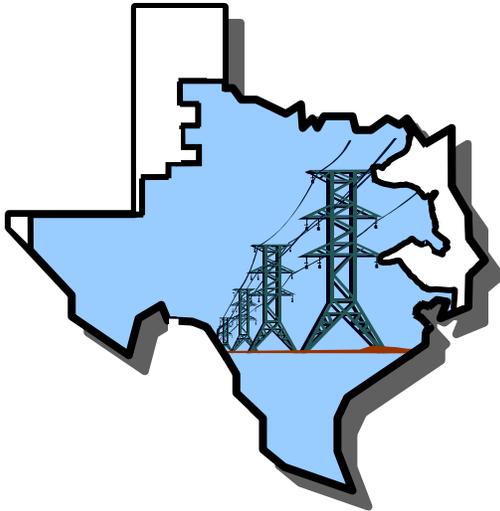




# System Planning Division



## Monthly Status Report to Technical Advisory Committee Reliability and Operations Subcommittee for April 2007

### Report Highlights

#### Item

1. ERCOT is currently tracking 183 active generation interconnection requests totaling over 80,000 MW. This includes over 27,000 MW of Wind Generation.
2. Regional Planning is currently reviewing proposed transmission improvements with a total cost of approximately \$207 M to \$260 M.  
Presentation of Projects in RPG Review Process
3. Summary of CSC Utilization for Q1 2007 presented to WMS



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# 1. Generation Interconnection

Additional information regarding detailed generation interconnection and impact studies is contained in the “Generation Project Interconnection Information” data folder posted in the “Operations and System Planning” data area on the ERCOT website.

## 1.1. New Generation Beginning Commercial Operations

No new generators went into commercial operation in April 2007.

## 1.2. Active Generation Interconnection Requests

<b>GENERATION INTERCONNECTION REQUESTS CURRENTLY BEING PROCESSED</b>					
<b>Currently tracking 183 active generation interconnection or change requests</b>					
<b>As of April 30, 2007</b>					
		<b>North</b>	<b>South</b>	<b>West</b>	<b>Total</b>
Security Screening Study		6	5	15	26
SSS Completed		10	13	22	45
Full Interconnect Study		16	23	44	83
FIS Completed		0	0	2	2
Interconnect Agreement Completed		12	4	17	27
Capacity for Grid, MWs		<b>25,308</b>	<b>30,940</b>	<b>23,821</b>	<b>80,069</b>
Wind MWs		1,734	4,328	21,673	27,735

<b>Fuel</b>	<b>Public (MWs)</b>	<b>Non-public (MWs)</b>	<b>Total (MWs)</b>
<b>Natural gas</b>	2,850	14,442	17,492
<b>Nuclear</b>	5,986	19,200	25,186
<b>Coal</b>	4,471	4,315	8,786
<b>Wind</b>	3,688	24,047	27,735
<b>Other</b>	0	1,070	1,070
<b>Totals</b>	16,995	63,074	80,069

### 1.3. Potential Future Generation Interconnections

The table below summarizes the publicly known potential future generation projects for the ERCOT region. (IA=Interconnect Agreement, PL=Public Letter)

FUTURE GENERATION INTERCONNECTIONS (PUBLIC PROJECTS) As of April 30, 2007								
INR #	Site Name	Status	County	Region	Fuel	In Service Date	MW into Grid	Change from Last Report
06INR0016	Dow 9	IA	Brazoria	South	Gas	Mar-07	0	
06INR0037	Buffalo Gap 2	IA	Taylor	West	Wind	Mar-07	233	
06INR0035	Colorado Bend 1	IA	Wharton	South	Gas	Apr-07	275	
06INR0036	Quail Run 1	IA	Ector	West	Gas	Apr-07	275	
06INR0038	Scurry County 1	IA	Scurry	West	Wind	May-07	130	
03INR0030	Wild Horse 1	IA	Cottle	West	Wind	Jun-07	126	
07INR0003	Whirlwind 1	IA	Floyd	West	Wind	Sep-07	60	
06INR0021	Barton Chapel	IA	Jack	North	Wind	Oct-07	120	
07INR0018	Capricorn Ridge 1	IA	Coke	West	Wind	Nov-07	350	Signed IA
07INR0028	Goat Wind 1	IA	Sterling	West	Wind	Dec-07	150	Signed IA
04INR0011	Mesquite Wind 2	IA	Shackelford	West	Wind	Dec-07	200	
04INR0017	Ocotillo Wind Farm 1	IA	Howard	West	Wind	Dec-07	59	
04INR0020	Project Snyder	IA	Scurry	West	Wind	Dec-07	63	
07INR0045	Roscoe 1	IA	Scurry	West	Wind	Dec-07	209	
07INR0010	Stanton Wind 1	IA	Martin	West	Wind	Dec-07	101	
03INR0034	Silver Star 1	IA	Erath	North	Wind	Dec-07	60	
07INR0010	Stanton Wind 1	IA	Martin	West	Wind	Dc-07	101	Signed IA
07INR0023	Sweetwater Wind 4	IA	Nolan	West	Wind	Dec-07	300	
07INR0030	Buffalo Gap 3	IA	Nolan	West	Wind	Apr-08	138	
06INR0035	Colorado Bend 2	IA	Wharton	South	Gas	May-08	275	
06INR0036	Quail Run 2	IA	Ector	West	Gas	May-08	275	
07INR0022	Airtricity Panther Creek	IA	Howard	West	Wind	Jun-08	150	Signed IA
03INR0030	Wild Horse 2	IA	Cottle	West	Wind	Aug-08	39	
05INR0015	Gulf Wind 1	PL	Kenedy	South	Wind	Sep-08	400	
09INR0006	Oak Grove 1	IA	Robertson	North	Coal	Apr-09	855	
09INR0006	Greenville	PL	Hunt	North	Gas	May-09	1750	
08INR0003	Sandow 5	IA	Milam	North	Coal	Jul-09	581	
05INR0015	Gulf Wind 2	PL	Kenedy	South	Wind	Sep-09	400	
09INR0015	Comanche Peak 1 & 2 Upgrade	PL	Somervell	North	Nuclear	Oct-09	86	
09INR0006	Oak Grove 2	IA	Robertson	North	Coal	Oct-09	855	
09INR0002	J K Spruce 2	IA	Bexar	South	Coal	Jun-10	750	
05INR0015	Gulf Wind 3	PL	Kenedy	South	Wind	Sep-10	400	
09INR0001	Sandy Creek 1	IA	McLennan	North	Coal	Sep-10	800	
11INR0001	Twin Oaks 3	PL	Robertson	North	Coal	Jun-11	630	
15INR0002	Comanche Peak 3 & 4	PL	Somervell	North	Nuclear	Jan-15	3200	
15INR0008	South Texas Project 3 & 4	PL	Matagorda	South	Nuclear	Jan 2015	2700	
						Total	16,995	

## 2. Dynamic Analysis and Modeling

- Continuing to support PTI in the development of combined cycle power plant stability models.
  - Addressed issues with data from the “ERCOT Combined Cycle Dispatch survey” that were identified by PTI. The due date to complete the project is extended to the end of May, 2007 due to delays getting data from stakeholders.
- DFW Dynamic Reactive Devices
  - Further review of the project continues. – Dynamic simulation runs were done to test additional scenarios, project presented and reviewed at ERCOT regional planning meeting. Developed tool to data mine relay activity during simulation runs.
  - Preparing for continuing studies in 2007 - need completion of DWG base case with wind models and approval of study scope.
- Testing and verifying compatibility of wind user models with PSS/e V30.3.2
  - Requested and have not yet received update for Siemens model
  - Requested and have not yet received update for Suzlon model
  - Requested and received update for Gamesa G8X model. Previous initialization/convergence issues with their model appear to have been resolved.
  - All other wind models currently used in ERCOT (Mitsubishi, GE, Vestas, Bonus, Micon and Kennetech) were recompiled or updated and successfully tested.
- Supporting System Operations with the analysis and enforcement of real time voltage stability limits and transient stability limits, modeling of wind plants and special devices (variable frequency transformer)
- Generic wind model development with UWIG and WECC. ERCOT will research if such models can be developed in-house for TSAT
  - Latest PSS/e wind package includes generic type 3 (user) models
- EPRI dynamic load model development. Project due date set for second half of July 2007.
- Developing dynamic-ready 2010 base case, transient voltage recovery criteria, revision of high-set underfrequency load shedding schemes and draft requirements for field testing of NERC generator performance standards (PRC-019, PRC-024, MOD-026, MOD-027)

## 3. Regional Planning Activities

The following summarizes numerous significant activities associated with regional planning issues.

### 3.1. Coal Unit Integration Study

- The scope of this study was reduced significantly when TXU cancelled interconnection agreements for most of their planned coal units. The majority of the work associated with this project has been undertaken in response to various RPG project reviews.

### **3.2. CREZ Study (SB20).**

- Prepared direct testimony for PUCT Docket 33672 on this subject
- Reviewed testimony of other parties in Docket 33672
- The Wind Impact/Ancillary Services study has been started. ERCOT Load and wind generation data have been provided to GE Energy, and a kick-off meeting was held this week. The scope of work was presented at the April RPG meeting, and updates will be presented at the next WMS and ROS meetings. An ROS task force is being formed to provide stakeholder comment to the scope of work and eventually to provide initial review of preliminary findings.

### **3.3. Entergy Integration Study**

- Prepared direct testimony in PUCT Docket 33687 on this subject

### **3.4. Regional Planning Group Project Reviews**

- The following projects are required to go the BOD (detailed presentation is [item 10 below](#))
  - TNP-Bell County 345 kV double circuit estimated June 2007 BOD
  - HACM Phase II (Houston Area Constraint Mitigation) estimated June 2007 BOD
  - Parkdale Dynamic Reactive Project estimated September 2007 BOD

- TXUED TNP One – East Bell County 345kV Double Circuit Project has been submitted. This is a \$63 million project in north central Texas driven primarily by the proposed addition of new coal generation in the area. Comments have been received from stakeholders, which TXUED has addressed, and the ERCOT Independent Review of this project is nearing completion.
- TXUED Anna-Collin-NW Carrollton has been submitted and the ERCOT Independent Review is complete. The Anna-Collin portion of the project was presented to TAC in March and was recommended by the Board in April.
- TXU Able Springs has been submitted. It is a \$12.8 million project primarily to serve a customer in Kaufman County. Review of this project is nearing completion.
- CNP Houston Area Constraint Mitigation Phase II Project has been submitted. It is a \$37.9 million project to increase the North to Houston import capability. It has completed the comment phase with no comments requiring CNP resolution and is currently in ERCOT Independent Review.
- TXUED has submitted the Jewett to West Fairfield 138 kV line rebuild project. This is a \$17.9 M dollar project in Leon and Freestone counties. Review of this project is nearing completion
- LCRA has submitted the Evant to Lampasas 138 kV line rebuild project. This is the first project to be submitted by a transmission operator that originated from the ERCOT 2006 Five Year Plan. This is a \$7.8 M dollar project in Lampasas County and has been endorsed by the Regional Planning Group.
- LCRA has submitted the Paleface to Miller 138 kV line rebuild project. This is a \$9.4 M dollar project in Travis and Blanco counties. This project is currently under review.
- TXUED has submitted the Parkdale Dynamic Reactive Project. This is a \$45-\$98 M dollar project to add a dynamic reactive device in the DFW area. This project is currently in ERCOT Independent Review.
- GVEC has submitted the Wilson to Sutherland Springs 138 kV line project. This is a \$5.4 M dollar project to add a new 138 kV line in Wilson County. This project is currently in ERCOT Independent Review.
- CPSE has submitted the Skyline Auto #3 Addition project. This is a \$4.0 M project to add a third 345/138 kV autotransformer at Skyline substation in Bexar county. This project is currently in ERCOT Independent Review.
- TXUED has submitted the Shamburger Autotransformer Replacement Project to replace the 493 MVA 345/138 kV autotransformer with a 600 MVA unit. It is a \$5.8 million project in Smith County and is currently in Comment mode.
- TXU Wholesale has submitted the Sandow to Taylor to Hutto 138 kV Upgrade Project. It is a \$9.24 million project in Milam and Williamson Counties and is currently in Comment mode.

### **3.5. Other Projects/Studies**

- Regulatory support related to Entergy Integration study and CREZ study.

## 4. NERC Activities

### 4.1. Reporting

- Submitted ERO-2007LTRA (formerly EIA-411).
- Started work on FERC 714
- NERC MMWG meeting April 19
- Successful completion of NERC Audit without violations

## 5. Load Forecasting

### 5.1. Modeling

#### ERCOT Staff:

- Made some final revisions to the Load Shape and Energy forecasting models for the 2007 long-term peak and energy demand forecast.
- Re-ran and re-tested the revised models using extreme weather profiles to determine their impacts on the summer peak demand forecast.

### 5.2. Database Updating

#### ERCOT Staff:

- Provided ten years of temperature data to the Congestion Analysis group.
- Provided load forecast data from 2007 to 2020 to the Regional Planning group.

## 6. Data Activities

### 6.1. Case Building

- Advised SPWG model development
- Began Steady State WG 2008 Data Set A case building

### 6.2. Studies underway or planned within System Planning Division

- System Planning will be updating the generating units Pmax data in the base cases with the latest seasonal Net Dependable Capability test data in March and April

### 6.3. Other

- Worked with the Voltage Profile Group on the summer and fall profiles
- Met with SSWG to discuss improvements in 2008 Data Set A case building
- System Planning And Operations Map Access Approval –a user interface specialist is working with ERCOT to produce a new version of the (<http://oldercot.erct.com/tmaps>) site. A questionnaire email is sent to each person granted access to ERCOT secured website. These questions will be helpful so she may help streamline the tasks for the future site we're planning.
- TDSP Compliance Monitoring

## 7. Nodal/NMMS Activities

- Met with SSWG and Siemens to discuss the business rules for NMMS Topology Processor
- Provided NMMS MOD document review

## 8. Congestion Management/TCR Activities

### 8.1. Congestion Management Working Group Support

- Completed May TCR calculations
- Began audit of CSC and CRE process

### 8.2. Congestion Management & Transmission Projects Reports to WMS

- A summary of CSC utilization for the first quarter in 2007 was presented to WMS on 4/17. The presentation can be found at: <http://www.ercot.com/calendar/2007/04/20070417-WMS.html>

## 9. Maps/Graphics

- Completed and passed out first edition of an 8.5"x11" AutoCAD Transmission map book to augment the large Transmission map.
- Plotted Transmission, Zone, area maps for mailing and internal use and plotting oversized documents for others.

## 10. RPG Project Review Presentation

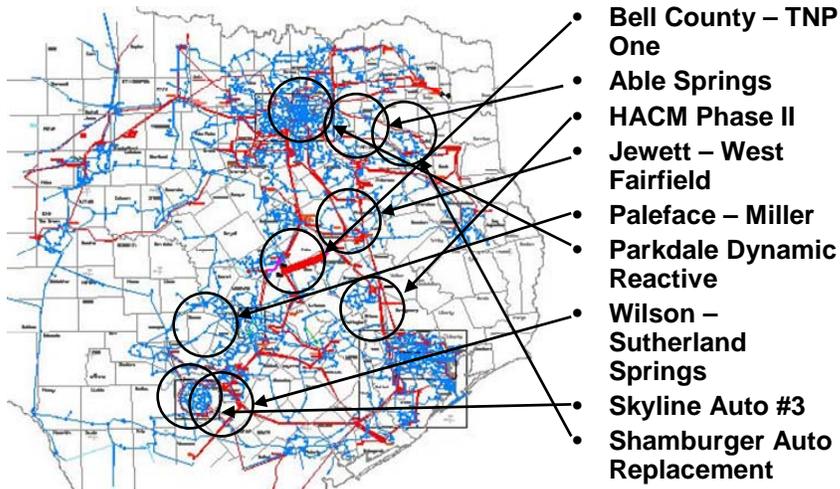


### Projects in Regional Planning Group Review Process

Jay Teixeira, P.E.  
Lead Engineer, System Planning

**RPG Meeting**  
4/13/2007

## Projects Overview



4/13/2007

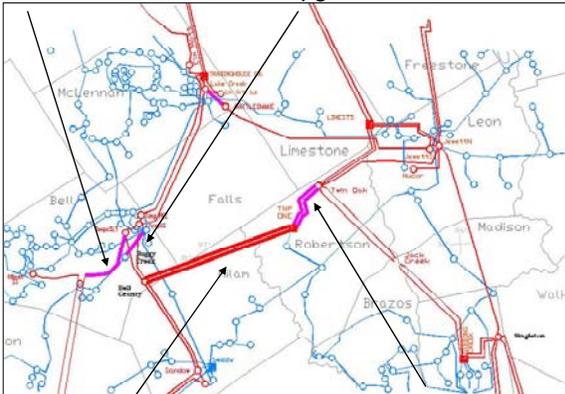
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## Bell County – TNP One

Temple – Salado  
Reconductor to 3200A

Temple – Boggy Creek  
Upgrade to 1146 A



- **Cost: \$69,337,000**
- **In Service: By peak 2011**
- **Status**
  - Submitted 11/30/2006
  - Comments 1/2/2007
  - Review 4/24/2007
  - TAC 6/2007
  - BOD 6/2007

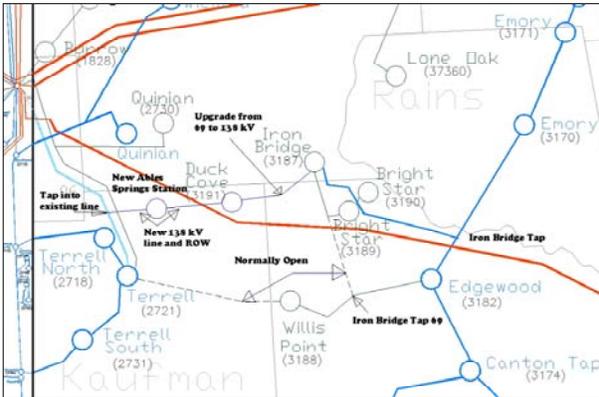


4/13/2007

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## Able Springs



- **Cost: \$12,830,000**
- **In Service: By peak 2010**
- **Status**
  - Submitted 1/5/2007
  - Comments 1/26/2007
  - Study Mode 3/16/2007
  - Review 4/30/2007
  - Under Study

Convert 69 kV line from Iron Bridge to Duck Cove to 138 kV, Extend to new 138 kV station Ables Springs, and continue new Build to tap point on Terrell SW. to Roysse SW. 138 kV line.

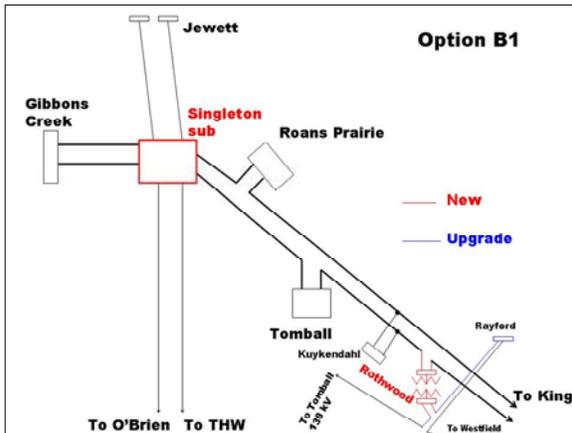


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## HACM Phase II



- **Cost: \$37,900,000**
- **In Service: By May 2009**
- **Status**
  - Submitted 1/8/2007
  - Comments 1/29/2007
  - Review 4/29/2007
  - TAC 6/2007
  - BOD 6/2007

Build 345 kV Switch Station Singleton at 345 kV intersection, 345/138 kV Rothwood, convert Rayford 138 station to loop/tap, Upgrade 2 345 kV circuits and 1 138 kV circuit.

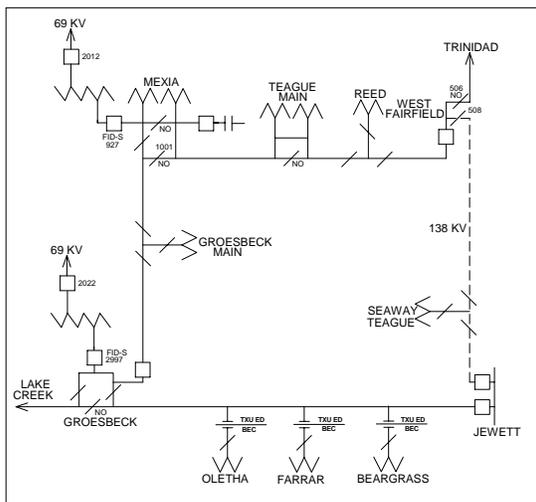


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## Jewett – West Fairfield



Reconnector Jewett to West Fairfield from 84 MVA to 214 MVA.

- **Cost: \$17,918,414**
- **In Service: By peak 2010**
- **Status**
  - Submitted 2/13/2007
  - Comments 3/6/2007
  - Study Mode 3/8/2007
  - Review 4/22/2007
  - Under Study

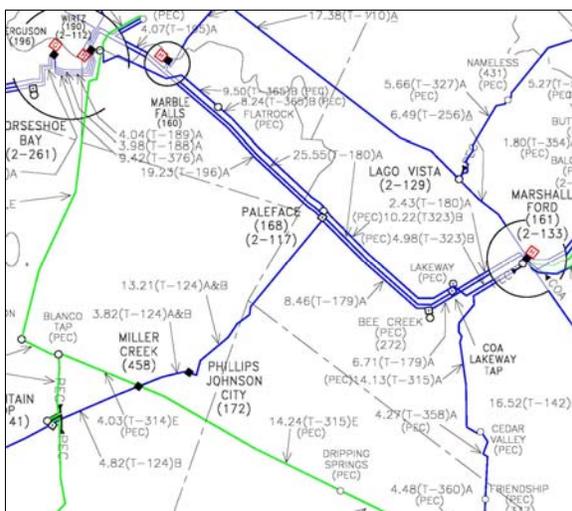


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## Paleface – Miller



Upgrade Paleface – Johnson City Phillips – Miller Creek from 82 MVA to 220 MVA

- **Cost: \$9,394,000**
- **In Service: By end June 2011**
- **Status**
  - Submitted 2/26/2007
  - Comments 3/19/2007
  - Review 5/3/2007
  - Under Study

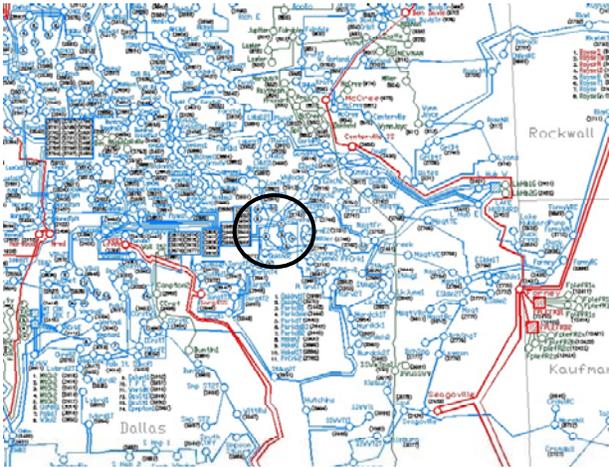


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## Parkdale Dynamic Reactive



- **Cost: \$45-98 M**
- **In Service: Peak 2009**
- **Status**
  - Submitted 2/28/2007
  - Comments 3/26/2007
  - Review end approx 7/22/2007
  - TAC 9/2007
  - BOD 9/2007

Add up to 600 Mvar dynamic reactive devices at Parkdale Station.



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## Wilson – Sutherland Springs



- **Cost: \$5,364,665**
- **In Service: Winter 2009**
- **Status**
  - Submitted 3/14/2007
  - Comments 4/9/2007
  - Review 5/24/2007
  - Under Study

Construct new 220 MVA 138 kV from GVEC Wilson Substation to FELP Sutherland Springs substation.

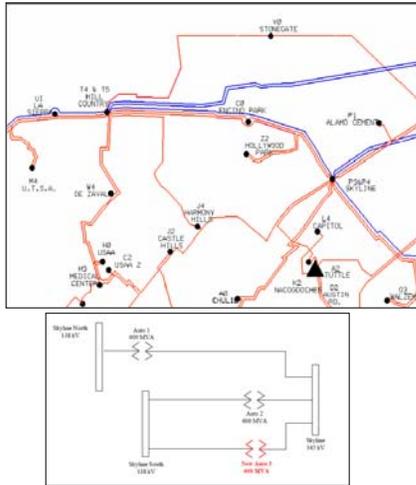


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## Skyline Auto #3



- **Cost: \$4,000,000**
- **In Service: peak 2010**
- **Status**
  - Submitted 3/29/2007
  - Comments 4/19/2007
  - Review 6/3/2007
  - In Comment Period

Add 3<sup>rd</sup> 345/138 kV autotransformer at Skyline substation.

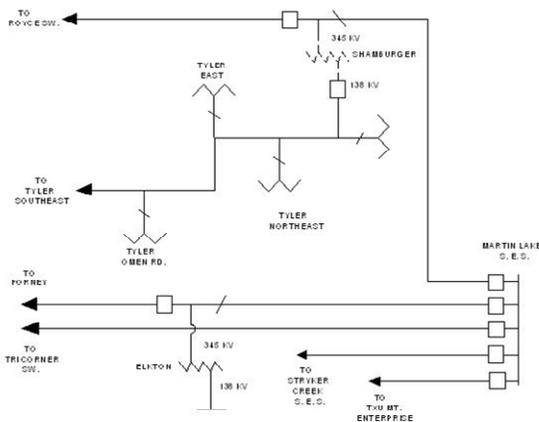


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## Shamburger Auto Replacement



- Cost: \$5,760,000**
- In Service: peak 2007**
- Status**
  - Submitted 4/10/2007
  - Comments 4/11/2007
  - Review 5/2/2007
  - In Comment Period

Replace existing 345/138 kV 493 MVA autotransformer at Shamburger with new 600 MVA autotransformer.



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Questions?