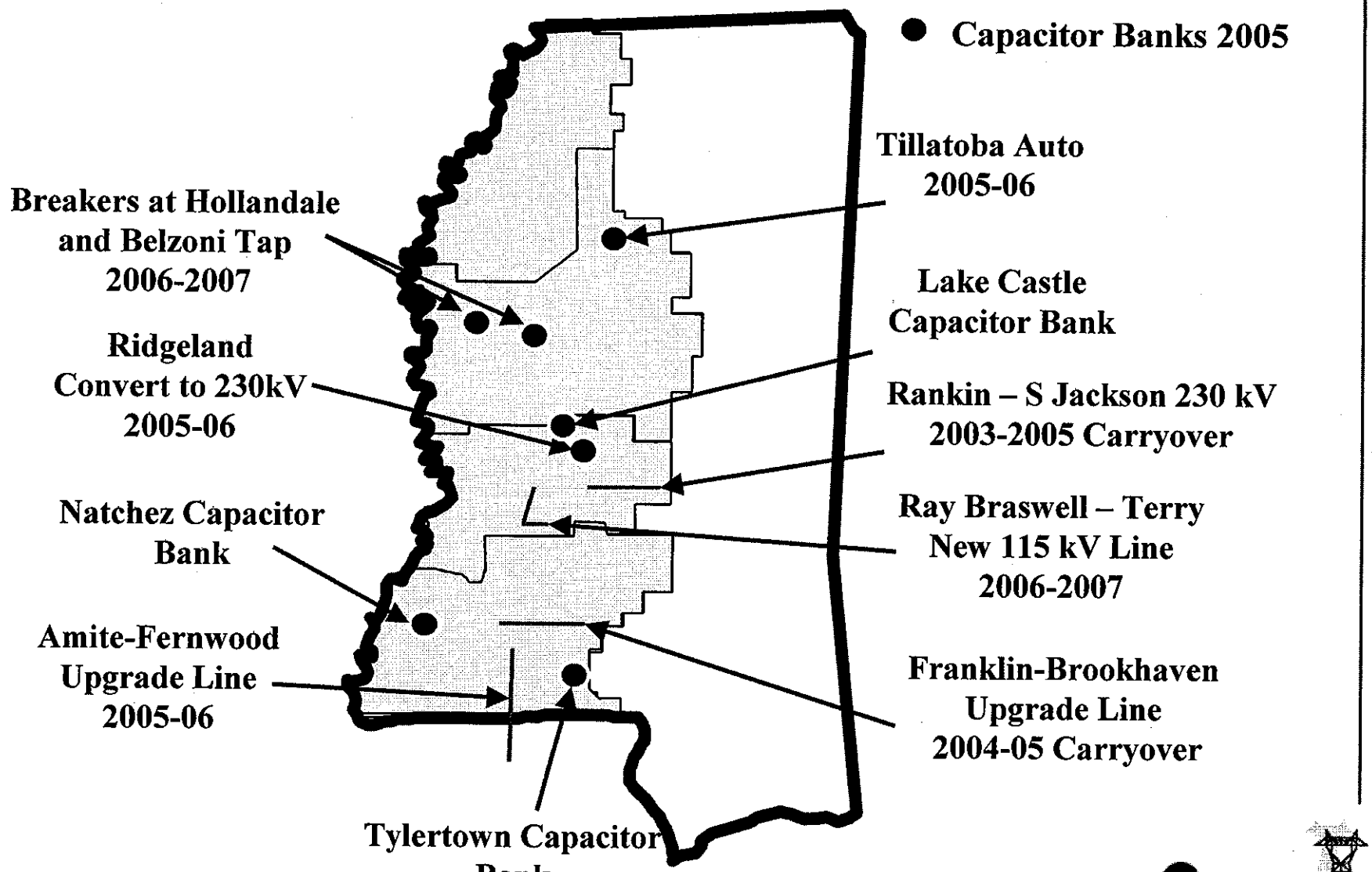
Entergy Transmission Planning Summit

New Orleans, LA

July 8, 2004

Entergy

2005 - 2006 EMI Transmission Reliability Projects



Entergy

2004-05

Franklin to Brookhaven: Upgrade line capacity

Scenario:

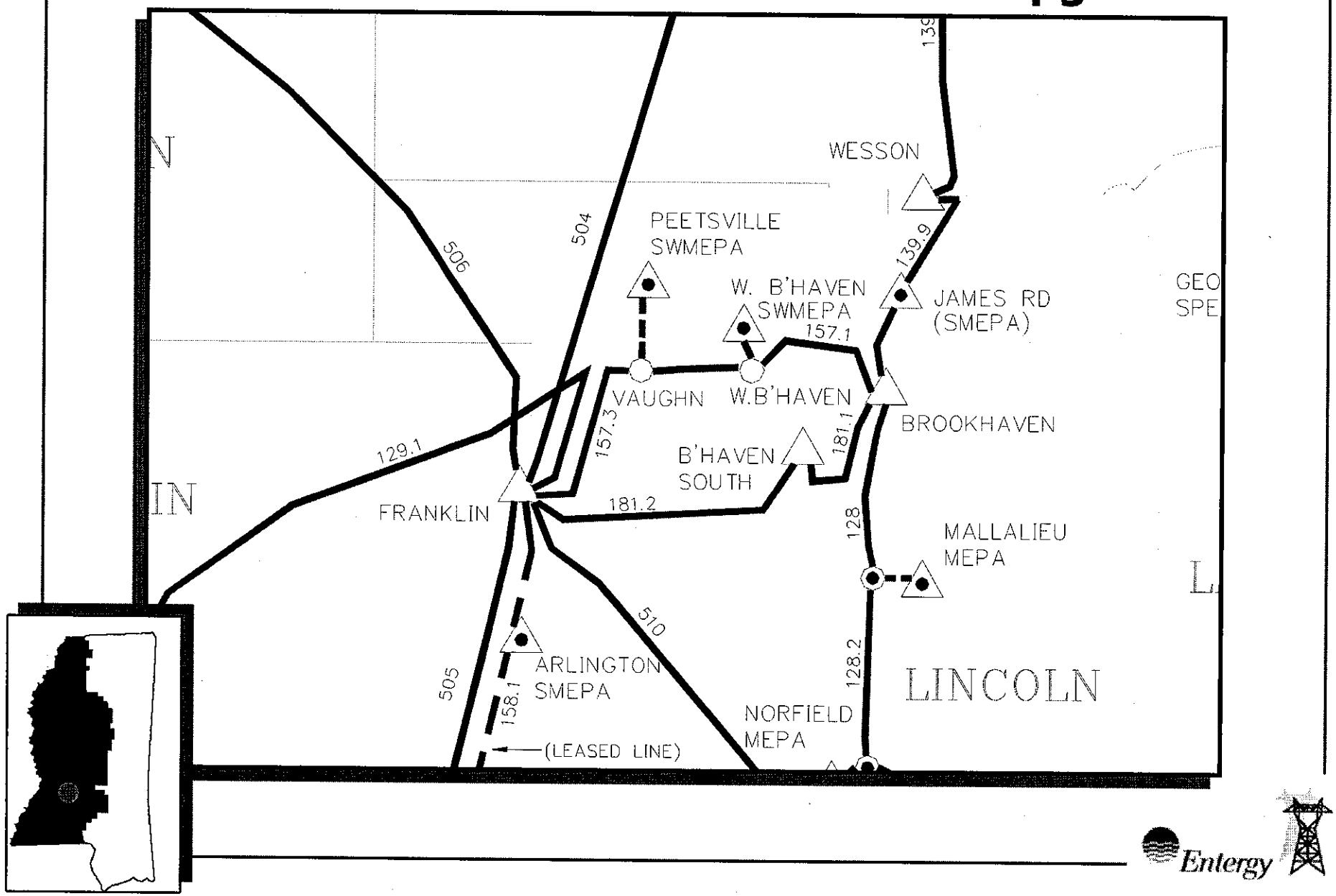
- Franklin - Brookhaven transmission path consist of two 115kV lines
  - Provides power from 500kV system at Franklin to the 115 kV system in southern Mississippi
  - North line (Franklin-Vaughn-W. Brookhaven-Brookhaven) is constructed of 666 ACSR.
- The loss of the south line (Franklin-Brookhaven S.-Brookhaven) will overload the north line by 40%.
  - No operating procedures to mitigate this circumstance.

Recommended Solution:

- Upgrade the line from Franklin to Vaughn to West Brookhaven to Brookhaven (18.26 miles) with 1590 ACSR. Upgrade all appropriate switches, bus work and other devices as necessary.

- Estimated Cost: $5.7 MM

Franklin – Brookhaven 115 kV Line Upgrade



Entergy

2003-05

Jackson Improvement Plan Phase I: Rankin to S. Jackson: Build new 230kV Line

Scenario:

- The 115kV system serving the Jackson area is heavily loaded. The system will serve about 1,000 MW in 2005.

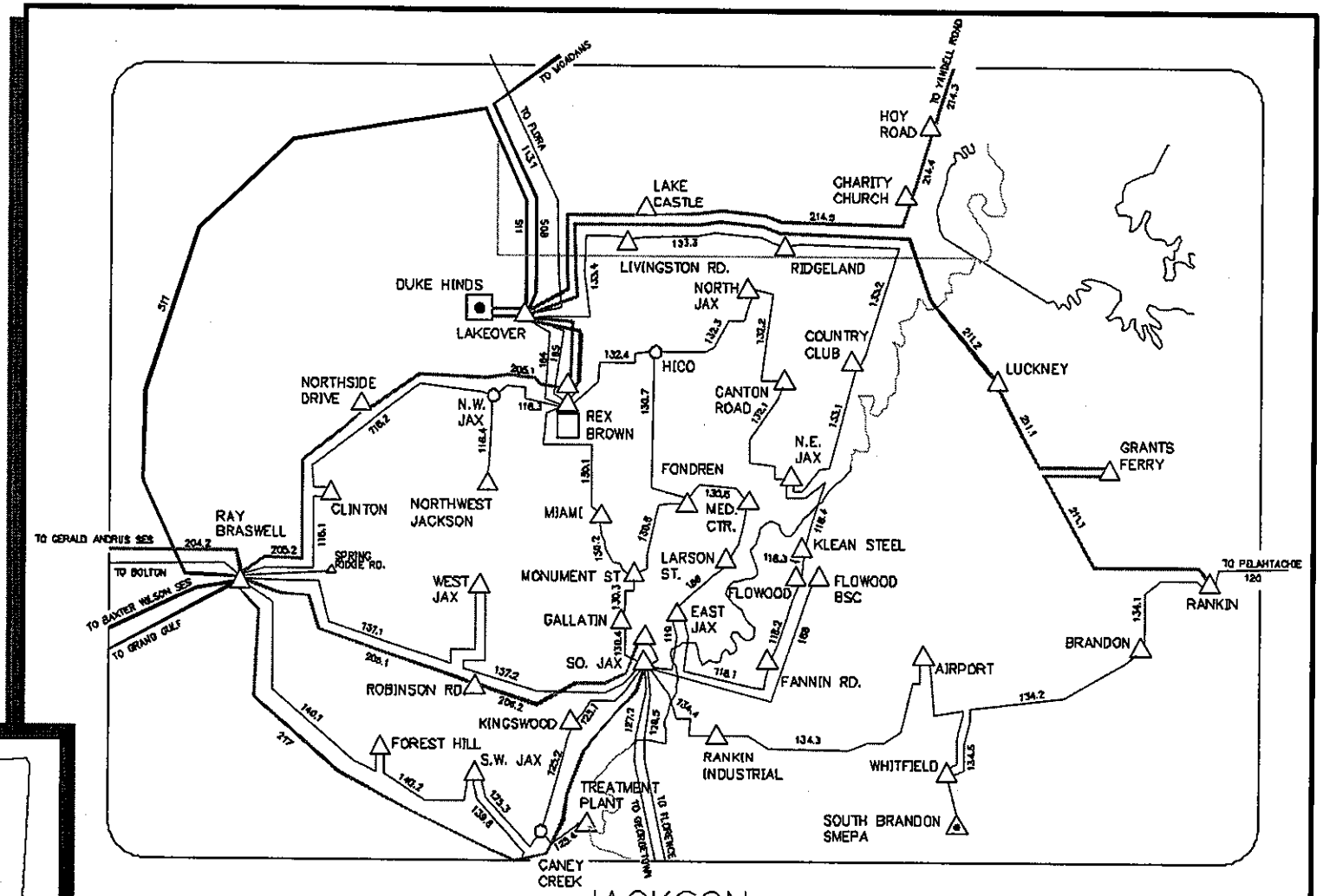
- Single contingencies in the North and South Jackson area will cause overloads (11% - 33%) on the 115kV transmission system.

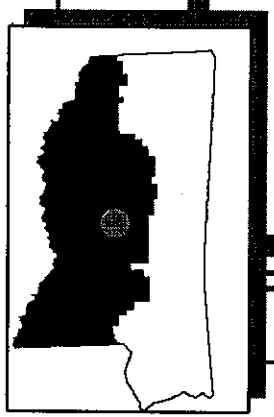
Recommended Solution:

- Construct the Rankin to S. Jackson 230kV line. This line will complete a 230 kV loop around Jackson and will allow for load on the 115kV system to be shifted to the 230kV system. The Rankin – S. Jackson 230 kV line will be approximately 20 miles long and is currently scheduled for an ISD of 2005.

- Estimated Cost: $9.0 MM

Rankin – S Jackson 230 kV Line





Entergy

2005

Lake Castle: Install 21 MVAR Capacitor Bank

Scenario:

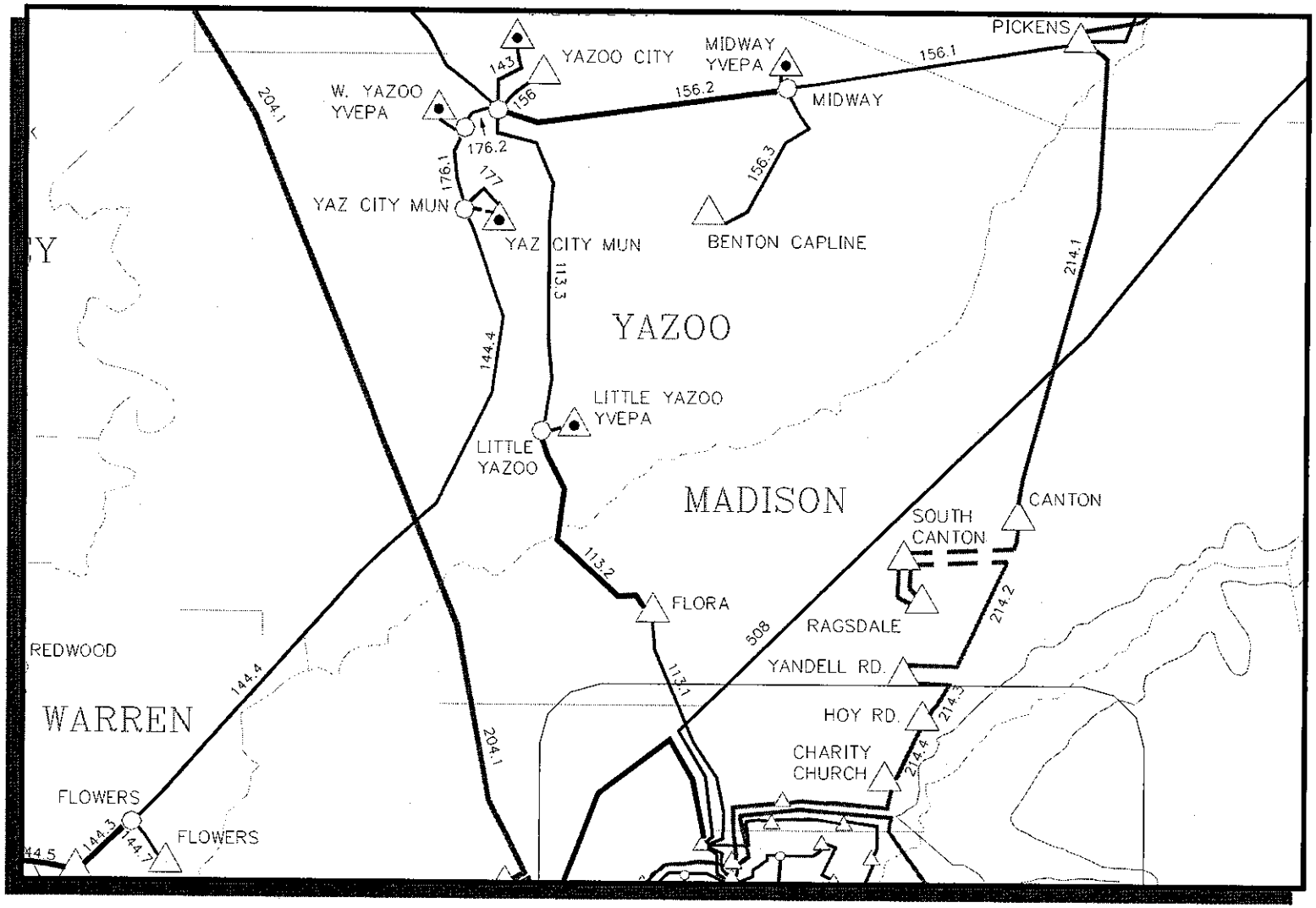
- The Lakeover – South Canton – Pickens 230 kV line extends 64 miles from Jackson northward through Madison County and will serve 272 MW in 2005.
- Loss of the Lakeover – Lake Castle section of this line will cause voltages to fall between 89% and 92%.

Recommended Solution:

- Install a 21 MVAR capacitor bank at Lake Castle and correct the load power factor to 98% along this line where needed.

- Estimated Cost: $400,000

Lake Castle: Install 21 MVAR Capacitor Bank



Entergy

2005

Natchez: Install 21 MVAR Capacitor Bank

Scenario:

- The Natchez area is served by five 115 kV lines out of Franklin, Baxter Wilson and Red Gum. The load served by these lines is about 260 MW.

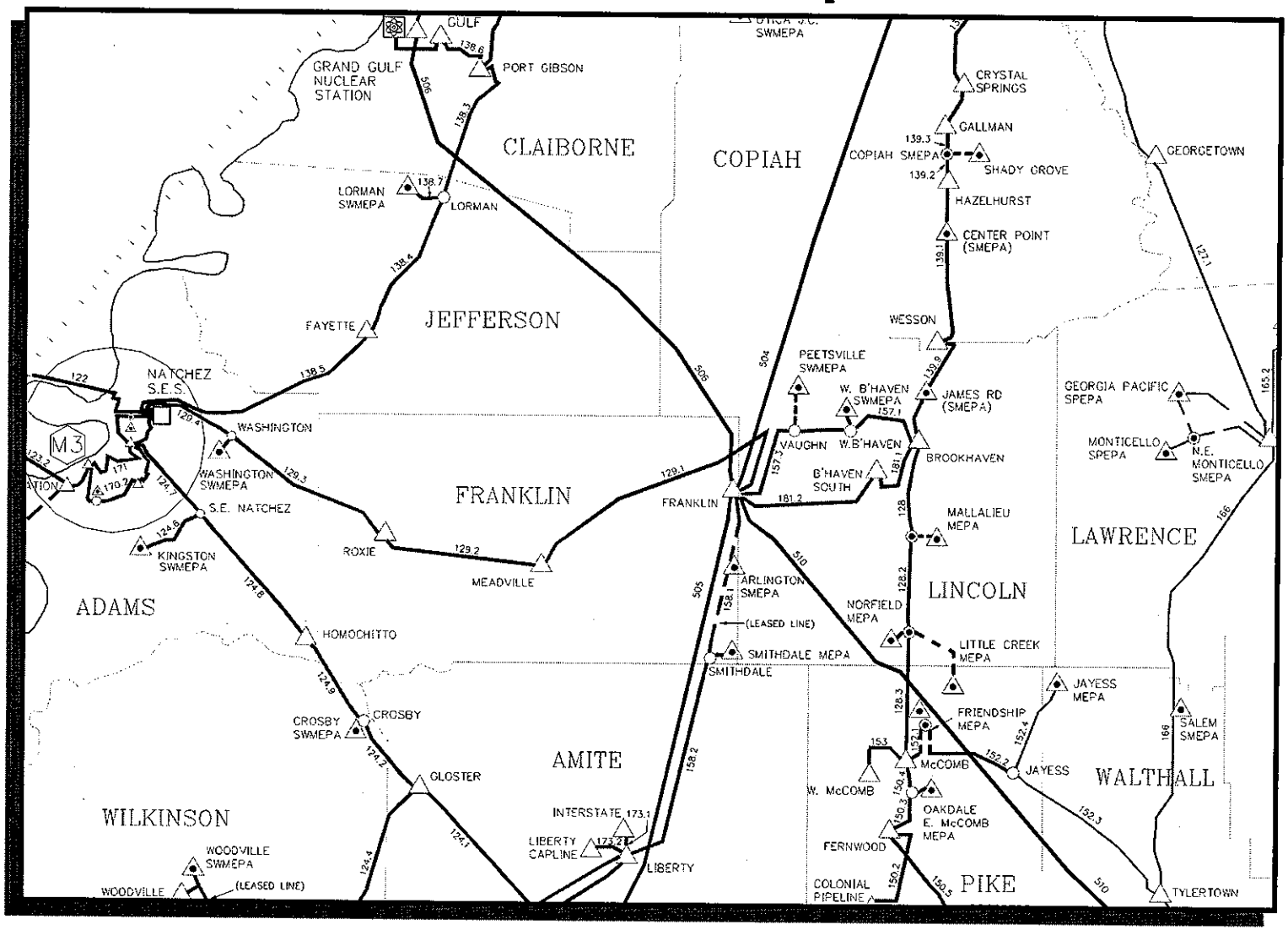
- The loss of Baxter Wilson – South Vicksburg, South Vicksburg – Port Gibson or Franklin – Arlington 115 kV will cause voltages to fall between 44% and 92% in this area.

Recommended Solution:

- Install a 21 MVAR capacitor bank at Natchez and correct the load power factor to 98% along this line where needed.

- Estimated Cost: $400,000

Natches SES 21 MVAR Capacitor Bank



Entergy

2005

Tylertown:
Install 21 MVAR Capacitor Bank

Scenario:

- The McComb and Tylertown areas are served by three 115 kV lines out of Brookhaven, Bogalusa and Amite. The load in the area in 2005 will be 195 MW.

- The single contingency loss of either the Brookhaven – Mallalieu or Mallalieu – Norfield 115 kV lines will cause voltages at 18 substations to fall as low as 82%.

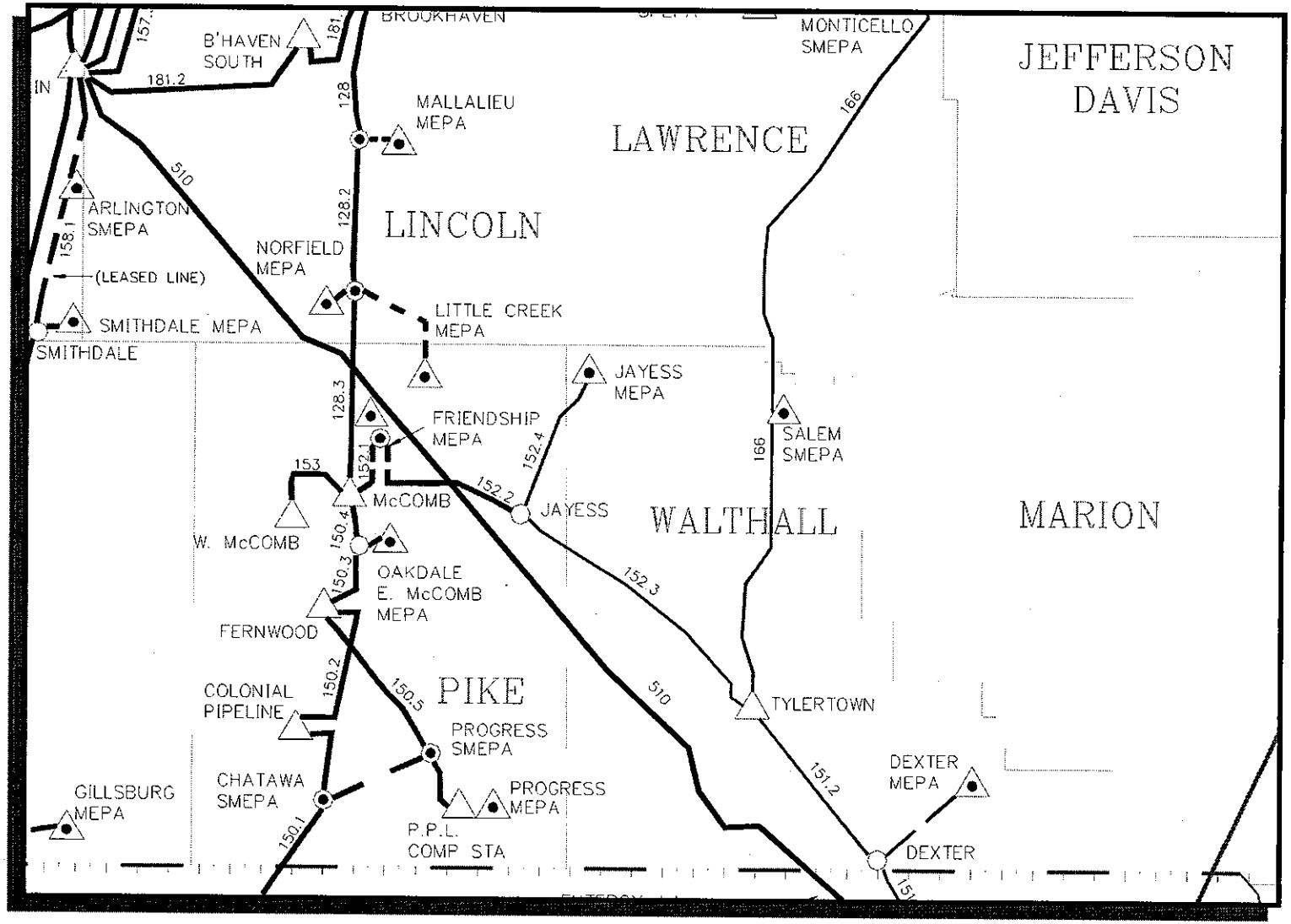
Recommended Solution:

- Install a 21 MVAR capacitor bank at Tylertown and correct the load power factor to 98% in this area where needed.

- Estimated Cost: $400,000

Entergy

Tylertown 21 MVAR Capacitor Bank



Entergy

2005-06

Jackson Improvement Plan Phase II: Convert Ridgeland to 230kV

Scenario:

- The Lakeover- NE Jackson - Rex Brown 115 kV line is 25 miles long and will serve 6 substations totaling 256 MW in 2005.

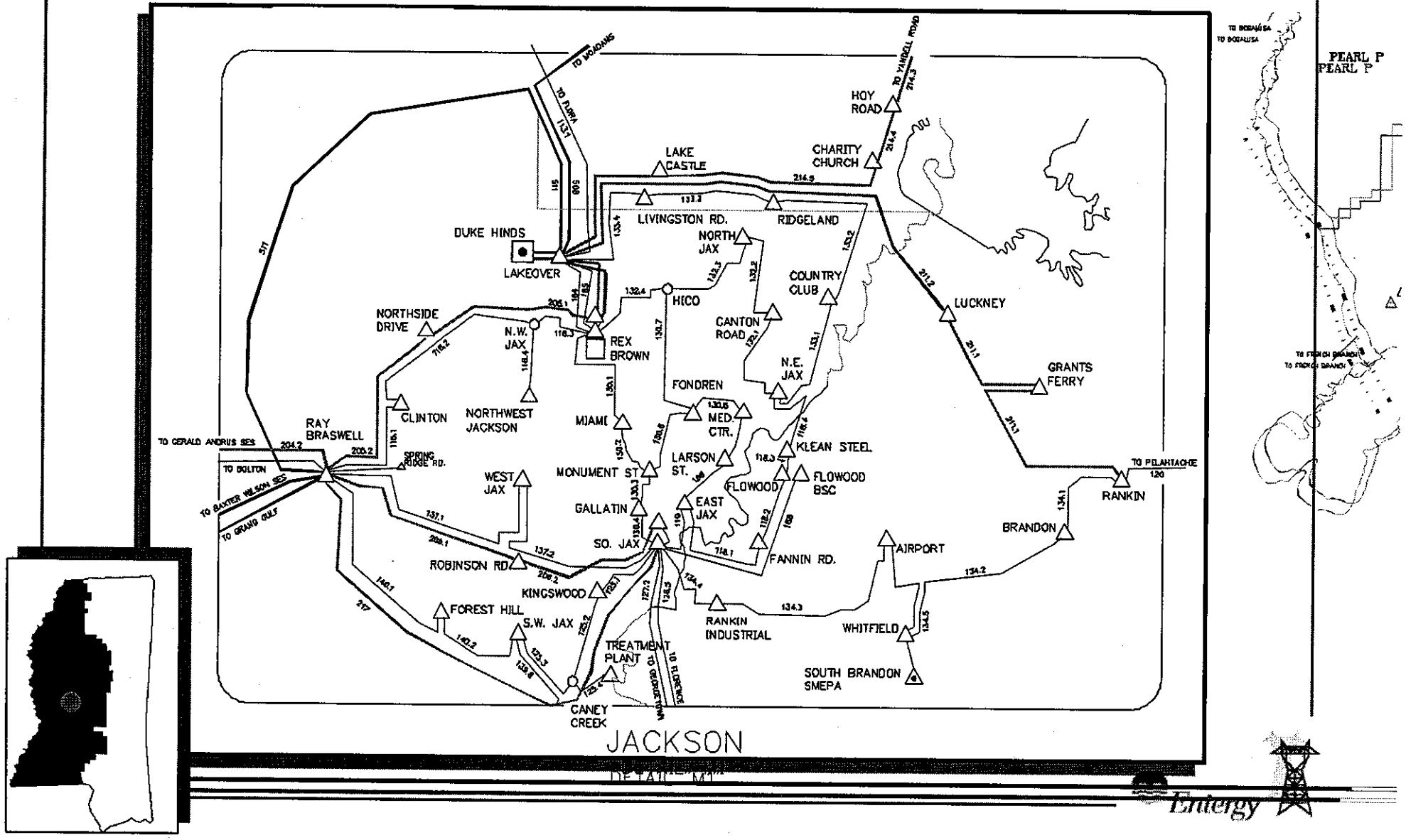
- The loss of the Rex Brown - Hico, Hico - N. Jackson or N. Jackson - Canton Rd 115 kV lines in 2005 causes overloads on the Lakeover - Livingston Rd 115 kV line from 105% to 138%.

Recommended Solution:

- Convert Ridgeland 115kV substation to 230kV in 2005 on the Lakeover to Northpark to Rankin 230kV line.

- Estimated Cost: $5.4 MM

Jackson Improvement Plan Phase II: Convert Ridgeland to 230kV



Entergy

2004-06

Amite to Fernwood 115 kV: Upgrade capacity of line

Scenario:

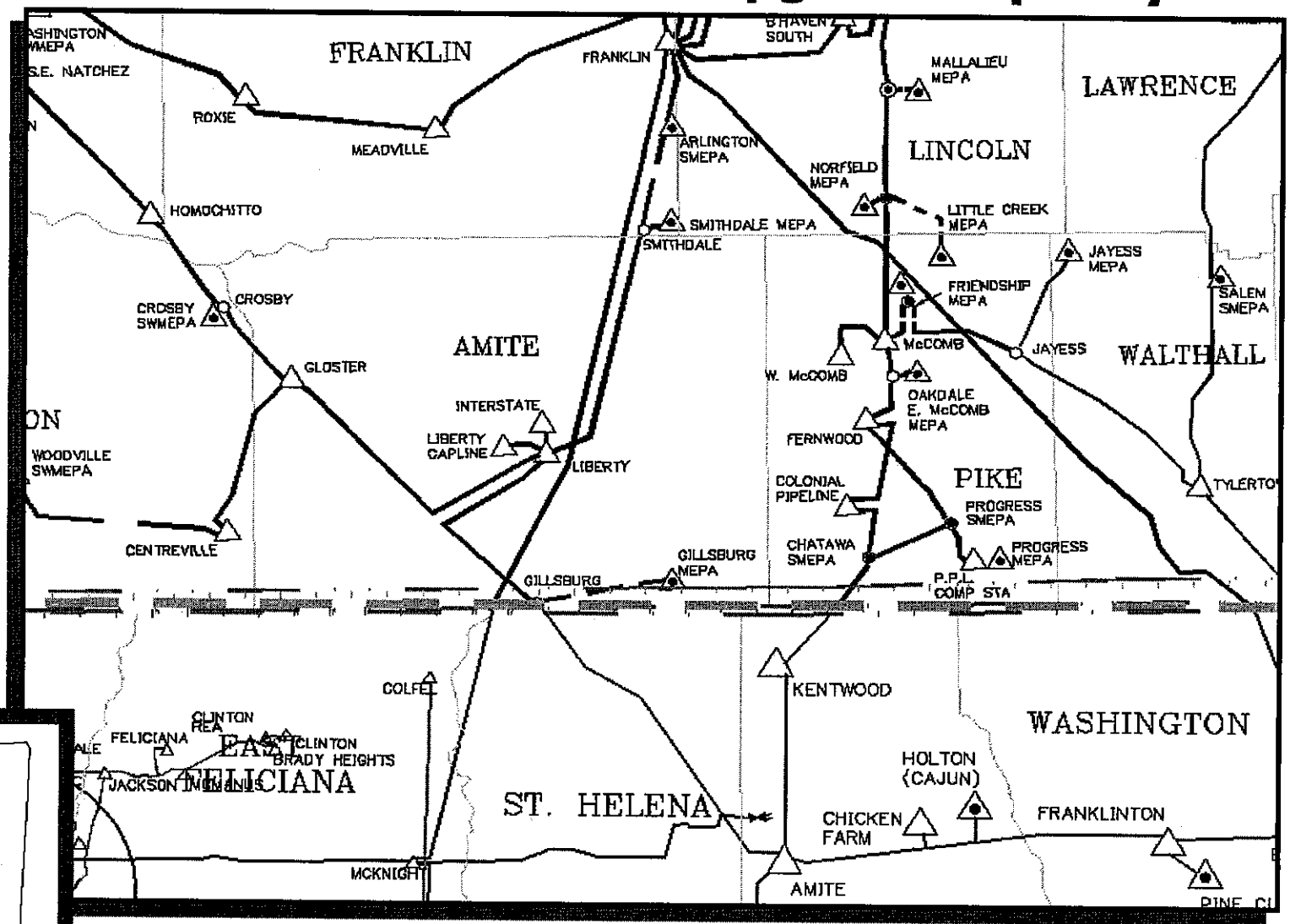
- The Amite to Fernwood 115kV line, located in south Louisiana, north of Lake Pontchartrain, extending north into southern Mississippi is 32 miles long. Amite to the Mississippi state line is approximately 17 miles and from the state line to Fernwood is approximately 15 miles. This 115kV line, constructed with 4/0 ACSR conductor, is part of the Amite to McComb tie between EMI and ELI.
- Single contingencies in Mississippi of Brookhaven to Mallalieu, Mallalieu to Norfield, or Norfield to McComb in 2005 will cause overloads up to 24% on the Amite-Kentwood-Colonial Pipeline-Fernwood line segments.

Recommended Solution:

- Rebuild the line with 1,272 MCM ACSR conductor to obtain a line rating of 261 MVA on the line from Amite to Fernwood line.

- Estimated Total Cost: $11.5 MM for ELI & EMI

Amite to Fernwood 115 kV: Upgrade capacity of line



Entergy

2005-06

Tillatoba 230/115kV Substation: Add 2nd 230/115kV Auto

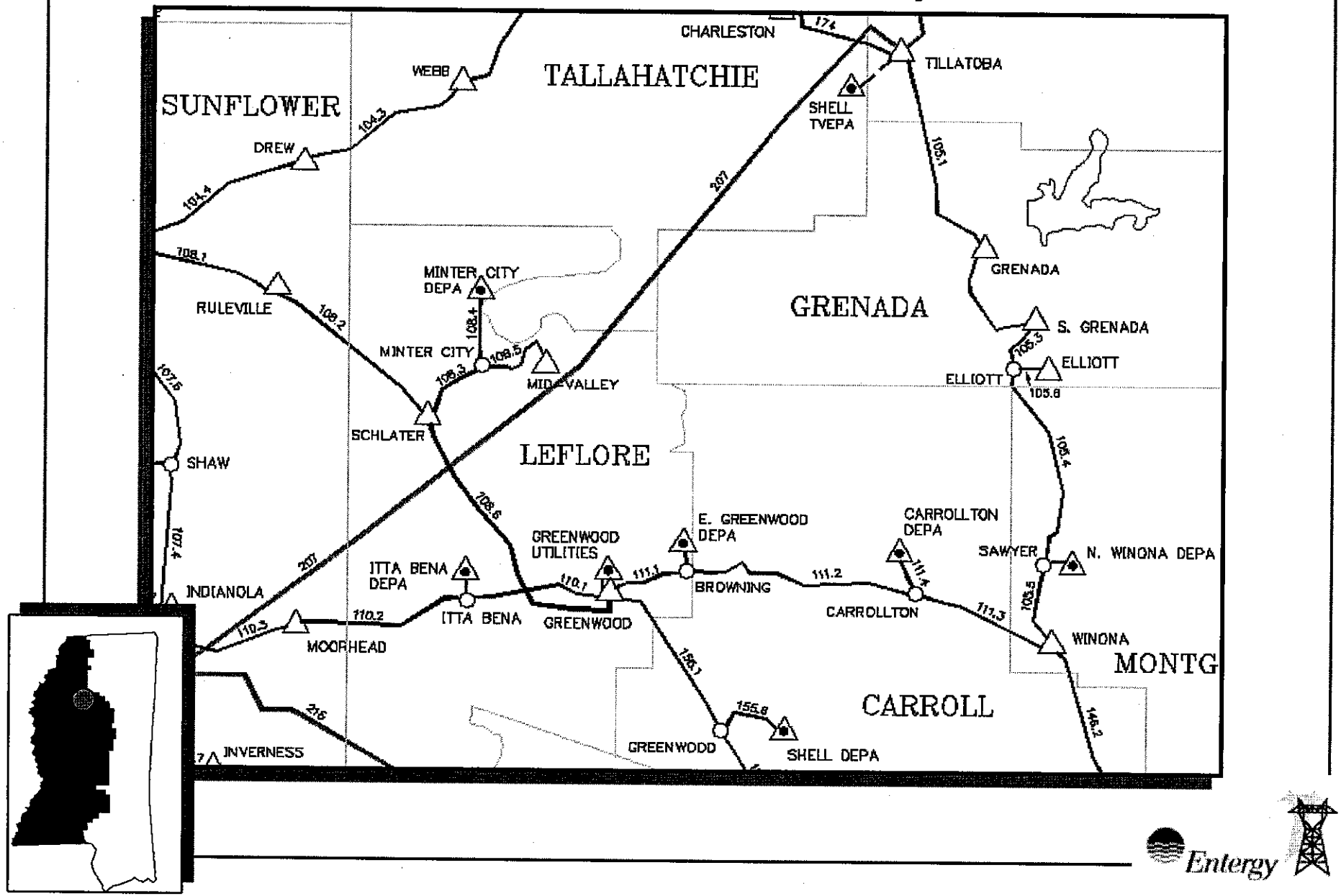
Scenario:

- Three single-phase autotransformers, 392 MVA total, 230/115kV with one single-phase spare in place.
- The loss of the Tillatoba 230/115kV autotransformer causes low voltages and several overloads throughout the northern Mississippi area.
- This contingency causes 9 lines to overload by 8% to over 100% . This contingency also causes 18 buses to fall below 92% voltage.

Recommended Solution:

- Install a parallel single-phase autotransformer with Breakers & Relaying
- Estimated Cost: $4.8 MM

Tillatoba Substation: Add 230/115 Auto



Entergy

2006-07

Ray Braswell to Terry: Build New 115 kV Line

Scenario:

- The SW Jackson to Byram to Brookhaven line is 53 miles long and serves 156 MW of load.
- The loss of the SW Jackson to Elton or Elton to Byram 115 kV lines will overload the segments from Brookhaven to Hazlehurst 115 kV line from 107% to 138% in 2005.
- They will also cause low voltage (80% to 91%) on 12 buses from Terry to Brookhaven.
- By 2008, The loss of the Wesson to Brookhaven or Wesson to James Rd. will cause overloads of 119% on the SW Jackson to Elton to Byram 115 kV line.

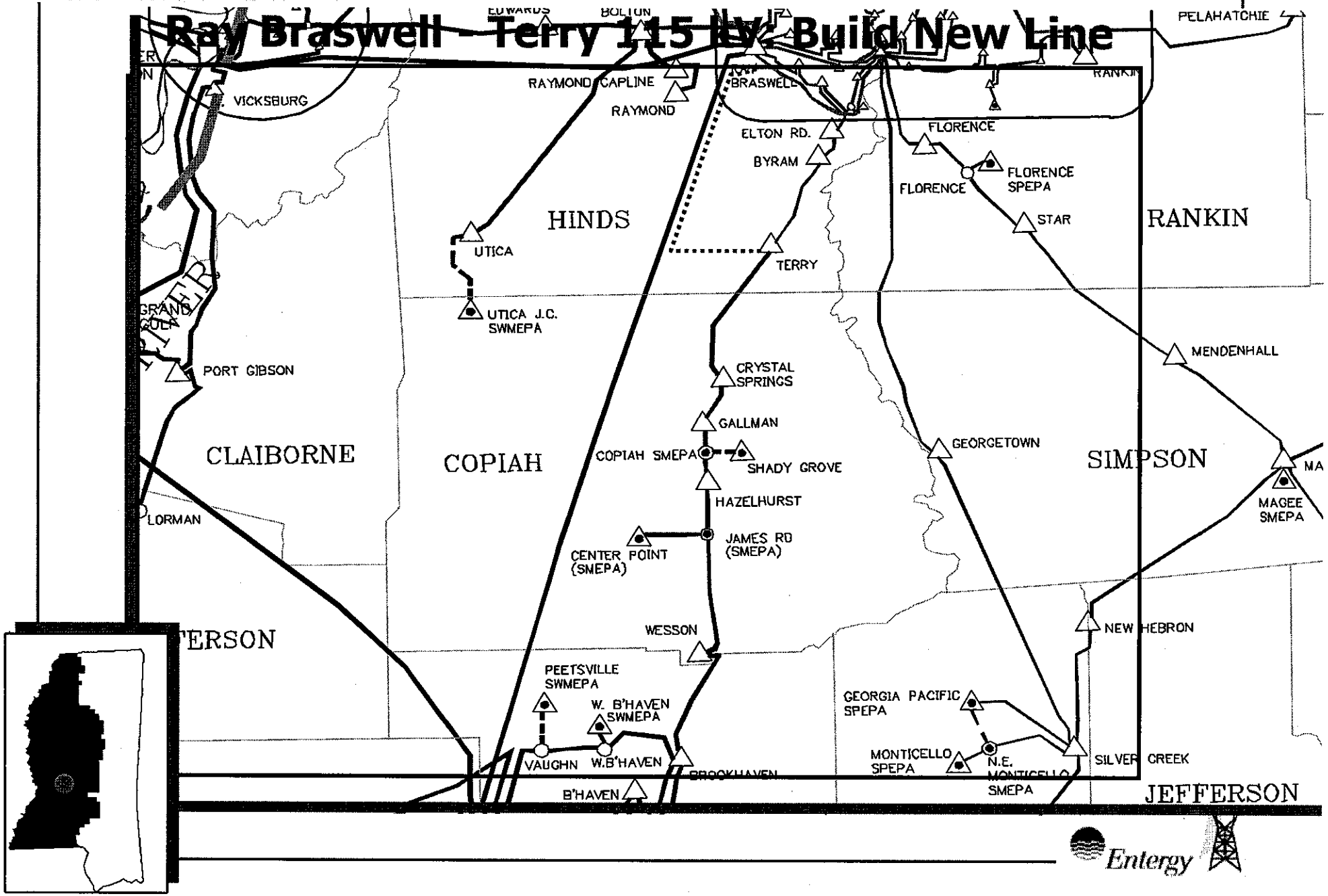
Recommended Solution:

- Build a new 115 kV line from Ray Braswell to Terry to eliminate the exposure to shedding load due to certain single contingencies.

- Estimated Cost: $9.3 MM

Transmission Business

Ray Braswell – Terry 115 kV Build New Line



Entergy

Hollandale – Belzoni Tap 115 kV: Install Breakers

Scenario:

- The Greenville to Hollandale 115kV line, located in northwest Mississippi, is 23.5 miles long and the Hollandale to North Vicksburg 115kV line is 59 miles long.

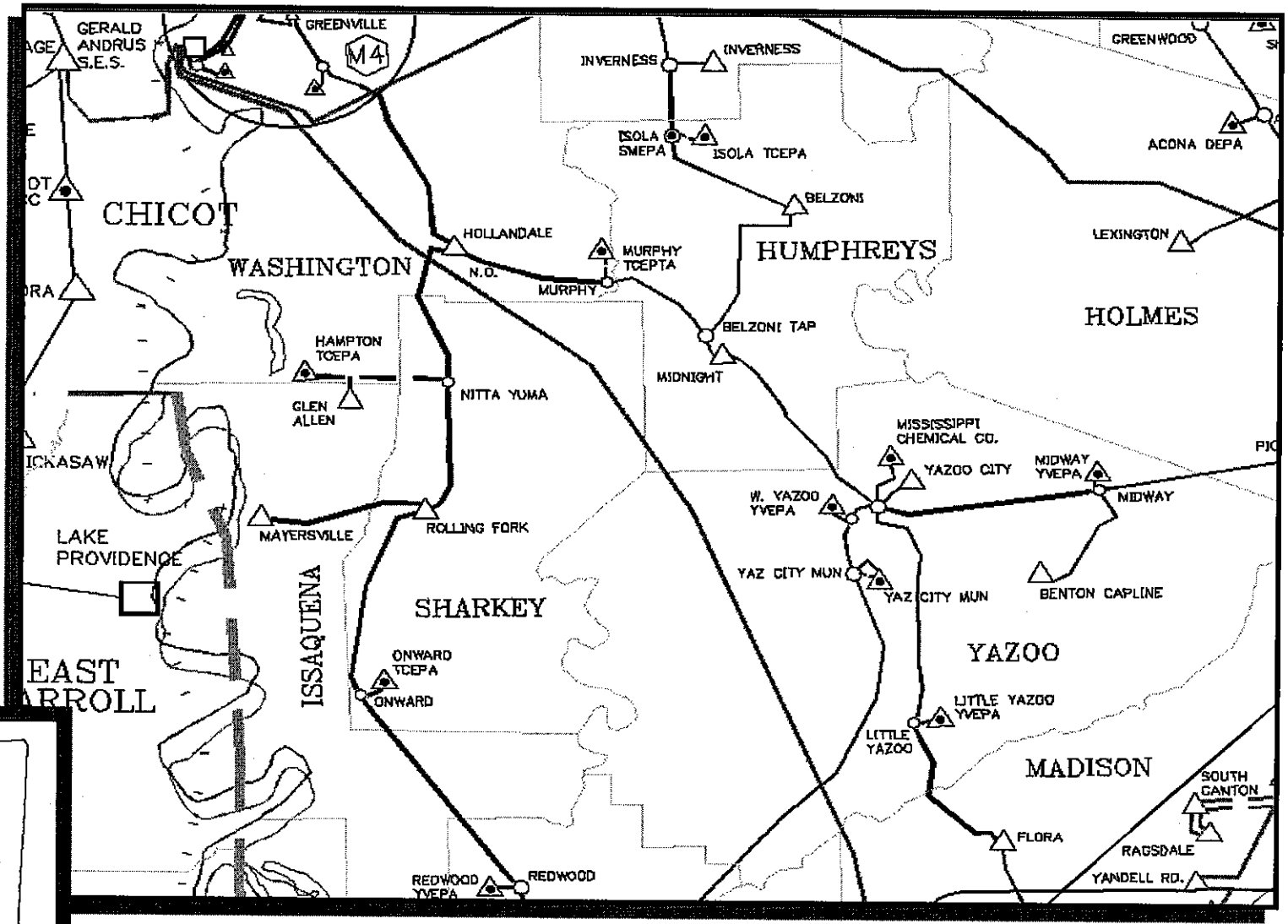
- The loss of any section of line from Greenville to Hollandale will cause voltages as low as 79% from Greenville to Hollandale.

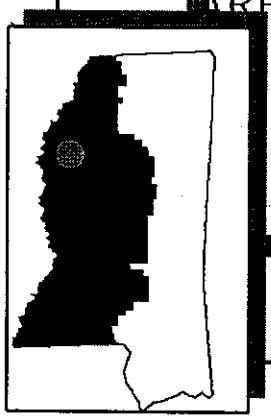
Recommended Solution:

- Install breakers at Hollandale substation and construct a new 3-breaker switching station near the Belzoni Tap. This will allow the Murphy – Belzoni 115 kV line to be closed thereby providing another source into the area.

- Estimated Cost: $2.4 MM

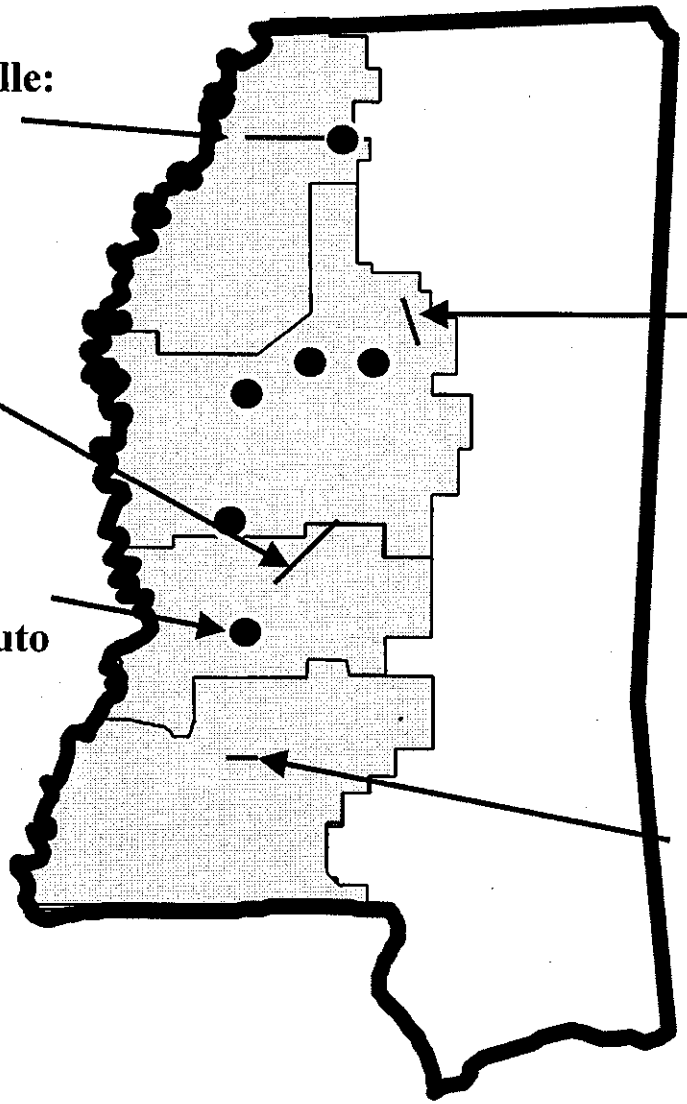
Hollandale – Belzoni Tap 115 kV: Install Breakers





Entergy

2007 - 2008 EMI Transmission Expansion Projects



Getwell - Robinsonville:
New 230 kV line
2008-2009

Yandell – Lakeover:
New 230 kV line
2008-2009

Ray Braswell
Add Second 500/230kV Auto
2008-2009

● Capacitor Banks 2007-08

Tillatoba to S. Grenada
Build New Line
2007-08

Franklin to Brookhaven S. to
Brookhaven
Upgrade Line 2007-08

Entergy

Franklin to Brookhaven South to Brookhaven: Increase Line Capacity

2007-08

Scenario:

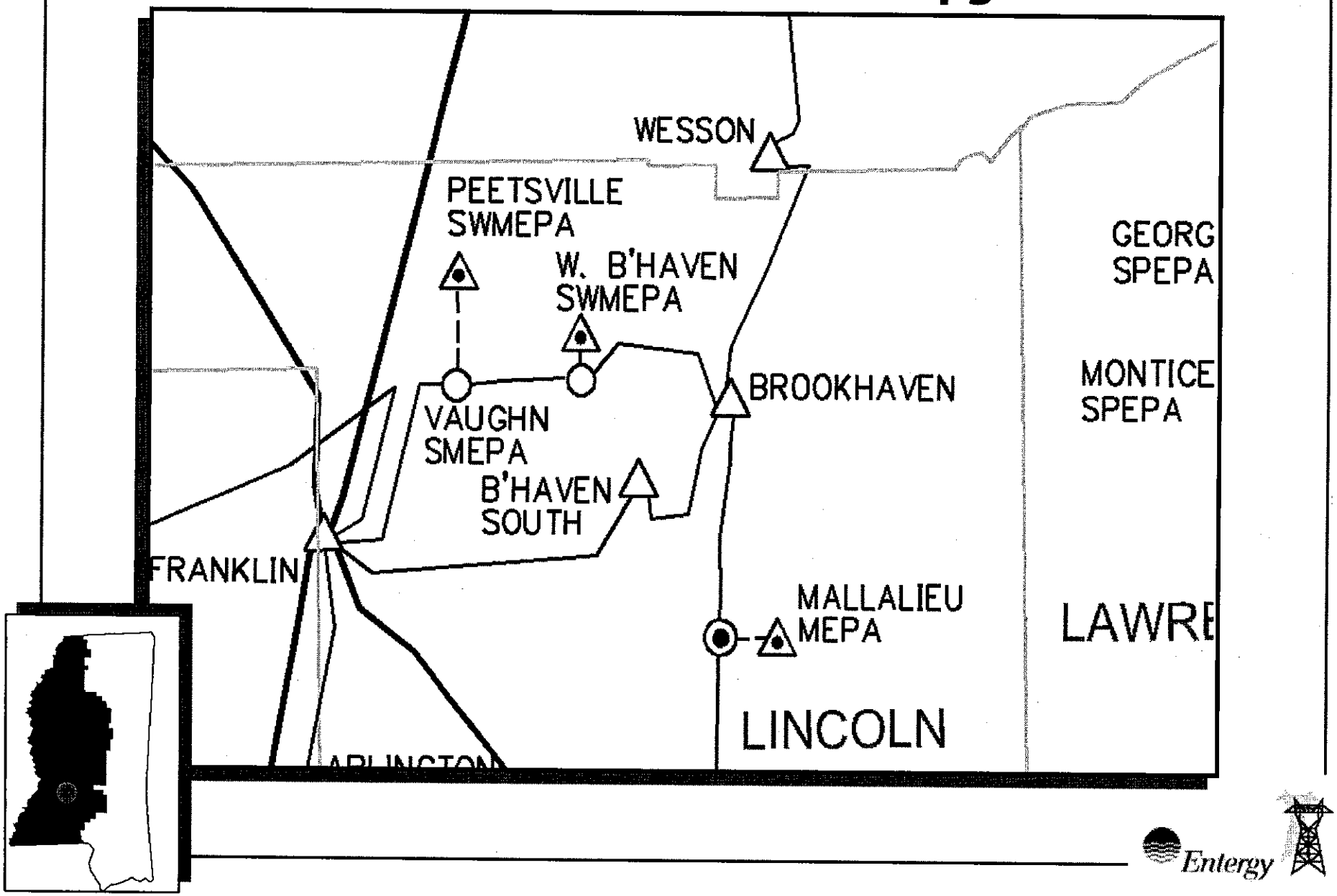
- Franklin - Brookhaven transmission path consist of two 115kV lines
  - Provides power from 500kV system at Franklin to the 115 kV system in southern Mississippi
  - South line (Franklin - Brookhaven S. - Brookhaven) is constructed of 954 ACSR conductor.
- The loss of the north line (Franklin to Vaughn to Brookhaven) will overload the south line by 23% in 2008.
  - No operating procedures to mitigate this circumstance.

Recommended Solution:

- Upgrade the line from Franklin to Brookhaven S. to Brookhaven with 1590 ACSR. Upgrade all appropriate switches, bus work and other devices as necessary.

Estimated Cost: $5.0 MM

Franklin to Brookhaven 115 kV: Upgrade Line



Entergy

2007-08

Tillatoba to South Grenada: Build New 115 kV Line

Scenario:

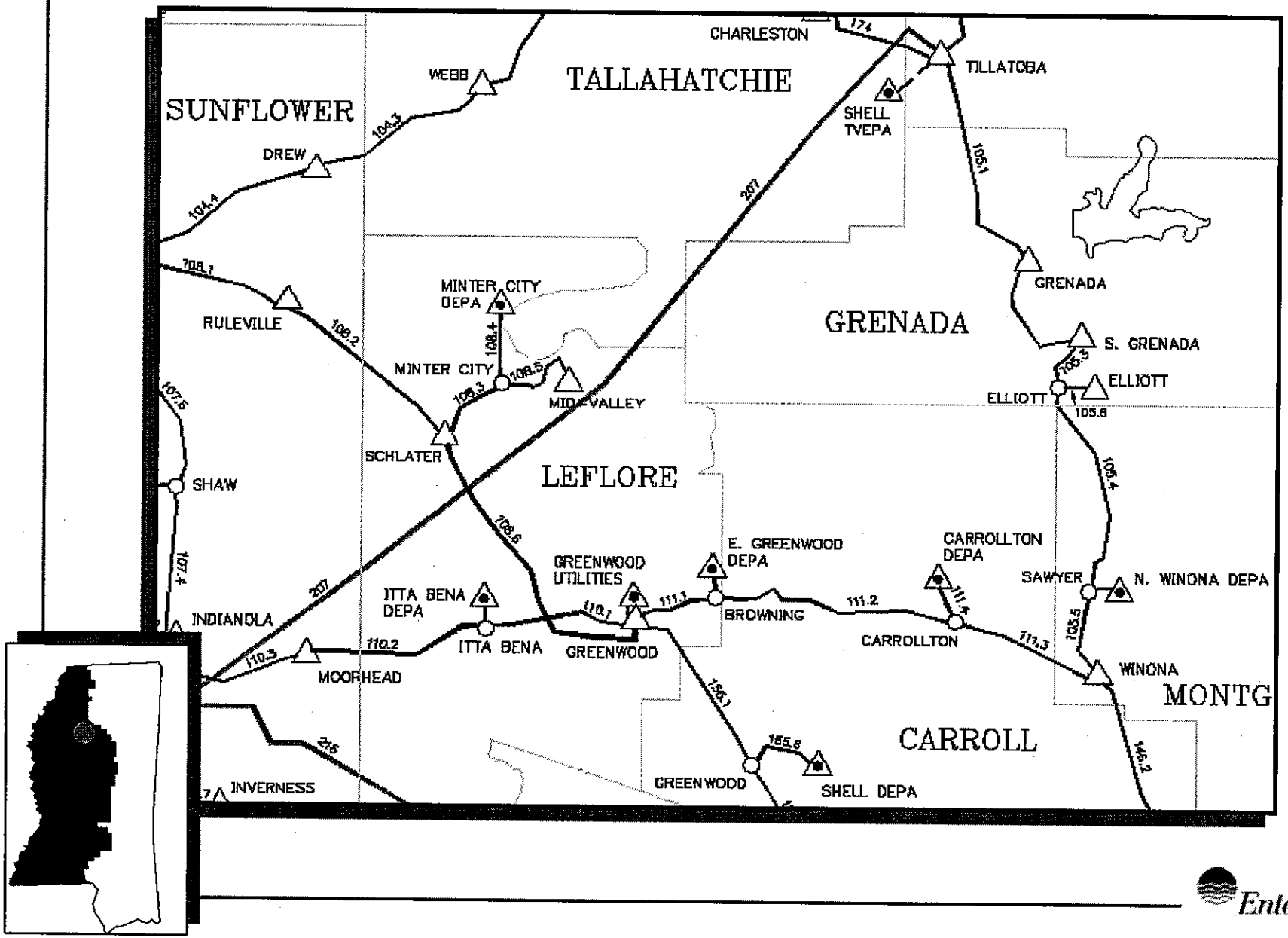
- The 115kV line from Tillatoba to S. Grenada is 19 miles long and part of a 43-mile line to Winona.
- The loss of the Tillatoba to Grenada line in 2005 causes voltages as low as 84% on five buses, and overloads on two lines by as much as 10%. In 2008, there are 7 buses with voltages between 92% to 77%, and overloads on 3 115kV lines by 16% to 30%.

Recommended Solution:

- Build a single separate line from Tillatoba to S. Grenada with 1272 ACSR (or equivalent conductor). The line should be built for 230kV and operated at 115kV.

Estimated Cost: $6.0 MM

Tillatoba to S. Grenada: Build New 115 kV Line



Entergy

2008-09

Ray Braswell: Add Second 500/230 kV Autotransformer

Scenario:

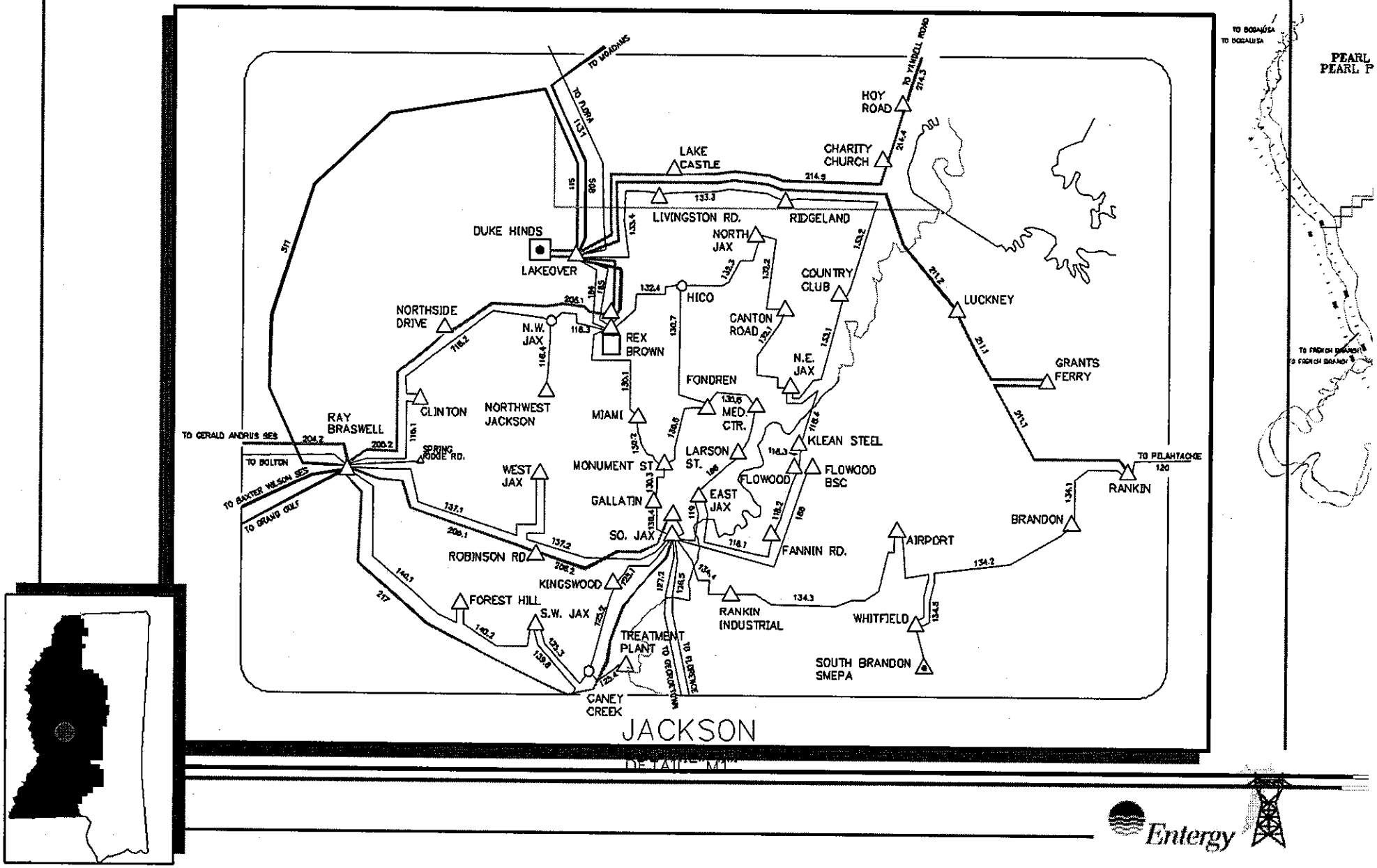
- Ray Braswell has one 560 MVA, 500/230kV autotransformer and one 560MVA, 500/115kV autotransformer.
- The loss of the Ray Braswell to Lakeover 500kV line will overload both the Ray Braswell 500/230kV and the Ray Braswell 500/115 kV autotransformers by 30% in 2010.

Recommended Solution:

- Install a parallel 560MVA 500/230MVA autotransformer with breakers & relaying at Ray Braswell.

Estimated Cost: $15.0 MM

Ray Braswell: Add Second 500/230 kV Transformer



Entergy

2008-09

Getwell - Robinsonville: Build New 230 kV Line

Scenario:

- The Getwell – Batesville 115 kV line will serve about 260 MW in 2010. The primary source for this area is the Freeport – Horn Lake 230 kV line and the Getwell 230/115 kV auto.

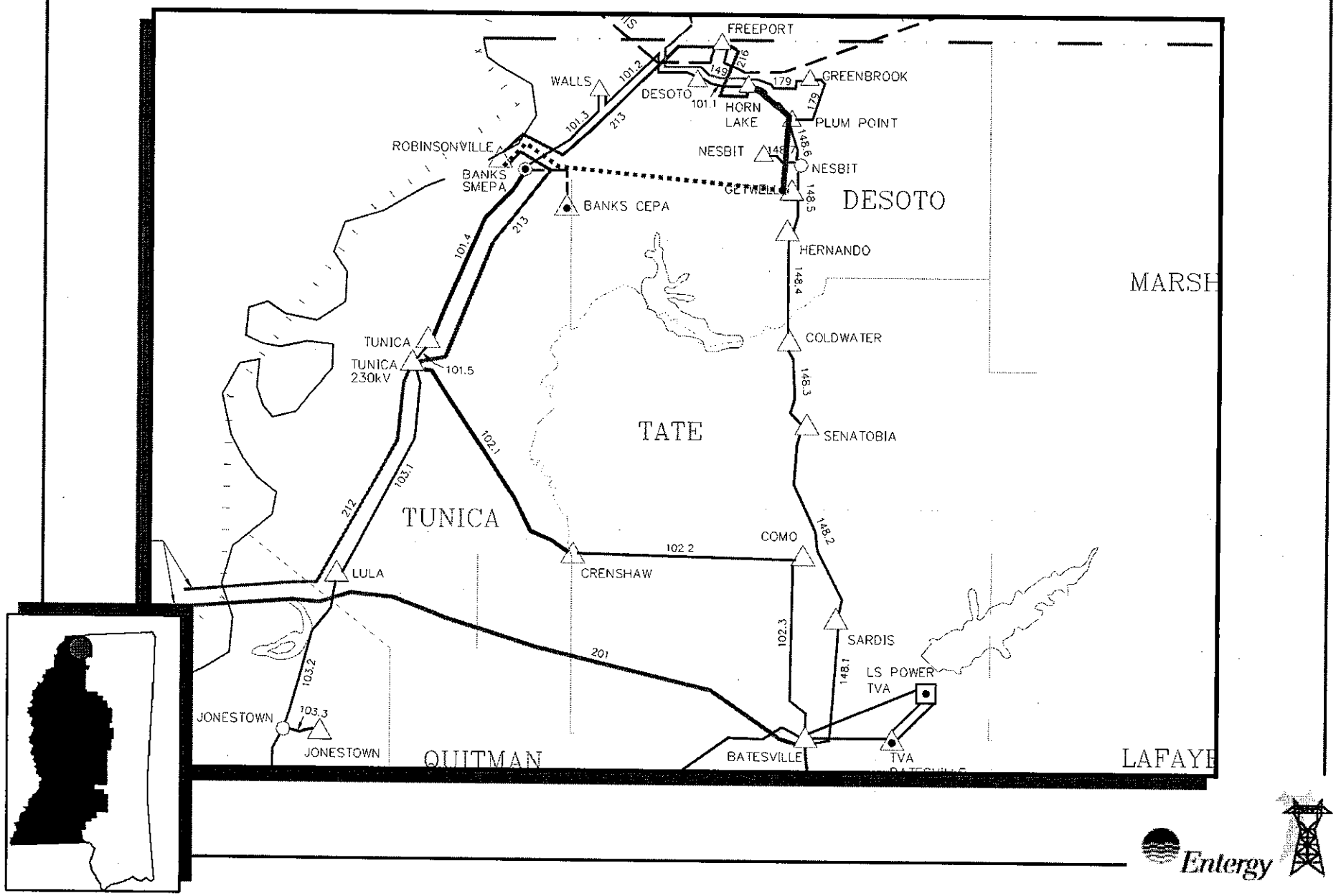
- Loss of the Freeport – Horn Lake or Horn Lake – Getwell 230 kV lines will cause voltages to fall between 89% and 92% in the area and cause the Horn Lake 161/115 kV auto to overload by 4%.

Recommended Solution:

- Build a new 230 kV line from Getwell to Robinsonville. The new line would be approximately 18 miles long and would add another source into the area.

- Estimated Cost: $7.2 MM

Getwell - Robinsonville 230 kV: Build New Line



Entergy

2008-09

Lakeover – Yandell: Build New 230 kV Line

Scenario:

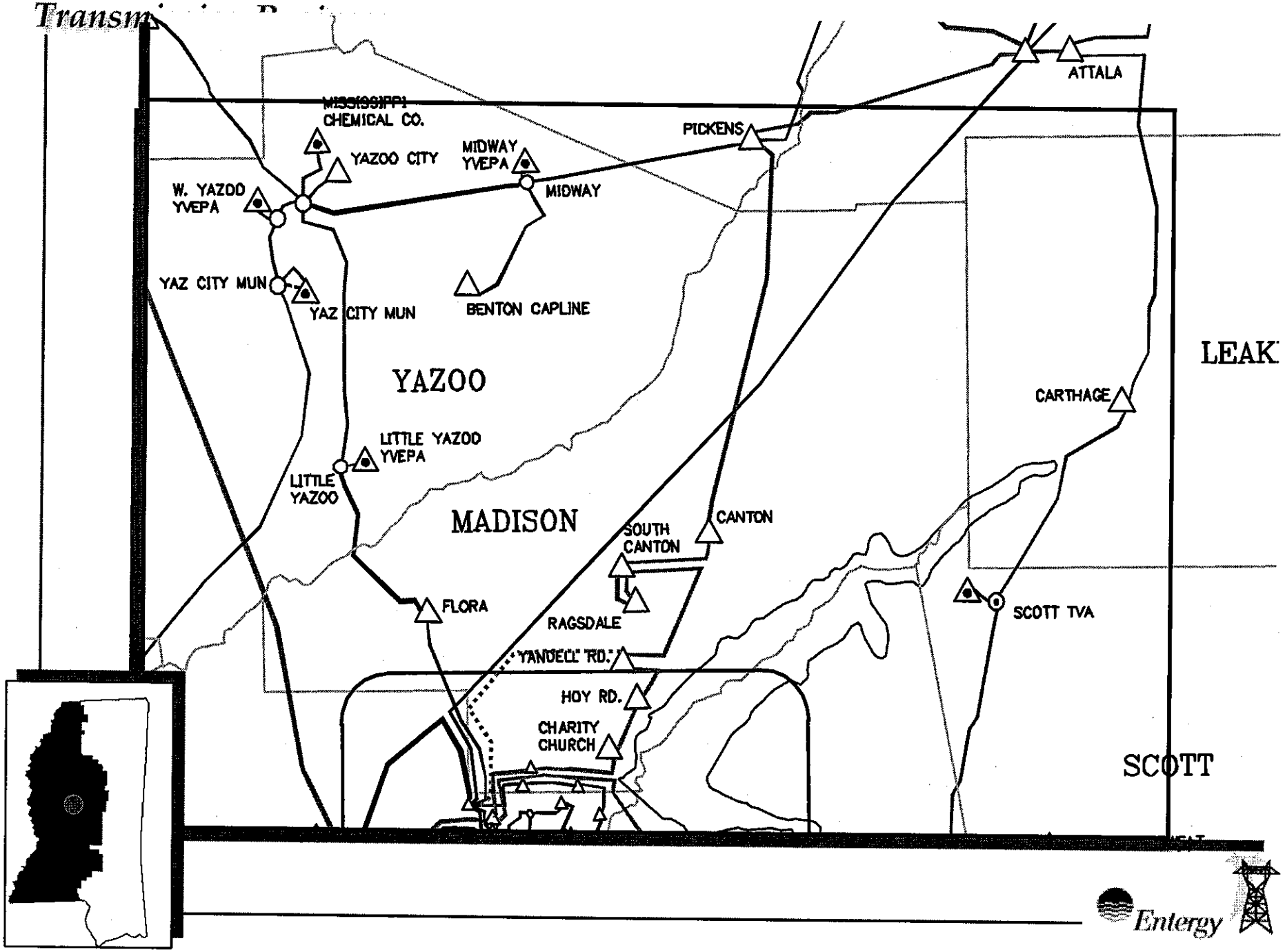
- The Lakeover – South Canton – Pickens 230 kV line extends 64 miles from Jackson northward through Madison County and will serve nearly 300 MW in 2010.

- Loss of the Lakeover – Lake Castle or Lake Castle – Charity Church sections of this line will cause voltages to fall between 89% and 92%.

Recommended Solution:

- Build a new 230 kV line from Yandell to Lakeover. The new line would be approximately 21 miles long and would add another source into the Lakeover – South Canton – Pickens 230 kV line.

- Estimated Cost: $8.4 MM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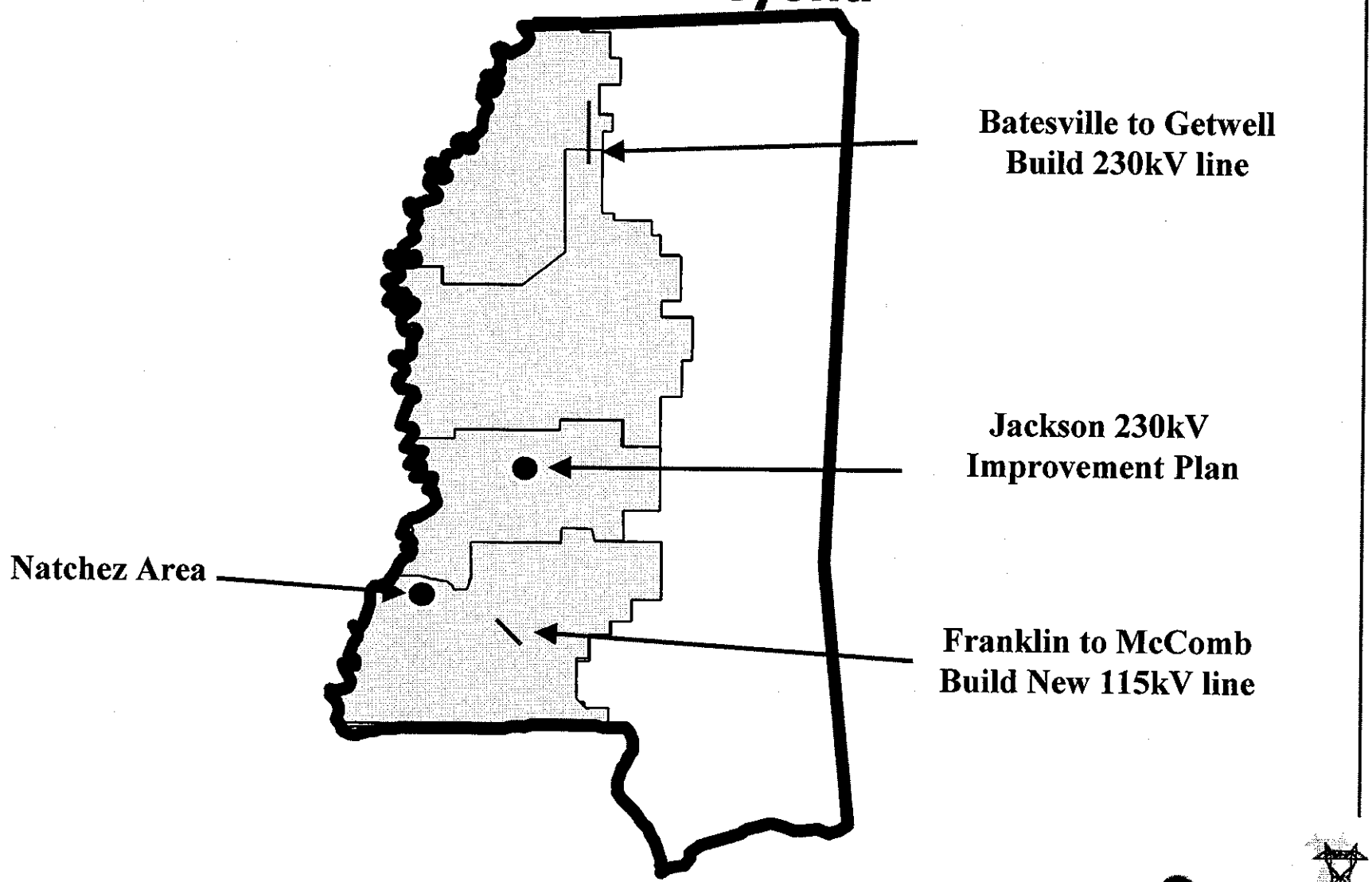
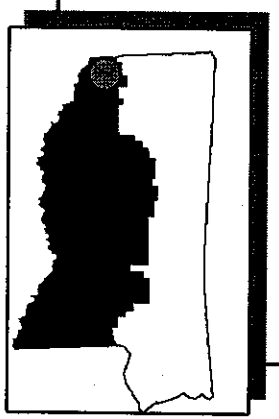
ATTALA
CHEMICAL CO.
YAZOO CITY
MIDWAY YVEPA
PICKENS
MIDWAY
W. YAZOO YVEPA
YAZ CITY MUN
YAZ CITY MUN
BENTON CAPLINE
YAZOO
LEAK
CARTHAGE
LITTLE YAZOO YVEPA
LITTLE YAZOO
MADISON
SOUTH CANTON
CANTON
FLORA
RAGSDALE
SCOTT TVA
YANDELL RD.
HOY RD.
CHARITY CHURCH
SCOTT
Entergy

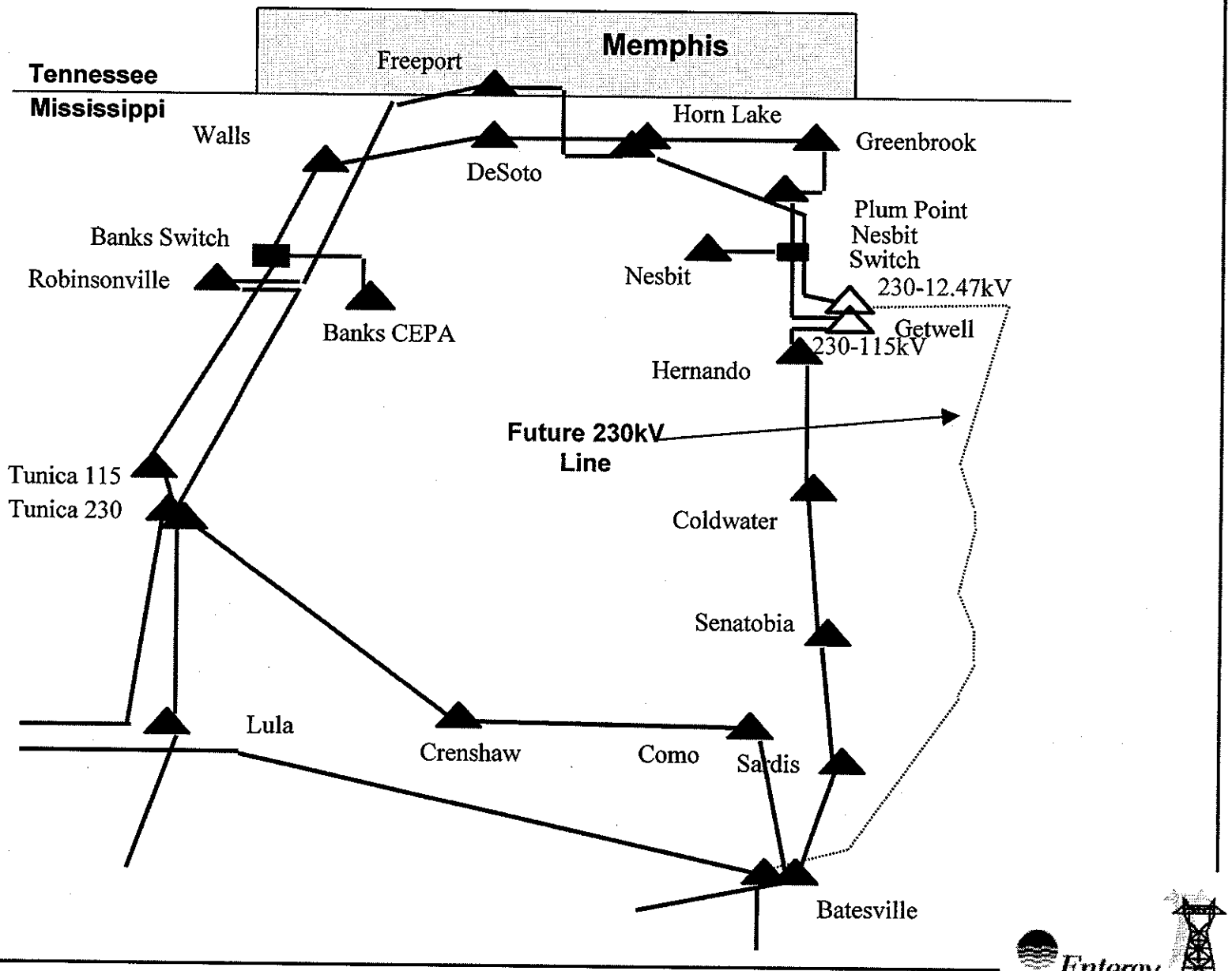
EMI Transmission System Target Areas 2009 and Beyond



Entergy

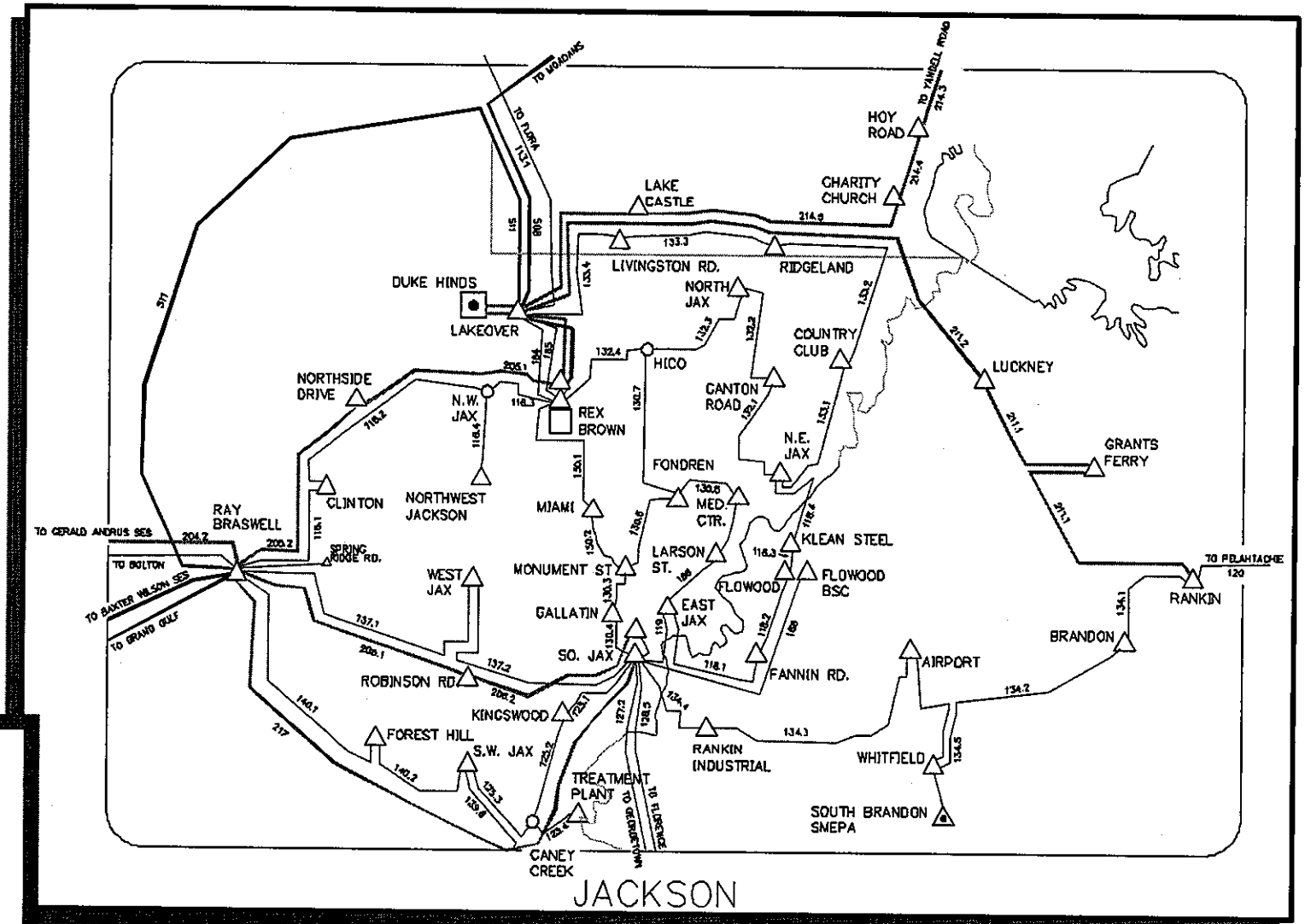
Transmission Business

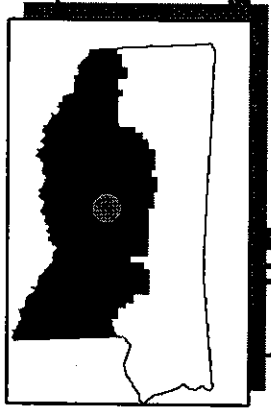




Entergy

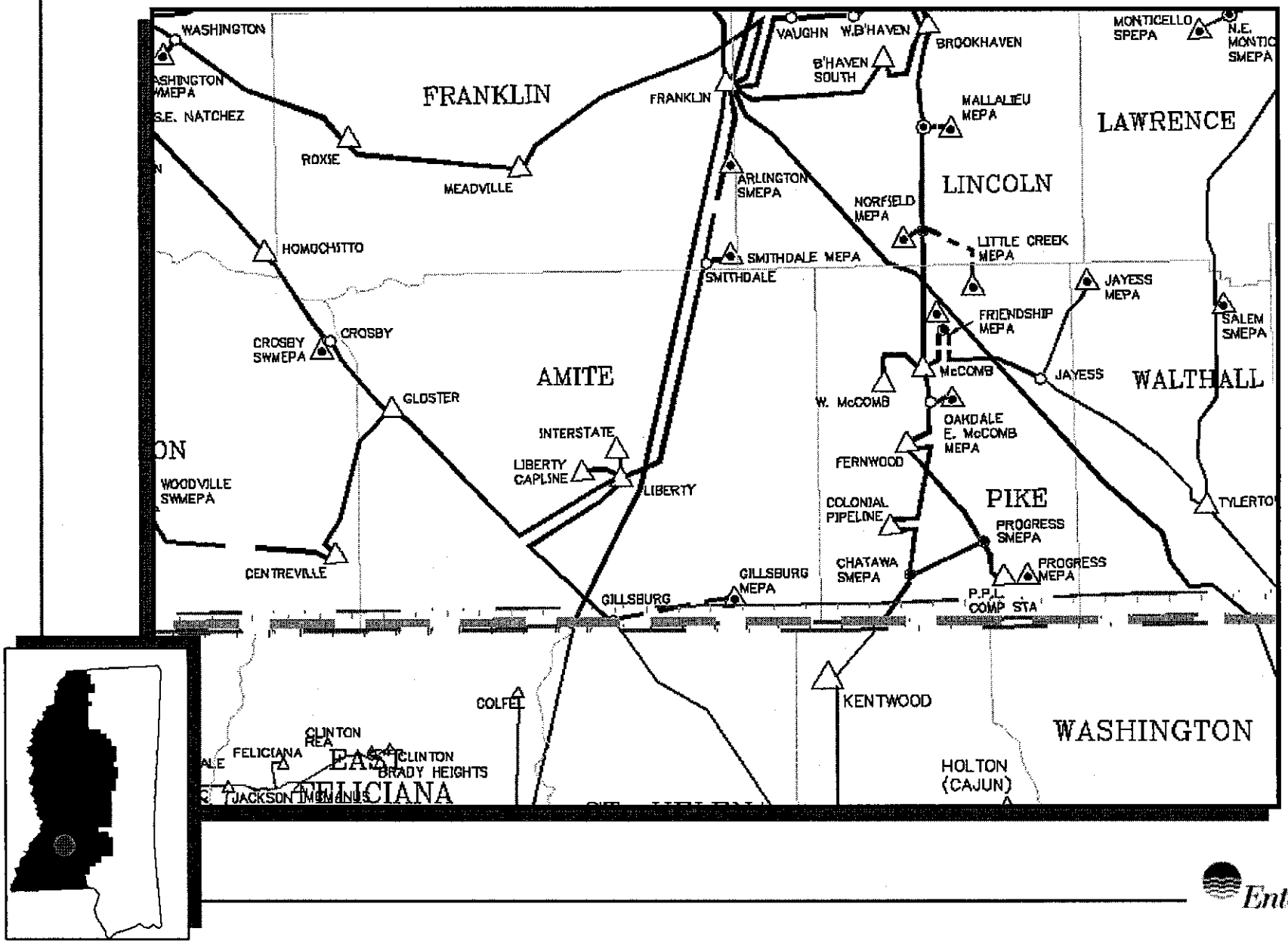
Reliability Target Areas: The Jackson Area





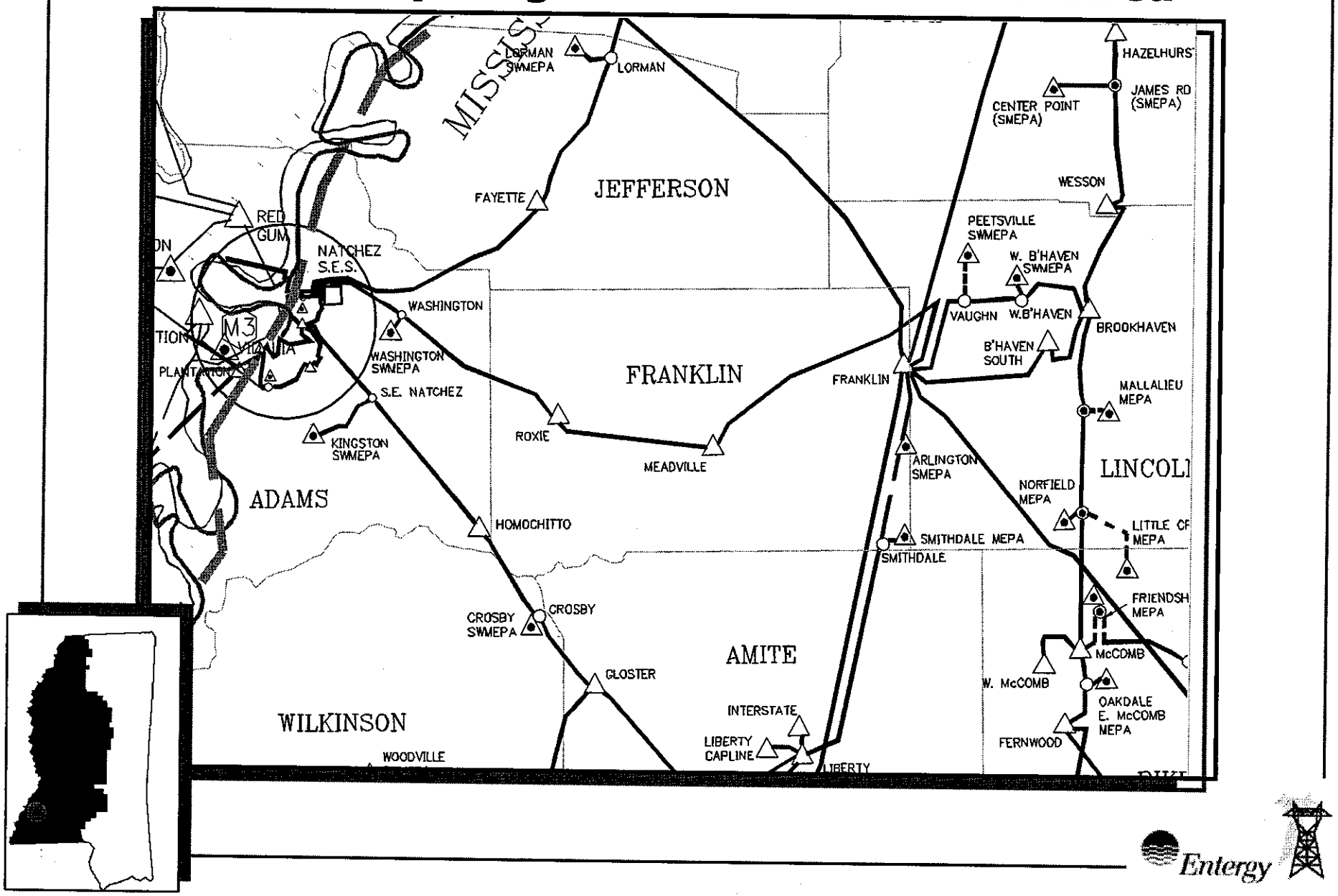
Entergy

Franklin – McComb: Build New 115 kV Line



Entergy

Reliability Target Areas: The Natchez Area

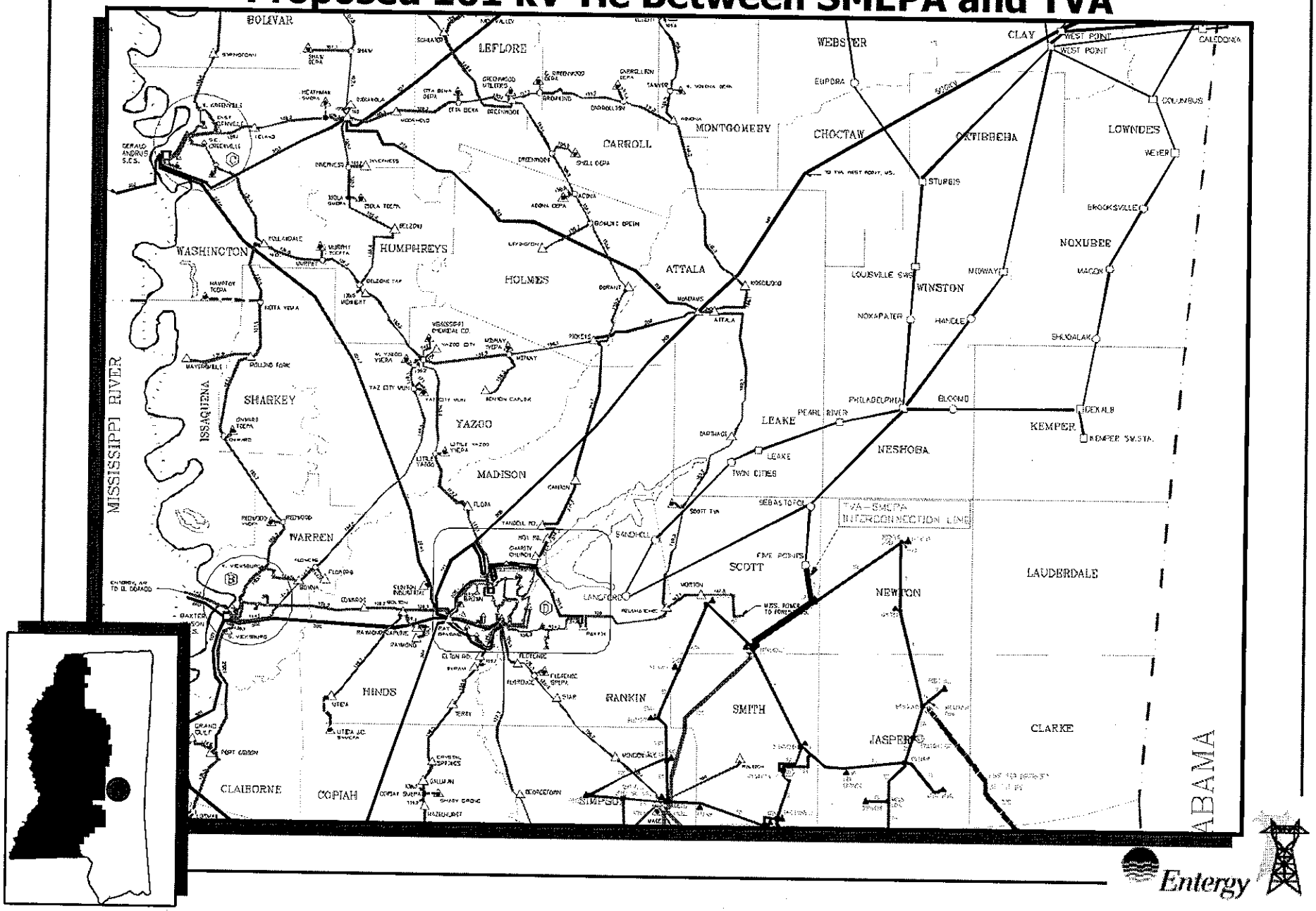


Entergy

Proposed 161 kV Tie Between SMEPA and TVA

- Detailed study for this interconnection is underway
- SMEPA rebuild approximately 11.5 miles of existing 69kV line from Homewood to Lake with double circuit construction (161kV & 69kV)
- TVA build approximately 5 miles of new 161kV line from Five Points to Lake
- Add 161kV breaker to existing bay at Homewood
- Install metering facilities at either Five Points or Homewood
- The tie will not cause significant impacts on the Entergy system (Loop flows, voltage impacts, etc.).
- Expected ISD is June 2007.

Proposed 161 kV Tie Between SMEPA and TVA



Questions