

**SPP** Southwest Power Pool

HELPING OUR MEMBERS WORK TOGETHER  
TO KEEP THE LIGHTS ON... TODAY AND IN THE FUTURE

**Spring 2008 Stakeholders Meeting**  
**May 22 & 23, 2008**

Prepared by:  
**Independent Transmission Organization**

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**Introductions & Overviews**

**Bruce Rew**

**May 22, 2008**

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## Introductions & Overviews

- ❖ **Logistics**
  - ◆ **Safety**
  - ◆ **Breaks/Lunch**
  - ◆ **Restrooms**
- ❖ **Introductions**
- ❖ **Overview of Meeting**



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## Open Action Items from Fall 2007 Stakeholder Meeting

**Edmundo Toro**

**May 22, 2008**

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## Open Action Items

- ❖ Glenn Flood and Tom Krebs (E.ON) – Why are the values at hour 23:00 going to zero? **After further investigation, we determined that this was caused by an ATC data retrieval delay. The ITO revised the automated scripts to allow for faster data retrieval from the ftp sites in order to remedy the problem.**
- ❖ Darrin Adams (EKPC) – What are the criteria for impacted systems in the process of the LGIP? **The ITO uses good engineering judgment to identify any potentially affected systems in order to determine who should be included in the initial Scope Meetings.**

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## Open Action Items (Cont.)

- ❖ Daryn Barker (EON) and EKPC – What is the process by which the a customer can request service redundancy? This was an option in MISO; is it available now? **E.ON is currently drafting proposed tariff amendments that may address this issue. Until then, these requests will be handled on a case-by-case basis.**
- ❖ Darrin Adams (EKPC) – Does the ITO have a process to evaluate interconnections requests? **These requests are currently being evaluated by E.ON as part of the TEP. The ITO will review these requests as part of their independent assessment of the TEP. This process will be included as a Business Practices in the future.**

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## Questions?



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**ITO – Operations**

**Chris Lax**

**May 22, 2008**

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## ITO Operations

- ❖ **Operational Data**
  - ◆ **Tariff Administration**
  - ◆ **Scheduling**
  - ◆ **CRSG Events**
  - ◆ **TLR Statistics**
- ❖ **AFC/ATC**
  - ◆ **Statistics/Metrics**
  - ◆ **Stakeholder Questions**

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## Tariff Administration

- ❖ **Reservations**
  - ◆ **6962 Total Reservations processed**
  - ◆ **6453 TSRs Confirmed**
  - ◆ **7 TSRs in Study**
  - ◆ **239 TSRs Refused or Declined**
  - ◆ **263 TSRs Withdrawn, Retracted, Annulled, Displaced or Invalid**
- ❖ **Additional Analysis of Reservations can be found at**
  - ◆ [http://www.spp.org/publications/TSR%20Stats SM 200805.xls](http://www.spp.org/publications/TSR%20Stats_SM_200805.xls)

4

## Scheduling

- ❖ The ITO processed 8029 e-Tags from November 2007 through April 2008.

MWh Used from November 2007 through April 2008							
Path	Nov-07	Dec-07	Jan-08	Feb-08	Mar-08	Apr-08	Total
BREC-LGEE	0	0	0	0	276	0	276
EKPC-LGEE	0	50	0	0	0	2,123	2,173
LGEE-EKPC	4,444	7,162	2,768	362	1,858	909	17,503
LGEE-MISO	47,427	131,519	200,100	124,443	157,425	128,725	789,639
LGEE-PJM	36,051	105,773	97,196	50,666	67,466	72,259	429,411
LGEE-TVA	36,733	65,668	29,665	9,057	32,173	22,417	195,713
MISO-LGEE	27,896	7,070	16,747	54,430	37,728	41,091	184,962
OVEC-LGEE	99,765	101,704	117,494	88,760	101,435	100,832	609,990
OVEC-MISO	18,699	19,175	22,079	16,625	18,983	18,842	114,403
PJM-BREC	74	0	0	0	0	0	74
PJM-LGEE	13,071	5,874	19,774	50,368	47,794	36,743	173,624
TVA-LGEE	5,205	462	4,946	6,081	387	2,323	19,404
<b>Total</b>	<b>289,365</b>	<b>444,457</b>	<b>510,769</b>	<b>400,792</b>	<b>465,525</b>	<b>426,264</b>	<b>2,537,172</b>

5

## CRSG Events

- ❖ 228 Total Events from November 2007 through April 2008
- ❖ 21 Events were called by LGEE
- ❖ Additional CRSR Statistics can be found at
  - ◆ [http://www.spp.org/publications/CRSG%20Stats SM 200805.xls](http://www.spp.org/publications/CRSG%20Stats%20SM%20200805.xls)

6

## TLR Statistics

TLRs per Month	
Month	Total TLRs Called on LGEE FGs
Nov-07	0
Dec-07	0
Jan-08	42
Feb-08	80
Mar-08	0
Apr-08	0
<b>Total</b>	<b>122</b>

TLRs Called per Level	
TLR Level	TLRs Called
0	13
1	11
3a	63
3b	11
4	24
5	0
<b>Total</b>	<b>122</b>

*\*All TLR data was provided by TVA (RC).*

## TLR Statistics

TLRs per Flowgate - Nov 2007 through Apr 2008	
Flowgate	TLRs Called
Smith 138/345 (flo) Hardinsburg-Hardin Co. 138	90
Smith 138/345 (flo) Ghent-West Lexington 345	22
Northside-Clifty Creek 138 (flo) Trimble Co.-Clifty Creek 345	5
River Queen Tap-Earlington North 161	5
<b>Total</b>	<b>122</b>

- ❖ The TLR information can be found at
  - ◆ <http://www.spp.org/publications/TLR%20Stats.xls>

*\*All TLR data was provided by TVA (RC).*

## Daily Firm (Day Ahead) ATC Metrics

❖ Analysis of the Daily Firm ATC Metrics can be found at

- ◆ <http://www.spp.org/publications/Daily%20ATC%20SM%20200805.xls>



## Hourly Non-Firm ATC Metrics

❖ Analysis of the Hourly Non-Firm ATC Metrics can be found at

- ◆ [http://www.spp.org/publications/HNF\\_LimitedFG.xls](http://www.spp.org/publications/HNF_LimitedFG.xls)



## Stakeholder Questions

- ❖ How would CBM and TRM be handled if requested by the LSE?
  - ♦ CBM may be requested by the LSE in times of emergency generation deficiency. In the ATC process CBM is released at noon (EPT) as available capacity. The CBM Use Procedure is posted on the LGEE OASIS at
    - \* [https://sppoasis.spp.org/documents/LGEE/uploads/CBM\\_Use\\_Procedure.pdf](https://sppoasis.spp.org/documents/LGEE/uploads/CBM_Use_Procedure.pdf)
  - ♦ TRM is set aside for inherent uncertainty in system conditions and its associated effects on ATC calculations and the need for operating flexibility to ensure reliable system operation as system conditions change. The TRM Methodology is posted on the LGEE OASIS at
    - \* [https://sppoasis.spp.org/documents/LGEE/uploads/121007\\_EON\\_Draft\\_TRM\\_Methodology\\_2007oct.pdf](https://sppoasis.spp.org/documents/LGEE/uploads/121007_EON_Draft_TRM_Methodology_2007oct.pdf)

11

## Questions



12

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**ITO – Tariff Studies**

**Edmundo Toro**

**May 22, 2008**

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## Outline

- ❖ **SIS Metrics**
- ❖ **SIS Process Overview**
- ❖ **Questions**

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## SIS Metrics – 2007 Q4 and 2008 Q1

- ❖ **New SISA delivered – 14**
- ❖ **New SISA executed – 13**
- ❖ **SIS Completed – 16**
- ❖ **SIS Completed Late – 0**
- ❖ **SIS Avg. Completion time – 56**

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## FS Metrics – 2007 Q4 and 2008 Q1

- ❖ **New FSA delivered – 8**
- ❖ **New FSA executed – 6**
- ❖ **FS Completed – 6**
- ❖ **FS Completed Late – 2**
- ❖ **FS Avg. Completion time – 60.5**
- ❖ **Study Metrics:**  
<http://www.spp.org/section.asp?group=1143&pageID=27>

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## SIS Process Overview

- ❖ **Scoping Meeting**
- ❖ **Prepare & Review Models**
- ❖ **Evaluate Generator Outages**
- ❖ **Perform Contingency Analysis**
- ❖ **Prepare Results and Report**

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## Questions?



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# ITO – LGI Studies

**Jonathan Hayes**

**May 22, 2008**

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## Topics

- ❖ **Update / Coordination**
- ❖ **Process Overview**
- ❖ **Goals**





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## Update / Coordination

- ◆ **4 Active requests**
- ◆ **Public info (Oasis)**
- ◆ **Study group participants**



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# Public Info Update

Generation Interconnection Number	Nearest Town or County	State	CA	In-Service Date (proposed)	CAPACITY (MW)	Type	STATUS
LGE-LGI-2007-001	Central City	KY	LGEE	1/12/2015	750.0	Steam	FACILITY STUDY IN PROGRESS
LGE-LGI-2007-002	Central City	KY	LGEE	6/1/2014	610.0	Combined Cycle	IMPACT STUDY IN PROGRESS
LGE-LGI-2007-004	Henderson County	KY	LGEE	3/31/2011	640.0	Combined Cycle	IMPACT STUDY SET TO BEGIN
LGE-LGI-2008-001	Wise County	VA		12/1/2011	150.0	Wind	FEASIBILITY STUDY REQUESTED



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## Active Study Group Participants

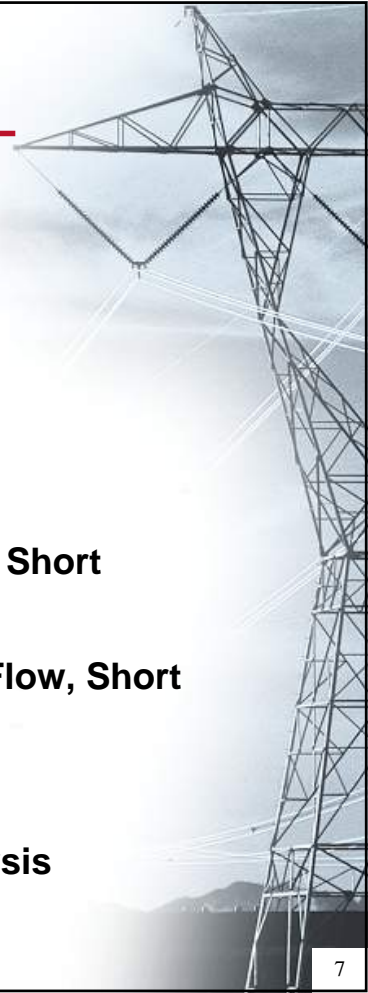
- ❖ **Jonathan Hayes (ITO)**
- ❖ **Ben Garffie (EON-US)**
- ❖ **Tom Seeley (EON-US)**
- ❖ **Mike Toll (EON-US)**
- ❖ **Chris Bradley (BREC)**
- ❖ **Larry Rogers (Vectren)**
- ❖ **Al Corbett (TVA)**
- ❖ **Darrin Adams (EKPC)**
- ❖ **Greg McKinney (EKPC)**
- ❖ **Michael Herman (PJM)**
- ❖ **John Fedorko (AEP In PJM planning)**
- ❖ **Richard Belzowski (MISO)**





## GI Process Overview

- ❖ **Agreements/Bids**
- ❖ **Scoping Meeting (s)**
- ❖ **Prepare Models**
- ❖ **Perform Feasibility Analysis (Power Flow/ Short Circuit)**
- ❖ **Perform System Impact Analysis (Power Flow, Short Circuit, and Dynamic)**
- ❖ **Prepare/Post Results and Report**
- ❖ **Coordinate data transfer for Facility Analysis**





## Goals

- ❖ **Training to bring parts of analysis in house**
- ❖ **Streamline Agreements/Application**
- ❖ **Look for ways to improve Communication / Coordination.**

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# Questions ?



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## ITO Transmission Stakeholder Meeting

Keith Yocum  
Manager, Transmission Strategy and Planning

May 22-23 2008



### Topics to be Covered

Tariff filing updates  
Attachment K planning cycle  
SIRPP  
Business Practice Changes

**Attachment K**

- Filed with FERC on 12/7/07 (See Docket No. OA08-27 for as filed Attachment K)
- Not yet approved; will schedule first meeting of Stakeholder Planning Committee within 120 days of approval, pursuant to Attachment K.

**Attachment C**

Originally filed with FERC on 9/11/07 (See Docket No. OA07-93)  
 FERC accepted the filing 3/26/08, subject to revisions, which were filed 4/25/08.  
 Required revisions include further details on TRM, CBM, etc.

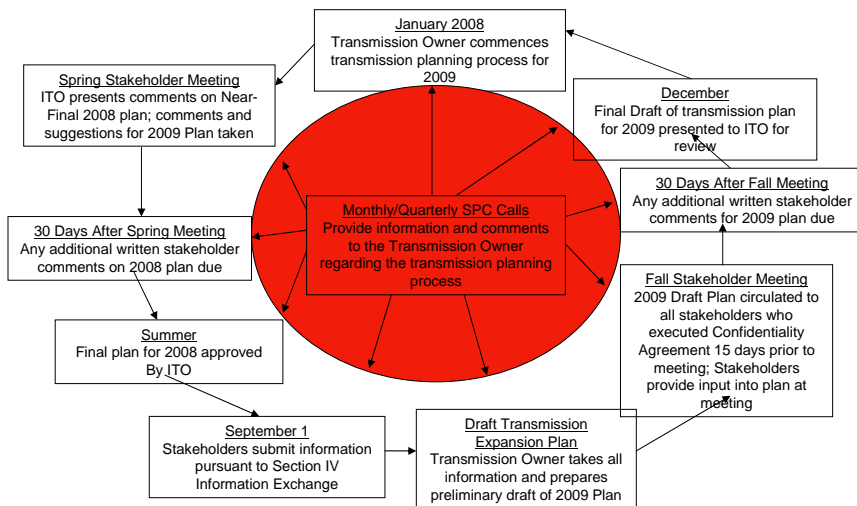
**Order 890A Compliance Filing**

Filed with FERC on 3/17/08 (See Docket No. OA08-76)

**Revisions include:**

FERC required changes to various sections of OATT, including Schedules 4 and 9 (generator imbalance service requirements, penalties, incremental cost definitions, netting...)  
 FERC required clarifications of Attachment C and K  
 Adding new Schedule 13 on unreserved use penalties (200% of rate for firm point to point service)

**Proposed Attachment K Transmission Planning Cycle**



## **Southeast Inter-Regional Participation Process (SIRPP)**

- Formed as a result of FERC Order 890 to facilitate the regional participation principle
- Inter-regional process is incorporated into the participant's Attachment K
- Provides a mechanism for stakeholders to request economic planning studies
- Augments the Regional Planning Process by facilitating studies involving more than one region
- Stakeholders can request up to 5 studies a year
- Studies can lead to Economic Upgrade Projects
- Costs for Economic Upgrades Projects would be allocated among interested stakeholders by the Regions
- For more information: [www.southeastirpp.com](http://www.southeastirpp.com)

### **SIRPP Sponsoring Companies**

- |                                                |                                 |
|------------------------------------------------|---------------------------------|
| - Power South                                  | - Dalton Utilities              |
| - Georgia Transmission Corporation (GTC)       | - Duke Energy Carolinas         |
| - Entergy                                      | - E.ON U.S.                     |
| - MEAG                                         | - Progress Energy Carolinas     |
| - Santee Cooper                                | - South Carolina Electric & Gas |
| - South Mississippi Electric Power Association | - Southern Companies            |
| - TVA                                          |                                 |

## **Business Practice Changes**

- Posted for comment on April 21<sup>st</sup>
- NITSA application must include 10 year forecast of load and resources
- Attestation of qualification of Designated Network Resources is required
- Request for PTP or Network must be at least 5 years to receive Rollover Rights
- 890 requires the TSP to post a brief narrative explanation for an event that triggers TTC to change by 10% or more
- For slice of system sales the network customer does not need to undesignate a portion of all resources; can just undesignate an equivalent amount
- Modified preconditions before service request; Added Credit requirements (credit worthiness criteria must be met, etc)

**Business Practice Changes**

•When the ITO completes an SIS, it will notify the customer by e-mail that the SIS report has been posted. A customer can also receive an e-mail when the status on a TSR changes on OASIS if the e-mail notification option is selected by the customer upon submission of the request. Customers must “confirm” requests within the time limits specified in the table in section 3.9 of the Business Practices.

Service Class	Customer Confirmation Time after Accepted by ITO
NF Hourly–present day	5 min.
NF Hourly –day ahead	30 min.
NF Daily	2 hrs
NF Weekly	24 hrs
NF Monthly	24 hrs
Firm Daily (<24 hrs before)	2 hrs
Firm Daily (>24 hrs before)	24 hrs
Firm Weekly	48 hrs
Firm Monthly	4 days
Firm Yearly	15 days

**Business Practice Changes**

•Changes to Study Process for PTP Service

- Once it is determined a SIS is needed to accommodate a PTP TSR the ITO will tender a SIS agreement to the customer within 30 days
- Customer must execute the SIS Agreement and return within 15 days
- ITO will annul the request if customer fails to return within the 15 day window
- If during the SIS or FS process capacity comes available, the study process will end, the TSR will change from “study” to “accepted” and the customer will be notified as described in the previous slide. The time limits of Section 3.12 will then apply for the customer to “confirm”.
- Immediately upon completion of a Facility Study a service agreement will be tendered to the customer
- Customer must sign and return or request to file unexecuted within 30 days
- Concurrently with tendering the Service Agreement the ITO will “accept” the TSR; the customer must confirm within the required time period specified in section 3.9 or the request will be withdrawn and terminated

## **Business Practice Changes**

- Changes to Study Process for Network Service
  - Appendix A added to business practices (previously was stand alone posting on OASIS) which describes criteria for notification of Network load changes
  - Single TSR allowed to study multiple load changes
  - Same time limits and notification procedures as described in the PTP process (i.e. 15 days to execute a FS and 30 days to execute a service agreement after the FS is completed)
  - For changes to the Transmission Owner's bundled native load a service agreement will not be tendered but the LSE must comply with the timing requirements of Section 3.9.

## **Business Practice Changes**

- Changes to Posting Requirements for Performance Metrics
  - Metrics will be separately tracked and posted for affiliate and non-affiliate TSRs
  - FAS Metrics will include:
    - Number completed
    - Number completed 30 days after receipt of executed agreement
    - Average number of days needed to complete
    - Average cost to complete
  - Transmission Service Metrics:
    - Number of TSRs (including Affiliate request)
    - Request by TO's Merchant function
    - Number of TSRs rejected

## **Business Practice Changes**

- Changes to Scheduling procedures
  - Tags will be denied if do not contain losses specified in section 5.4
  - Tags in effect for conditional firm service shall continue until NAESB and NERC develop tracking mechanisms for tracking and curtailing
  - Allows losses to be included in a dynamically scheduled pseudo-tied load schedule



Keith Steinmetz  
Mgr System Control Center

Spring ITO LG&E/KU Stakeholder Meeting  
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## NERC Standards for ACE and metering

### **Standard BAL-005-0 — Automatic Generation Control**

- **R1.** All generation, transmission, and load operating within an Interconnection must be included within the metered boundaries of a Balancing Authority Area.
- **R3.** A Balancing Authority providing Regulation Service shall ensure that adequate metering, communications, and control equipment are employed to prevent such service from becoming a Burden on the Interconnection or other Balancing Authority Areas.
- **R8.** The Balancing Authority shall ensure that data acquisition for and calculation of ACE occur at least every six seconds.
- **R12.3.** Balancing Authorities shall install common metering equipment where Dynamic Schedules or Pseudo-Ties are implemented between two or more Balancing Authorities to deliver the output of Jointly Owned Units or to serve remote load.

Spring ITO LG&E/KU Stakeholder Meeting May 22-23, 2008 Transmission Page 2

### Recommended telemetry: Other Control Area Loads

<b>Analog Points:</b>	MW, MVAR and Voltage value associated with the load (individual or aggregate)
	If SEL or other relaying exists which make telemetry of phase angle measurements relatively easy, we wish to bring that information back to the EMS.
<b>Accumulator Points:</b>	MWh value associated with the load (individual or aggregate)
	Accumulator points should be 1 MWh per pulse

### Recommended Telemetry: Tie Line Interconnections

<b>Control/Indication Points:</b>	Breaker control at the connection point.
	Power Line Carrier, Fiber Optic or Relay Signaling Equipment Alarm (Transfer Trip Alarms, etc.)
<b>Analog Points:</b>	MW flow on each line (note: the metering is usually at the "non-owner" site because the owner of the line covers the losses, OR per contractual agreement)
	MVAR flow on each line
	Tone Telemetry Backup MW
	If SEL or other relaying exists which make telemetry of phase angle measurements relatively easy, we wish to bring that information back to the EMS.

## Recommended Telemetry: Tie Line Interconnections (cont)

<b>Analog Points:</b> (cont)	Dual port all transmission tie RTUs back to both control centers.
<b>Accumulator Points:</b>	MWh flow in for each line (note: the metering is usually at the “non-owner” site because the owner of the line covers the losses, OR per contractual agreement)
	MWh flow out for each line
	Accumulator points should be 1 MWh per pulse

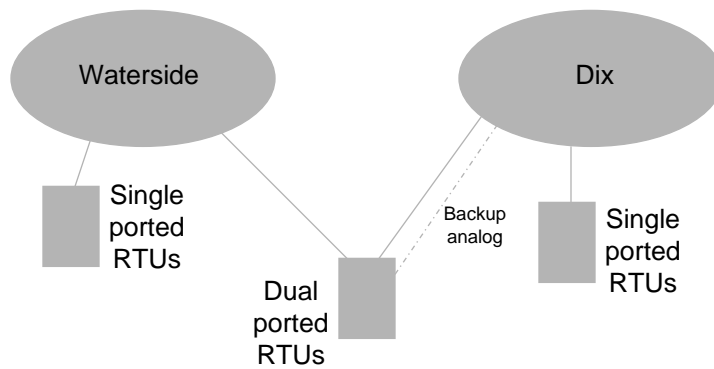
## Recommended Telemetry: IPPs

<b>Indication Points:</b>	Generator breaker status or breaker status from the high side of the GSU transformer for each unit.
<b>Analog Points:</b>	Net MW output at each unit
	Net MVAR output at each unit
	Gross MW output for each unit.
	Gross MVAR output for each unit.
	If SEL or other relaying exists which make telemetry of phase angle measurements relatively easy, we wish to bring that information back to the EMS.
	Dual port all generation RTUs back to both control centers.

### Recommended Telemetry: IPPs (Cont)

<b>Accumulator Points:</b>	Net MWh output at each unit
	Net MWh input at each unit
	Accumulator points should be 1 MWh per pulse

### EMS Infrastructure



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**ITO - 2007 Transmission Expansion Plan**

**Edmundo Toro**

**May 22, 2008**

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## ITO's Assessment of E.ON's 2007 TEP

- ❖ **E.ON provided TEP Power Flow Models on Jan 8<sup>th</sup>, 2008**
- ❖ **08S, 08/09W, 11S, 11/12W, 16S & 16/17W seasonal model were provided**
- ❖ **ITO performed independent power flow analysis**
- ❖ **Powerflow analysis identified:**
  - ◆ **47 potential thermal issues**
  - ◆ **83 potential voltage issues**

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## Potential Thermal Issues

- ❖ **Out of the 47 Total Potential Issues identified:**
  - ◆ **25 were mitigated by existing Op. Guides or Mitigation Procedures for delayed projects (1 issue impacted EKPC facility and required coordination)**
  - ◆ **2 require new Op. Guides**
  - ◆ **10 were not overloaded based on E.ON's transformer high side flow.**
  - ◆ **9 were eliminated by correcting modeling issues or removing invalid outages.**
  - ◆ **For 1 issue, the proposed project needs an increased conductor size.**

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## Potential Voltage Issues

- ❖ **Out of the 83 Total Potential Issues identified:**
  - ◆ 33 issues were mitigated by existing switching procedures (1 EKPC S.P. )
  - ◆ 4 were mitigated by switching capacitors.
  - ◆ 27 were mitigated by proposed projects (1 EKPC project, 1 E.ON project requires acceleration).
  - ◆ 2 were alleviated by additional line switching suggested by E.ON
  - ◆ 14 were caused by an invalid outages.
  - ◆ 2 voltage issues were not considered problems because there is no load at those buses (E.ON Planning Guidelines).
  - ◆ 1 was caused by high voltages on TVA and requires coordination

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## ITO's Assessment of E.ON's Dynamic Analysis

- ❖ **Dynamic models and studies were provided to ITO in Apr 08.**
- ❖ **The ITO is assessing dynamic studies**

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## TEP Coordination

- ❖ **May Stakeholder Meeting Update**
- ❖ **RC Coordination**
- ❖ **TEP Report**
- ❖ **Fall Stakeholder Meeting Presentation**



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## Questions?



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**General Inquiries: 501-614-3200**

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**SPP** Southwest Power Pool

HELPING OUR MEMBERS WORK TOGETHER  
TO KEEP THE LIGHTS ON... TODAY AND IN THE FUTURE

**Spring 2008 Stakeholders Meeting**  
**May 22 & 23, 2008**

Prepared by:  
**Independent Transmission Organization**

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**SPP** Independent Transmission Organization

**Network Operating  
Committee Meeting**

**Edmundo Toro**

**May 23, 2008**

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## Introductions & Overviews

- ❖ **Logistics**
  - ◆ **Safety**
  - ◆ **Breaks/Lunch**
  - ◆ **Restrooms**
- ❖ **Introductions**
- ❖ **Overview of Meeting**

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## Procedural Issues

- ❖ **Committee Membership**
  - ◆ **Primary**
  - ◆ **Alternate**
- ❖ **Meeting Frequency**

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# Open Forum



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# Questions?



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