Single Entry Model (SEM) Go-Live Update

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ERCOT Board of Directors &

Special Nodal Program Committee

August 2009

- **ERCOT and Market Criteria Status for Go-Live Aug 31, 2009**

- **Market Readiness Criteria approval consideration (possible vote)**

- **Appendix**
  - What is SEM Go-Live?

SEM Go-Live Market Criteria Status (as of 8/17/2009)

TO/TDSP	Attendance at any of the SEM Market Calls	# of Representatives scheduled to take SEM Training	# of TDSP users with access to the test SEM environment	# Test NOMCRs Submitted by TDSPs to the test SEM environment
AEP TEXAS CENTRAL COMPANY	X	X	X	X
BRAZOS ELECTRIC POWER CO OP INC (TDSP)	X	X	X	X
BROWNSVILLE PUBLIC UTILITIES BOARD (TDSP)	X	X	X	X
BRYAN TEXAS UTILITIES (TDSP)	X	X	X	X
CENTERPOINT ENERGY HOUSTON ELECTRIC LLC (TDSP)	X	X	X	X
CITY OF AUSTIN DBA AUSTIN ENERGY (TDSP)	X	X	X	X
CITY OF COLLEGE STATION (TDSP)	X	X	X	X
CITY OF GARLAND (TDSP)	X	X	X	X
CPS ENERGY (TDSP)	X	X	X	X
DENTON MUNICIPAL ELECTRIC (TDSP)	X	X	X	X
GOLDEN SPREAD ELECTRIC COOPERATIVE INC (TSP)	X	X	X	X
LCRA TRANSMISSION SERVICES CORPORATION	X	X	X	X
ONCOR ELECTRIC DELIVERY COMPANY	X	X	X	X
RAYBURN COUNTRY CO OP DBA RAYBURN ELECTRIC (TDSP)	X	X	X	X
RIO GRANDE ELECTRIC CO OP (TDSP)	X	X	X	X
SOUTH TEXAS ELECTRIC CO OP INC	X	X	X	X
TEXAS MUNICIPAL POWER AGENCY	X	X	X	X
TEXAS-NEW MEXICO POWER CO (TDSP)	X	X	X	X
TEX-LA ELECTRIC CO OP OF TEXAS	X	X		X
WEATHERFORD MUNICIPAL UTILITY SYSTEM	X	X	X	X

Notes- ERCOT working one TSP to catch-up on final testing/training
- TSP has signed up for Sep 29th make-up training
- ERCOT will support this TSP (and any other TSP) with assistance in submission of NOMCRs

Overall SEM Go-Live ERCOT/Market Criteria Dashboard

Summary of Criteria from TAC-approved SEM Go-Live Procedure (http://nodal.ercot.com/readiness/golive/index.html)

Readiness Criteria called out in SEM Go-Live Procedure	Readiness status	Planned Completion date
TSPs & ERCOT complete EDS/trials activities (ie training and testing)	Green	Complete
Refer to overall engagment summary view (attendance, training, testing, submissions)	Green	Complete
On schedule to complete pre-SEM Go-Live training July 31	Green	Complete
Schedule to support Post Go-Live training scheduled for Sept 22-Oct 20	Green	Sept 29th
Actively pursuing the TSPs not engaged and/or deficient in training	Green	Complete
No Severity 1 or 2 issues in ERCOT or market testing	Green	Complete
Acceptable ratings of classroom training and system performance	Green	Complete
ERCOT sufficiently staffed for maintenance of nodal & zonal systems	Green	Complete
Network Model Group is staffed for dual entry of model changes into zonal and nodal	Green	
ERCOT publishes Network Operations Model validation whitepaper	Green	Complete
Delivered to NDSWG July 14th	Green	
Nodal EMS is capable of consuming NMMS CIM files through the EMS CIM importer for use in the Nodal EMS applications	Green	Complete
Model consumed by EMS (test/screening consumption on July 7, final on July 28)	Green	
ERCOT publishes latest CIM data dictionary and schema	Green	Complete
Posted final CIM 1.21 schema posted on July 31 (http://nodal.ercot.com/readiness/eds2/documents/index.html)	Green	
ERCOT publishes NMMS Modeling Guidelines / Validation Rules document	Green	Complete
Numerous meetings with NDSWG to refine guidelines, blackline version to publish Aug 14	Green	
ERCOT publishes Network Operations Model validation results	Green	Complete
ERCOT will publish analysis of validation results (including CIM Audit, Zonal/Nodal consistency check, Rules validation) Aug 17	Green	
Nodal network model validated and approved as baseline for SEM Go-Live by ERCOT SysOps and MarketOps Directors	Green	Complete
Sign-off will be based on Network Operations Model validation results Aug 17	Green	
SEM Go-Live readiness approved by TAC and ERCOT Board		Aug 18th
Consider timing of criteria/completions to determine when to vote		in progress
ERCOT publishes populated CIM model to be used for SEM Go-Live		Aug 30th
TAC approved posting model only to TSPs, and ERCOT has modified the systems accordingly		in progress

21.12.2 Notice to Market Participants of Activities Essential for Nodal Market Open

ERCOT shall issue Notices informing Market Participants of the confirmation of, or any changes to, the implementation schedules for each of the following nodal market design activities. The Notice will include an update of the implementation schedules for the remaining nodal market design activities:

    (1)   Single entry model;

    (2)   Initiation of the 168-hour testing;

    (3)   Completion of 168-hour test;

    (4)   First congestion revenue rights monthly auction;

    (5)   Real-time market implementation; and

    (6)   Day-ahead market implementation.

21.12.3 Notice to Market Participants of Effective Date for Nodal Protocol Provisions and Retirement of Zonal Protocol Provision

No part of the nodal market design may start operation until all the Market Readiness Criteria for that part of the nodal market design have been met. Certification that all Market Readiness Criteria have been met must be made at least by each of the following: the Transition Plan Task Force (TPTF), TAC, ERCOT Staff and the ERCOT Board. Upon such certification, ERCOT shall issue two Notices alerting Market Participants to the effective date of Nodal Protocol sections and the retirement of Zonal Protocol sections, as applicable. ERCOT shall issue the first Notice no less than thirty (30) days prior to the effective date or retirement date, as applicable, and the second Notice no less than ten (10) days prior to the effective date or retirement date, as applicable. The Notice shall include:

    (1)   The Nodal Protocol Sections to become effective and

    (2)   The Zonal Protocol Sections to be retired, if any.

Market Readiness Criteria approval consideration

- **Summary of Stakeholder meeting for SEM discussion/approval of Go-Live**
  - August 2009
    - 30-day Market Notice - sent July 31st
    - NDSWG special meeting Aug 4th
      - Agreement to 3 workarounds- Limits/Alarms, MVA, Owner/Operator
    - TAC met Aug 6th, deferred approval consideration to special TAC on Aug 18th
    - ROS meeting Aug 13th
      - No significant issues raised as implementation show-stoppers
    - ERCOT publishes results and sign-off of model from Directors on Aug 17th
    - TAC vote* - special meeting- Aug 18th 7:30am
    - BOD vote* - Aug 18th
    - 10-day Market Notice - Aug 21st
    - SEM Go-Live - Aug 31st

Market Readiness Criteria approval consideration

<u>Approved motion from special TAC meeting this morning (Aug 18, 2009):</u>

TAC certifies, to the best of its knowledge on August 18, 2009, that all Single Entry Model Go-Live Market Readiness Criteria have been met, or are on schedule to be delivered according to the go-live sequence.

TAC recommends that the Board also certify that all Market Readiness Criteria have been met for the Single Entry Model Go-Live on August 31, 2009. TAC acknowledges that the publishing of the Network Operations Model will only be made to the TSPs, and that further work is needed to address long-term model posting issues related to Resource data and transmission system validation criteria.

Concurrent with this certification, TAC acknowledges several outstanding issues remain to be resolved, but TAC is confident resolution can be achieved. TAC requests ERCOT staff promptly notify the NATF if any of these outstanding issues prevent proper maintenance and operation of the NMMS.

Market Readiness Criteria approval consideration

- **Board can consider whether "Certification that all Market Readiness Criteria have been met for Single Entry Model Go-Live on August 31, 2009"**
  - All training complete, and plans in place to support one TSP
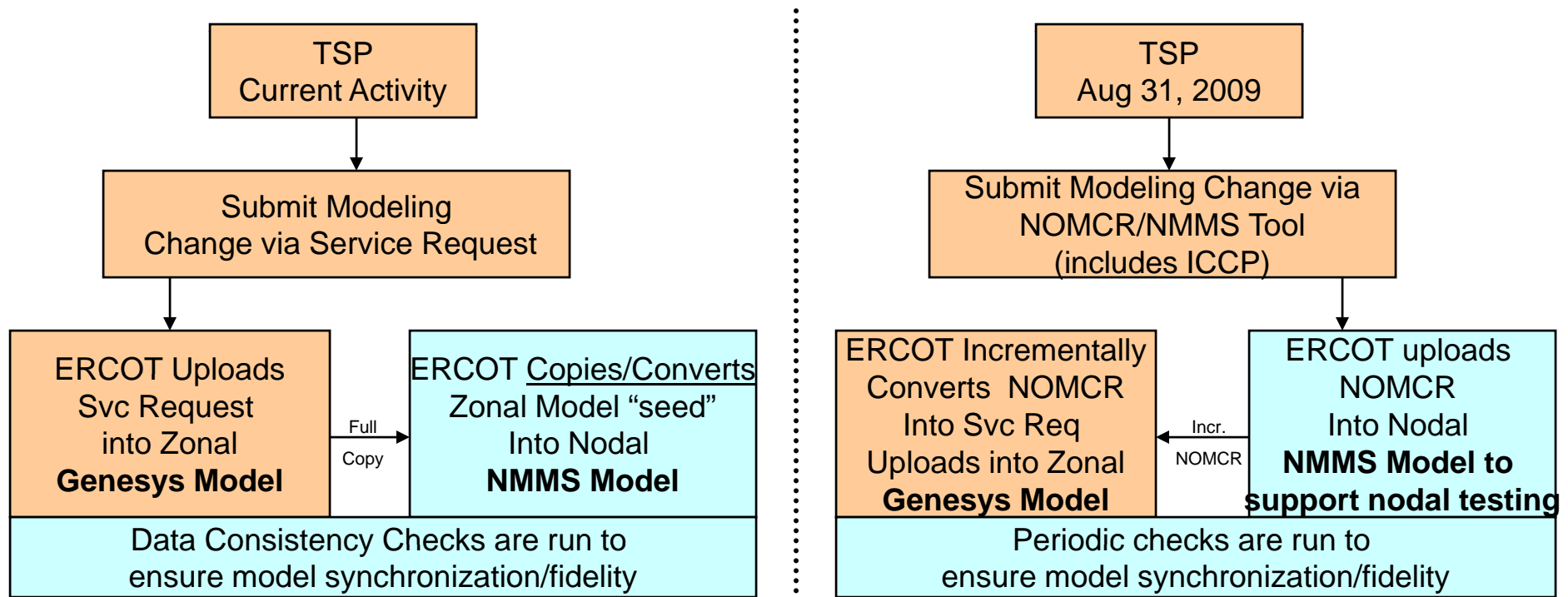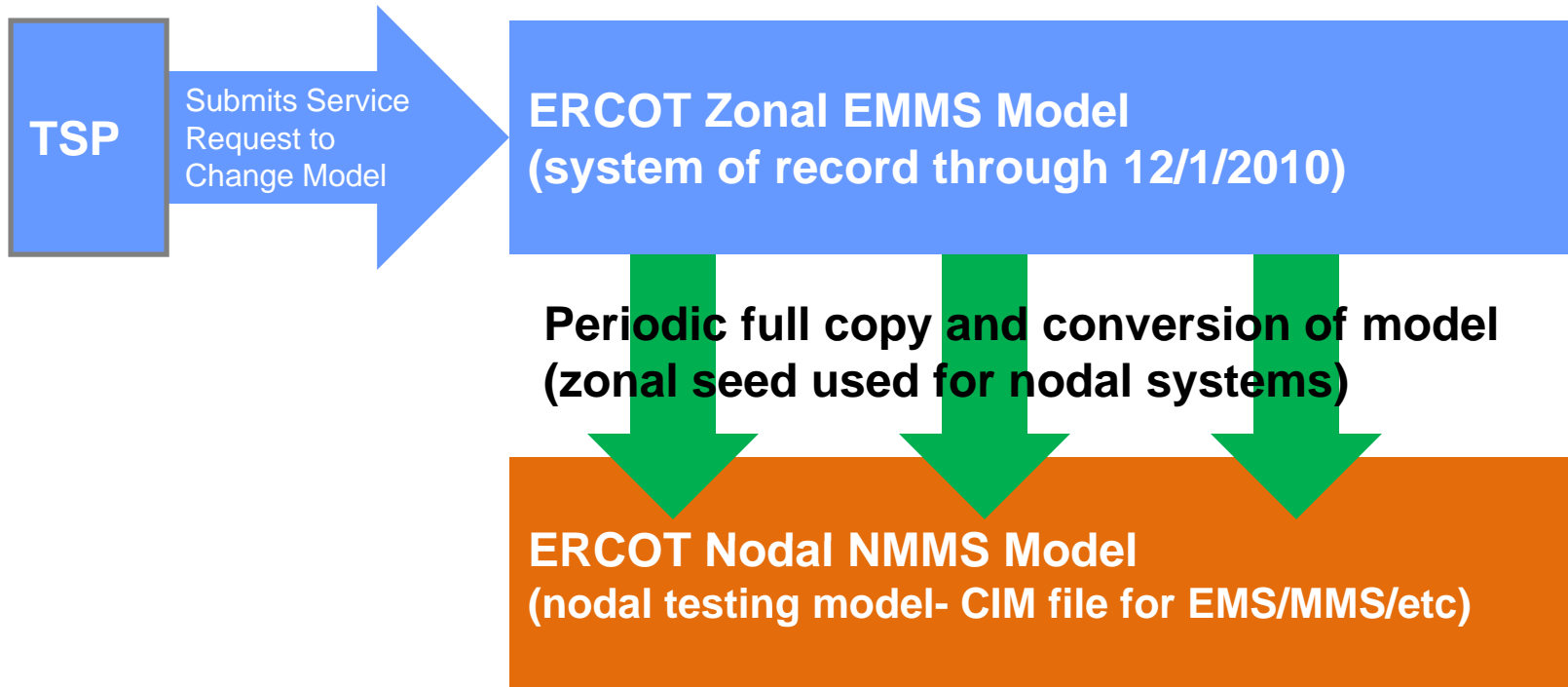 - Note that no protocol changes go into effect Aug 31 (system change only)

APPENDIX
   What is SEM Go-Live?
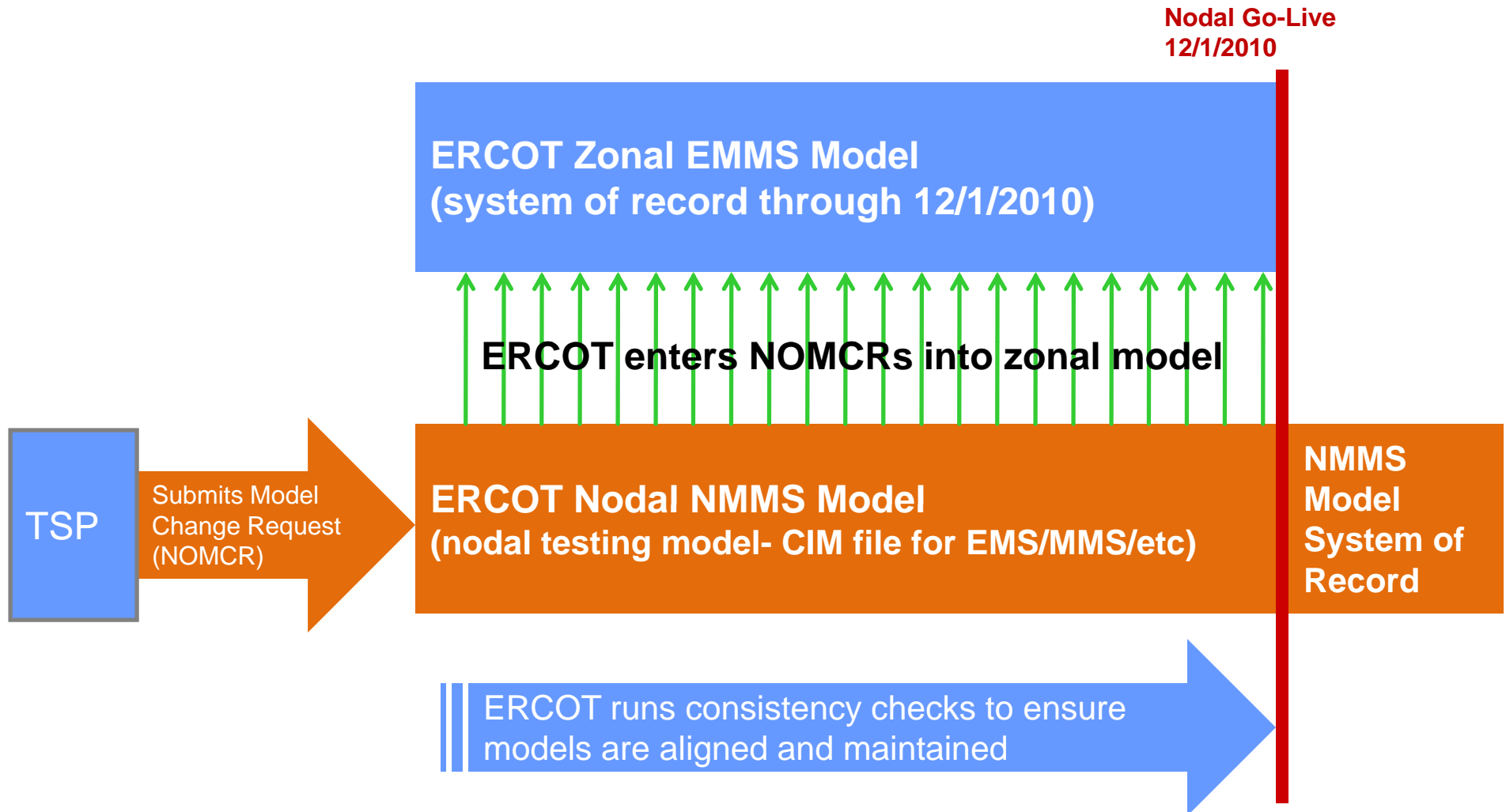
SEM Go-Live Overview

- **Single Entry Model (SEM) Go-Live is the switchover on Aug 31, 2009 for TSP submissions of network operations model change requests**
  - from "Service Request" submissions via TML
  - to "NOMCR" submissions via the NMMS
    - System of record for model changes becomes NOMCRs on 8/31//09
    - System of record for Network operations Model for reliability and dispatch remains Zonal/Genesys system until Dec 2010

TSP Current Activity

↓

Submit Modeling Change via Service Request

↓

ERCOT Uploads Svc Request into Zonal **Genesys Model**	→ Full Copy →	ERCOT Copies/Converts Zonal Model "seed" Into Nodal **NMMS Model**
Data Consistency Checks are run to ensure model synchronization/fidelity		

TSP Aug 31, 2009

↓

Submit Modeling Change via NOMCR/NMMS Tool (includes ICCP)

↓

ERCOT Incrementally Converts NOMCR Into Svc Req Uploads into Zonal **Genesys Model**	← Incr. NOMCR ←	ERCOT uploads NOMCR Into Nodal **NMMS Model to support nodal testing**
Periodic checks are run to ensure model synchronization/fidelity		

Nodal Go-Live 12/1/2010

**ERCOT Zonal EMMS Model
(system of record through 12/1/2010)**

ERCOT enters NOMCRs into zonal model

TSP

Submits Model Change Request (NOMCR)

**ERCOT Nodal NMMS Model
(nodal testing model- CIM file for EMS/MMS/etc)**

NMMS Model System of Record

ERCOT runs consistency checks to ensure models are aligned and maintained

Network Operations Model Maintenance for Resource & QSE (today and post 8/31/09)

Nodal Go-Live 12/1/2010

ERCOT Zonal EMMS Model (system of record through 12/1/2010)

ERCOT enters into zonal model

ERCOT Nodal NMMS Model (nodal testing model- CIM file for EMS/MMS/etc)

NMMS Model System of Record

QSE — Submits ICCP Change via Service Request

RE — Submits RARF (Resource Asset Reg Form) via Service Request

ERCOT process