



ERCOT Enhanced Reliability & Markets Implementation: Program Update

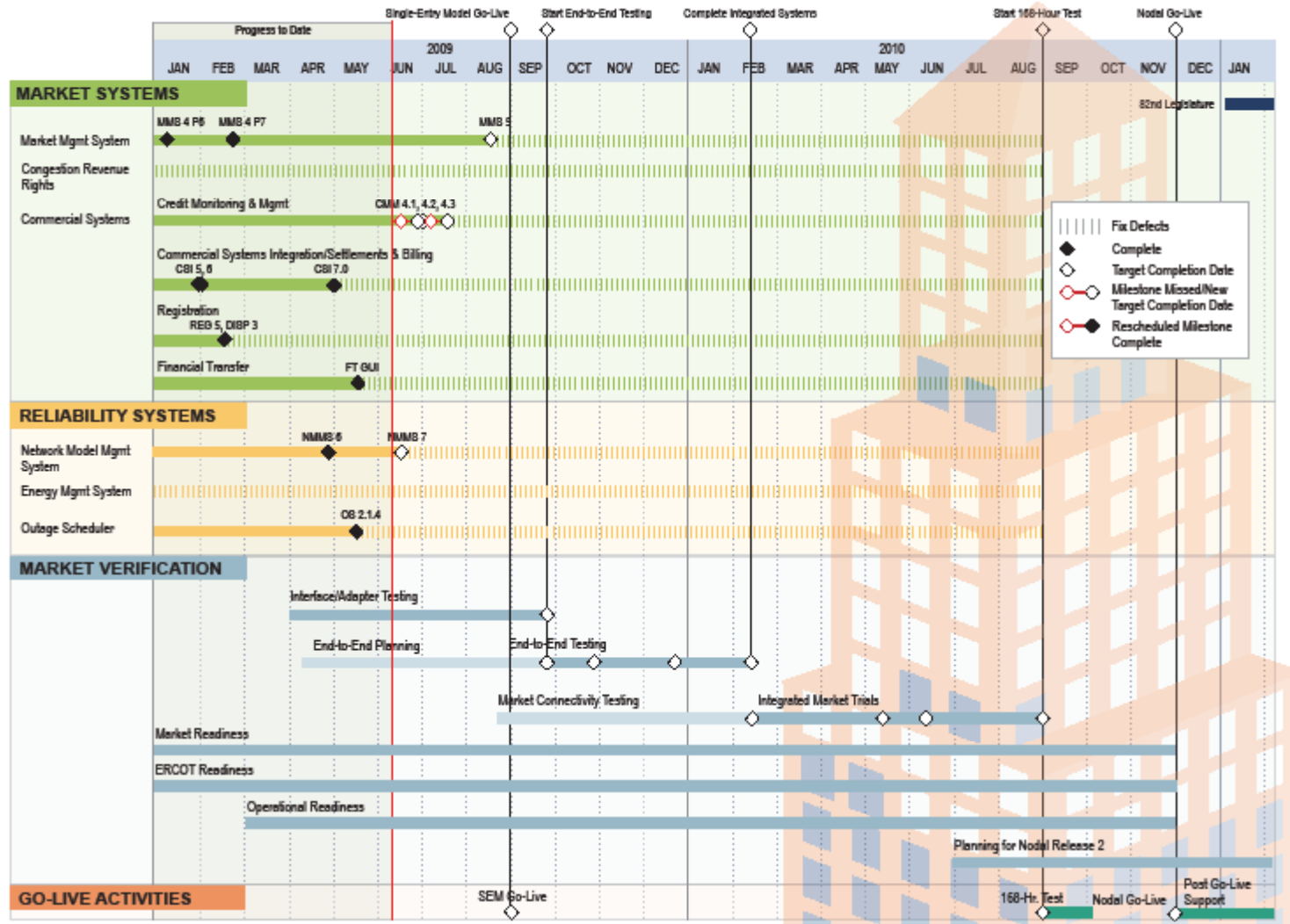
Mike Cleary

Sr. VP and Chief Technology Officer

Agenda

- **Timeline**
- **Milestones**
- **Risks/Issues**
- **People**
- **Program Initiatives**
- **Financials**

Timeline



Market Systems Update

Project	Sub-Project	Status	Remaining Releases
MMS		<ul style="list-style-type: none"> On schedule MMS 5 final release; currently in FAT and scheduled to exit Aug. 21 14 interfaces to test by Sept. 1; test planning underway MMS5 FAT: 0 sev1s, 0 sev2s, 80 high-priority sev 3s Market Manager UI to exit FAT July 16 	
CRR		<ul style="list-style-type: none"> On schedule CRR 1.9 final release; currently in FAT and scheduled to exit Aug. 31 3 of 9 interfaces in iTest, 2 in FAT, 4 in execution phase CRR 1.9 FAT: 0 sev 1s, 1 sev 2, 1 high-priority sev 3 	
COMS	CMM	<ul style="list-style-type: none"> Behind schedule CMM 4.1 in FAT; on schedule to exit June 30 CMM 4.2 scheduled to exit FAT June 30, CMM 4.3 July 10 4 of 5 interfaces currently in iTest 0 sev 1s, 151 sev2s, 46 sev 3s 	<ul style="list-style-type: none"> CMM 4.1 CMM 4.2 CMM 4.3
	S&B	<ul style="list-style-type: none"> Nearing completion; 7 of 8 interfaces currently in iTest 0 sev 1s, 3 sev 2s, 20 sev 3s 	
	CSI	<ul style="list-style-type: none"> Testing complete 0 sev 1s, 0 sev 2s, 29 sev 3s 	
	REG	<ul style="list-style-type: none"> Nearing completion All 3 interfaces currently in iTest; 96% of testing complete 0 sev 1s, 0 sev 2s, 1 sev 3 	

Reliability Systems Update

Project	Status	Remaining Releases
NMMS	<ul style="list-style-type: none"> • On schedule • NMMS 7 final release; currently in FAT and scheduled to exit June 16 • All 3 interfaces have exited FAT; 1 currently in iTest • NMMS 7 FAT: 0 sev 1s, 0 sev 2s, 83 sev 3's 	
EMS	<ul style="list-style-type: none"> • On schedule • 9 of 13 interfaces currently writing test plans • SPR Patch 3 scheduled to exit FAT June 23 • 0 sev 1s, 1 sev 2, 90 high-priority sev 3s (Patch 4 expected to address majority of defects) 	
OS	<ul style="list-style-type: none"> • On schedule • 5 of 7 interfaces currently in FAT; iTest scheduled to complete Sept. 15 • Final defect patch to be released at undetermined date • 2 defect patches planned for OS UI • OS 2.1.4 FAT: 0 sev 1s, 0 sev 2s, 3 high-priority sev 3s (excluding ROO defects) 	

Market Verification

Project	Status
Interface/Adapter Testing	<ul style="list-style-type: none">• Sev 1 defects have remained constant, but sev 2 and sev 3 defects on the rise• CMM accounting for most sev 2s• I&A team being restructured; more detailed status at July 9 TAC
End-to-End Testing	<ul style="list-style-type: none">• E2E testing scheduled to start in September
Market Trials	<ul style="list-style-type: none">• SEM Go-Live kickoff meeting held May 28; first training classes begin June 9• External testing opportunities with MMS 5 Q4 2009• Market Trials begins in February 2010
Operational Readiness	<ul style="list-style-type: none">• Schedule is being finalized

Milestones Performance

Tracking Milestones Planned					May 2009	
Proj	Name	%	Baseline	Forecast	Actual	Variance
MMS	ETAG to MMS iTest Test Execution Completed	0%	05/01/09	08/28/09	Delayed	83 days
NMMS	NMMS Interface Testing Complete	0%	05/04/09	07/13/09	Delayed	48 days
MMS	MMS UI Project End	0%	05/12/09	07/30/09	Delayed	55 days
COMS CMM	REG > CMM iTest Test Execution Completed	0%	05/12/09	06/08/09	Delayed	18 days
EIP	EWVS 1.18 Enhancements Completed	100%	05/14/09	05/21/09	05/21/09	5 days
COMS CMM	CMM - 4.2 Development Complete	100%	05/15/09	05/21/09	05/21/09	4 days
COMS REG	CMM-REG: (Creditworthy Status Update) Interface Test Complet	0%	05/15/09	06/16/09	Delayed	21 days
NMMS	Issue Modeling Guidelines Draft to Participants	100%	05/19/09	05/15/09	05/15/09	-2 days
EDS	Publish Draft Modeling Guidelines Document for MP Review	100%	05/19/09	05/15/09	05/15/09	-2 days
NMMS	Deliver NMMS 7 INT	0%	05/21/09	06/23/09	Delayed	22 days
EMS	EMS Release 6.6.x SPR Patch 3 FAT Complete	0%	05/22/09	06/23/09	Delayed	29 days
OS	Deliver OS Feature Pack 2 to iTest	100%	05/26/09	05/26/09	05/26/09	0 days
MMS	MMS5 Patch 1 Delivered by ABB	100%	05/29/09	05/29/09	05/29/09	0 days

- 6 of 13 tracking milestones for May completed

Tracking Milestones Planned					June 2009	
Proj	Name	%	Baseline	Forecast	Actual	Variance
Data	First Release of Common Data Set - DSV 1.0.0.0	100%	06/01/09	06/01/09	06/01/09	0 days
CRR	Final Updates to Transition Plan Complete	0%	06/01/09	06/16/09	NA	11 days
EMS	EMS 6.3.1.x FAT Complete	100%	06/02/09	05/04/09	05/04/09	-20 days
NMMS	Modeling Guidelines Complete	0%	06/05/09	06/16/09	NA	7 days
NMMS	Performance Testing of training Environment Complete	100%	06/04/09	06/04/09	06/04/09	0 days
NMMS	Start Training for MP's	0%	06/23/09	06/23/09	NA	0 days
OS	2.1.4.0 OS FAT Testing Complete	100%	06/15/09	05/14/09	05/14/09	-21 days
MIS	Dashboard Group 2 Portal Components Complete	0%	06/26/09	06/26/09	NA	0 days
COMS CMM	CMM 4.2 FAT Test Execution Complete	0%	06/24/09	06/30/09	NA	4 days
EIP	Integration Smoke Test of Adapters Complete	0%	06/19/09	06/19/09	NA	0 days
E2E	Framework Established & Communicated to Team	0%	06/29/09	06/29/09	NA	0 days
EDS	Publish MMS Validation Rules Document	100%	06/01/09	06/01/09	06/01/09	0 days
EDS	Complete Submission of Simple Cycle Greater than 90MW	0%	06/30/09	06/30/09	NA	0 days

- 13 tracking milestones scheduled for June

Milestone Variance Analysis

- **May Tracking Milestones**
 - MMS: ETAG to MMS iTest: originally omitted from schedule because of miscommunication about testing (already in Zonal); inserted to test with MMS5
 - NMMS: “Interface Testing Complete” Milestone: dependent on NMMS6 delivery to NiTest (delayed due to SV2 defects & resource constraints)
 - MMS UI Project End: defects were found, patch retracted & new technical platform implemented
 - COMS CMM: REG - CMM iTest: EIP smoke testing taking longer than expected in NiTest
 - NMMS-NMMS 7 INT: delayed into FAT by NMMS 6 being in FAT; other projects not dependent ... functionality for use by NMMS team
 - EMS Release 6.6.x Patch 3 FAT: delays due to vendor resource constraints for same people needed on release 6.5

Risks & Issues to Achieving EERM's Major Milestones

- ◆ **Complete Integrated Systems (2-12-10)**
 - Issue: Resource constraints for program
 - Issue: Handling CMM delays for program

- ◆ **Market Trials (2-12-10)**
 - Risk: Reconciling protocols, systems and market expectations

- ◆ **Nodal Go-Live (12-1-10)**
 - Risk: Data Center capacity concerns
 - Risk: Integrity of SEM data provided by Market Participants

ERCOT-Wide Issue: Zonal Resource Constraints for EERM Program

◇ Potential Milestone Impact: Complete Integrated Systems

Issue: Zonal Resource Constraints for EERM Program		Because the go-live date has been delayed, there are a number of Zonal projects, PRRs, and IMM suggestions for Zonal improvements that result in resource constraints for the EERM Program.		
Issue Life Cycle State				
Plan	Manage			
Mitigation Plans		Who	Target Date	Current Status
1. Manage list of PRRs and SCRs to a resource plan that uses a strategy to avoid impacting program personnel resources when delivering additional Zonal enhancements.		D. Forfia D. Troxtell	Ongoing	5/15/09 – Meetings were held, to review EACs with Mike Cleary and Janet Ply, with updates made 4/24/09 – Meetings of PM with Program Office and with Resource Managers set for week of 4/27/09, to address personnel allocations
2. Manage Project Priority List (PPL) with clear view of resources needed for any projects in flight or about to be launched, with a strategy to avoid impact on Nodal personnel resources.		D. Forfia D. Troxtell	5/29/09 for solution to be used for resource monitoring	5/29/09 – Prototype solution completed, and resource over-allocations identified for PM and Resource Manager resolution. Work in progress to resolve those over-allocations. Progress review with Executive Team on 6/1 5/22/09 – Nodal and ERCOT PMOs reviewed progress and plans

EERM Program Issue: Handling CMM Delays for EERM Program

◇ Potential Milestone Impact: Complete Integrated Systems

Issue: Handling CMM Delays		Delays in completing the detailed requirements and designs for CMM have occurred because of turnover in both ERCOT and vendor staff. There are limited business resources allocated to complete creation of requirements and to perform reviews.		
Issue Life Cycle State				
Plan	Manage			
Mitigation Plans		Who	Target Date	Current Status
1. Break the definition and development of remaining CMM capability into incremental releases. Modify contract with vendor to fit the approach.		H. Parrish	Contract revisions in process	6/5/09 SOW for new contract drafted and reviewed, but not yet signed, as discussions of quality of work continue
2. Identify ERCOT business resources to ensure the plan can be executed.		H. Parrish		6/5/09 2 backfill positions filled 4/17/09 2 additional Credit FTE resources are participating in testing. Business to have at least 2 backfill.
3. Identify vendor resources to ensure the plan can be executed.		H. Parrish	As needed	5/7/09 ERCOT on site at TriplePoint, providing PM oversight and 2 testers for pre-FAT
4. Receive software and perform FAT in increments, to keep overall program on schedule.		H. Parrish	7/08/09	5/15/09 Deliveries of software scheduled from through 5/26/09, with testing incrementally to 7/17/09

EERM Program Risk: Reconciling Protocols, Systems and Market Expectations

◇ Potential Milestone Impact: Market Trials

Risk: Reconciling Protocols, Systems and Market Expectations				Experience with deploying nodal markets by other ISOs has shown that expectations of the market participants are often missed, despite best efforts at defining tariffs or protocol requirements. ERCOT needs to assume such a risk exists for this nodal implementation as well.		
Risk Life Cycle State						
Define	Plan	Manage	Watch			
Mitigation Plans				Who	Target Date	Current Status
1. Assess maturity and readiness of software in the initial nodal release, focusing on new/tailored capability for the EERM Program.				Nodal Project Managers	7/1/09	4/13/09 Program is planning the assessment activities.
2. Add team members to the program with Texas market experience to ensure readiness for Market Trials. Have them assess completeness of requirements addressed by the software new/tailored for the Texas market and participate in end-to-end testing.				J. Ply	8/1/09	6/1/09 Both members now on board and working on tracing and delta analysis under Betty Day's leadership with recent program restructuring.
3. Keep the oversight groups apprised of progress.				M. Cleary	Ongoing	4/13/09 Risk incorporated into the set being reported externally; will be maintained actively.

ERCOT-Wide Risk: Data Center Capacity Concerns

◇ Potential Milestone Impact: EERM Go-Live

Risk: Data Center Capacity Space Concerns				Data center capacity, space, and power may be inadequate for EERM go-live, unless plans for expansion are adequate.		
Risk Life Cycle State						
Define	Plan	Manage	Watch			
Mitigation Plans				Who	Target Date	Current Status
1. Establish an Information Lifecycle Management approach, to manage the life cycle of data being managed.				D. Forfia	Implementation ongoing	3/31/09 ILM Roadmap has been completed by SAIC, and next planning activities underway ERCOT project PR 90006_01 Commercial Systems Information Lifecycle Management: Project
2. Expand current data center space, and build out new data center, to increase ERCOT data center capacity.				D. Forfia	TCC1 build out complete 9/09 South DC in production Feb 2011 TCC3 in production May 2011	3/30/09 Work underway to expand current TCC1 data center ERCOT project PR_80047 TCC1 equipment to be purchased May 2009. ERCOT project PR_80001 South DC will run parallel Oct 2010 – Feb 2011 to test and avoid disruption to Nodal
3. Validate and monitor EERM data capacity assumptions for Go Live				D. Forfia	Plan: May 2009 Analysis: to complete 7/15/09	5/11/09 Plan under review by D. Forfia

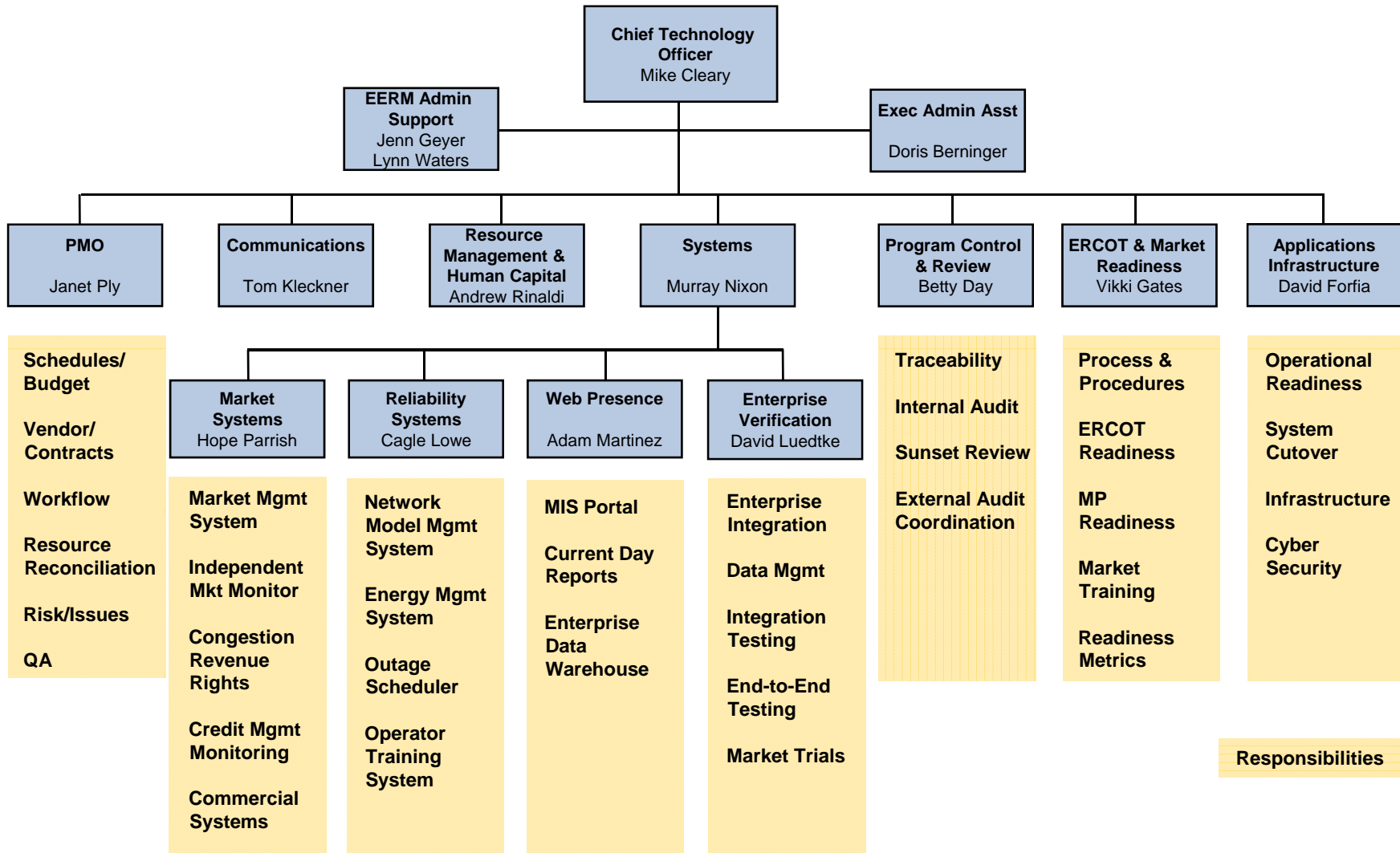
Program Risk

Integrity of SEM Data Provided by Market Participants

◇ Potential Milestone Impact: EERM Go-Live

Risk: Quality of Model Data from Market is insufficient				The market participants do not populate the SEM with data and we do not have a quality network model for Go-Live.		
Risk Life Cycle State						
Define	Plan	Manage	Watch			
Mitigation Plans				Who	Target Date	Current Status
Participant Readiness will plan and implement an initiative to assist the MPs in entering their data and to ensure the best quality possible for the network model at Go-Live.				V. Gates	TBD	Planning is underway.

People: EERM Leadership



People: New Additions to EERM

Contract Staff

Vikki Gates/Readiness & Transformation PM

- 12 years experience in energy/utility sector
- ERCOT, MISO, PG&E, Entergy
- Market-rules development (ERCOT, SERC), translating rules into system design specs

David Luedtke, Verification PM

- 13 years utility and energy consulting experience
- MISO, ESB National Grid, Southwest Power Pool, ERCOT, Constellation
- Led system-cutover team for MISO ASM and led planning/execution of MISO market trials

Bob Spangler, Project Control & Review Industry SME

- 20 years experience in regulatory/energy/nuclear sectors
- Luminant Energy, Johnson Controls, US Nuclear Regulatory Commission
- Protocol/design development of Nodal Program; develop ERCOT/MP consensus on protocols/designs

Floyd Trefny, Project Control & Review Industry SME

- 38 years experience in power systems operations, wholesale and retail power markets
- Reliant Energy, Houston Lighting & Power
- Primary contributor to the drafting process and key player in training for Texas Nodal Market Protocols

Jeff Fruit, Vendor Relations Lead

- 20 years experience in energy and trading; extensive ISO/RTO experience
- Southwest Power Pool, CAISO, MISO, Henwood Energy Services
- Managed/validated Areva's delivery schedule; key player in launch of MISO's \$25B market

Harry Nelson, Enterprise Integration Lead

- 29 years IT, energy experience
- MISO, Maxcess, ATT, AMS
- MISO PM analyzing, planning, designing infrastructure/integration components for \$70M program

ERCOT Staff

John Adams/Readiness & Transition

- Director, Grid Operations
- 13 years ERCOT, 30 industry

Betty Day/Program Control & Review

- Director, Markets
- 9 years ERCOT, 23 industry

Cagle Lowe/Reliability Systems PM

- Manager, Divisional Project Office
- 13 years ERCOT, 28 industry

Matt Mereness/Market Readiness

- Supv, Market Operations Support
- 6 years ERCOT, 18 industry

Sanjay Mijar/Integration Testing

- Senior Enterprise Architect
- 2 years ERCOT, 14 industry

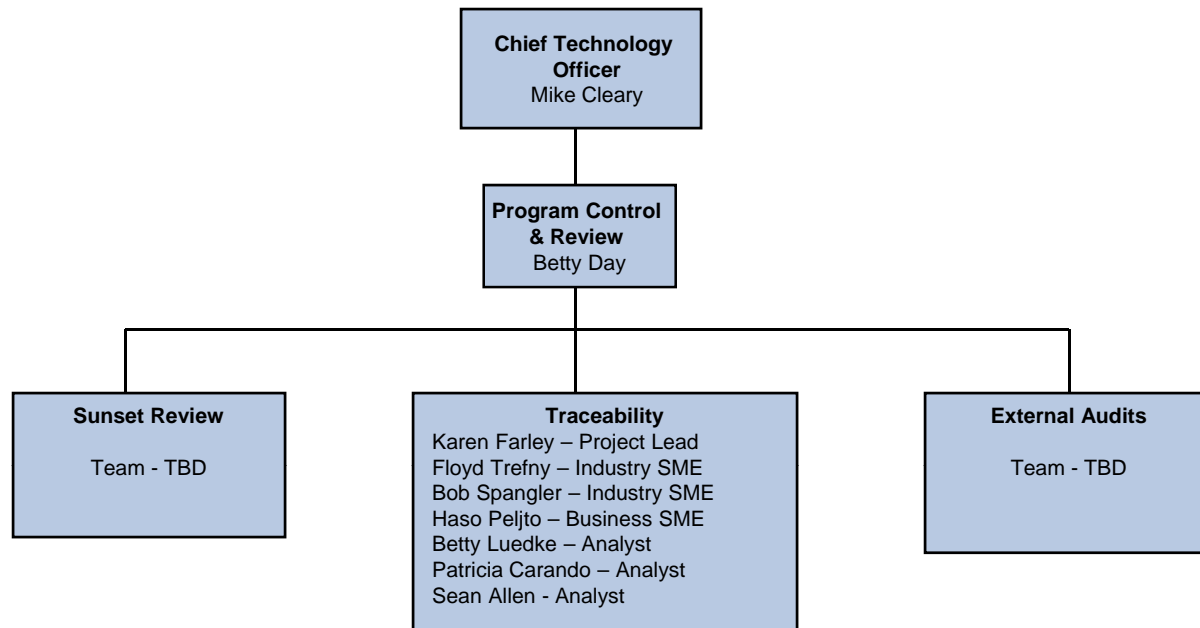
Hope Parrish/Market Systems PM

- Manager, Market Operations DPO
- 7 years ERCOT, 11 project management

Kenneth Ragsdale/Data Management




- Manager, Market Redesign
- 9 years ERCOT, 25 industry

Program Control & Review



- **Project Control and Review**
 - Nodal “Internal Audit” Team
 - Address issues within project teams
 - Manage third-party reviews
 - Current efforts
 - Traceability
 - Sunset Review

- **Traceability Effort**

- Protocols  Requirements & Business Processes
 - Assess protocols as written and market expectations
 - Develop plans to address gaps
- Requirements  Test Plans/Cases/Scripts  Test Results
 - Prove protocols have been met through test results
 - Provides “auditability”

- **Current Traceability Status**

- Evaluating Protocol Sections 3-9, 16
 - Initial focus on systems from external vendors to quickly identify if any gaps exist
- Status report to July 9 TAC meeting

Program Initiatives

- **Vendor Contract Re-Negotiations**
 - To better manage costs, schedule and emergency situations
 - Vendor resource and workflow management
 - Rates/costs
 - Warranties
 - Obtain non-core vendor code
 - Goal: Re-negotiate existing contracts by June 30, negotiate new maintenance contracts thereafter
 - Current status:
 - Currently restructuring largest contract and secondary vendor
 - In negotiations with other three vendors
 - Options include placing ERCOT personnel on site
- **Resource Management**
 - Continuously evaluating resources to ensure quality personnel
 - Looking for opportunities to transition and train ERCOT staff
- **Third-Party External Review**
 - Board request for external audit
 - RFP currently in process
- **Other Issues We're Tracking**
 - Continuing emphasis on effective communication with Texas Legislature
 - Continuing emphasis on media responses to project milestones



Monthly Financial Review

Steve Byone

Monthly Financial Review - May 2009 Performance

ERCOT Enhanced Reliability and Markets Approved Budget to Actual Comparison Month of May 2009

Line	Cost Summary	Budget	Actual	Variance	Cumulative Variance* (Pending Contingency Mgmt Disposition)
1	Internal Labor Costs	\$ 2.1	\$ 1.8	\$ 0.3	\$ 3.4
2	Backfill Labor Costs	0.1	0.2	-0.1	-0.2
3	External Resource Costs	5.9	4.5	1.4	8.5
4	Software & Software Maintenance	0.2	0.3	-0.1	-0.6
5	Hardware & Hardware Maintenance	0.3	0.1	0.2	1.8
6	Sub-total Direct Project Costs	\$ 8.6	\$ 6.9	\$ 1.7	\$ 12.9
7	Contingency Costs	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0
8	Allocations & Other	\$ 0.6	\$ 0.3	\$ 0.3	\$ 2.0
9	Finance Charges	1.3	1.0	0.3	1.0
10	Sub-total Indirect Project Costs	\$ 1.9	\$ 1.3	\$ 0.6	\$ 3.0
11					
12	Total	\$ 10.5	\$ 8.2	\$ 2.3	\$ 15.9

Amounts in millions



Monthly Financial Review - LTD Performance through May 2009

ERCOT Enhanced Reliability and Markets Approved Budget to Actual Comparison Life-to-Date through May 2009

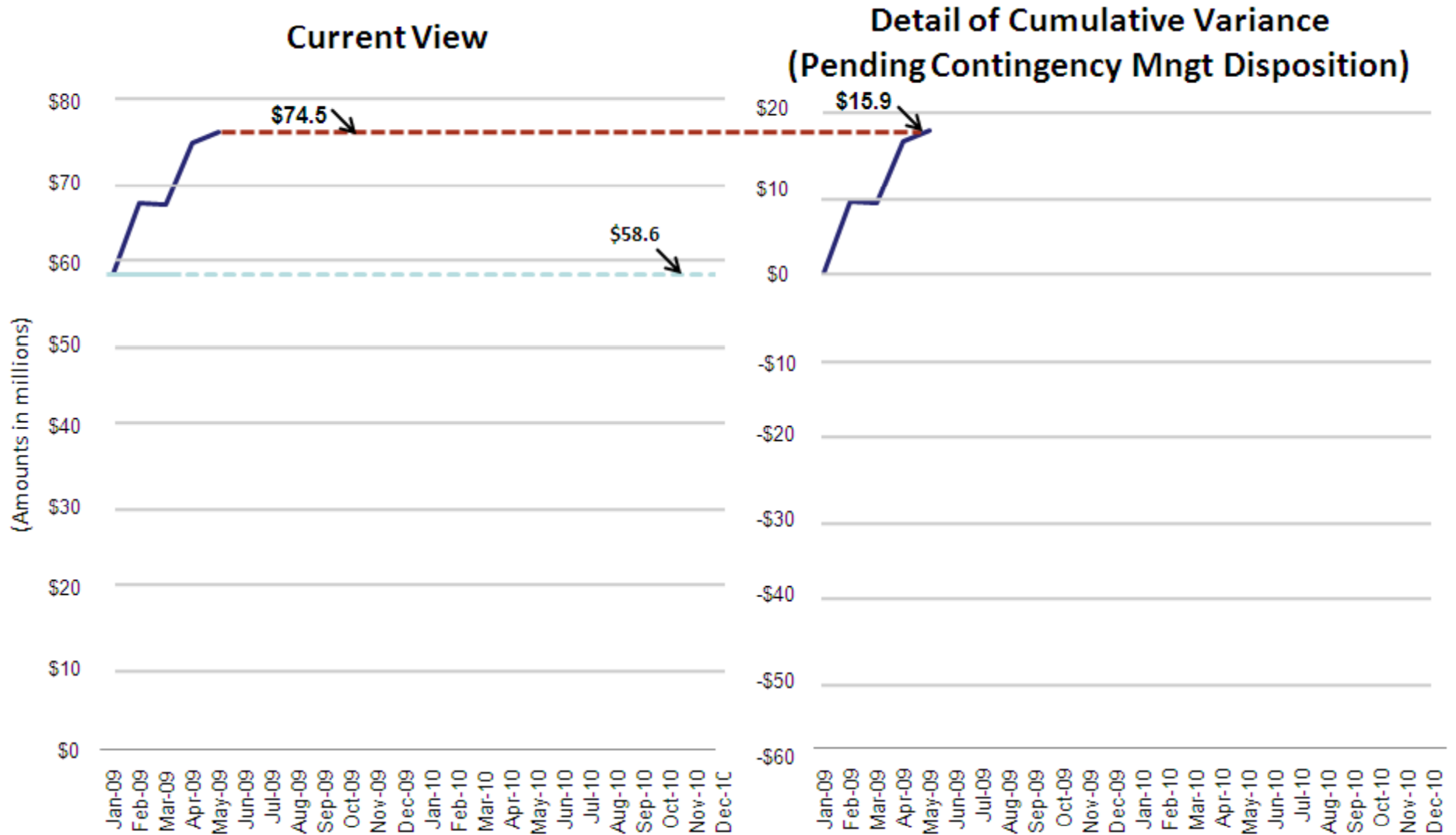
Line	Cost Summary	Budget	Actual	Cumulative Variance + (Pending Contingency Mgmt Disposition)	Budget Remaining
1	Internal Labor Costs	\$ 44.7	\$ 41.3	\$ 3.4	\$ 41.5
2	Backfill Labor Costs	4.3	4.5	-0.2	4.2
3	External Resource Costs	232.9	224.4	8.5	59.6
4	Software & Software Maintenance	24.2	24.8	-0.6	12.9
5	Hardware & Hardware Maintenance	48.9	47.1	1.8	5.5
6	Sub-total Direct Project Costs	\$ 355.0	\$ 342.1	\$ 12.9	\$ 123.7
7	Contingency Costs	\$ 0.0	\$ 0.0	\$ 0.0	\$ 58.6
8	Allocations & Other	\$ 21.3	\$ 19.3	\$ 2.0	\$ 7.5
9	Finance Charges	18.8	17.8	1.0	58.9
10	Sub-total Indirect Project Costs	\$ 40.1	\$ 37.1	\$ 3.0	\$ 66.4
11					
12	Total	\$ 395.1	\$ 379.2	\$ 15.9	\$ 248.7

Amounts in millions

\$643.8

* Note: Effective with February 17, 2009 approved budget, LTD budgeted spend set to actual spend through December 31, 2008; accordingly, cumulative variance "reset" as of January 1, 2009.

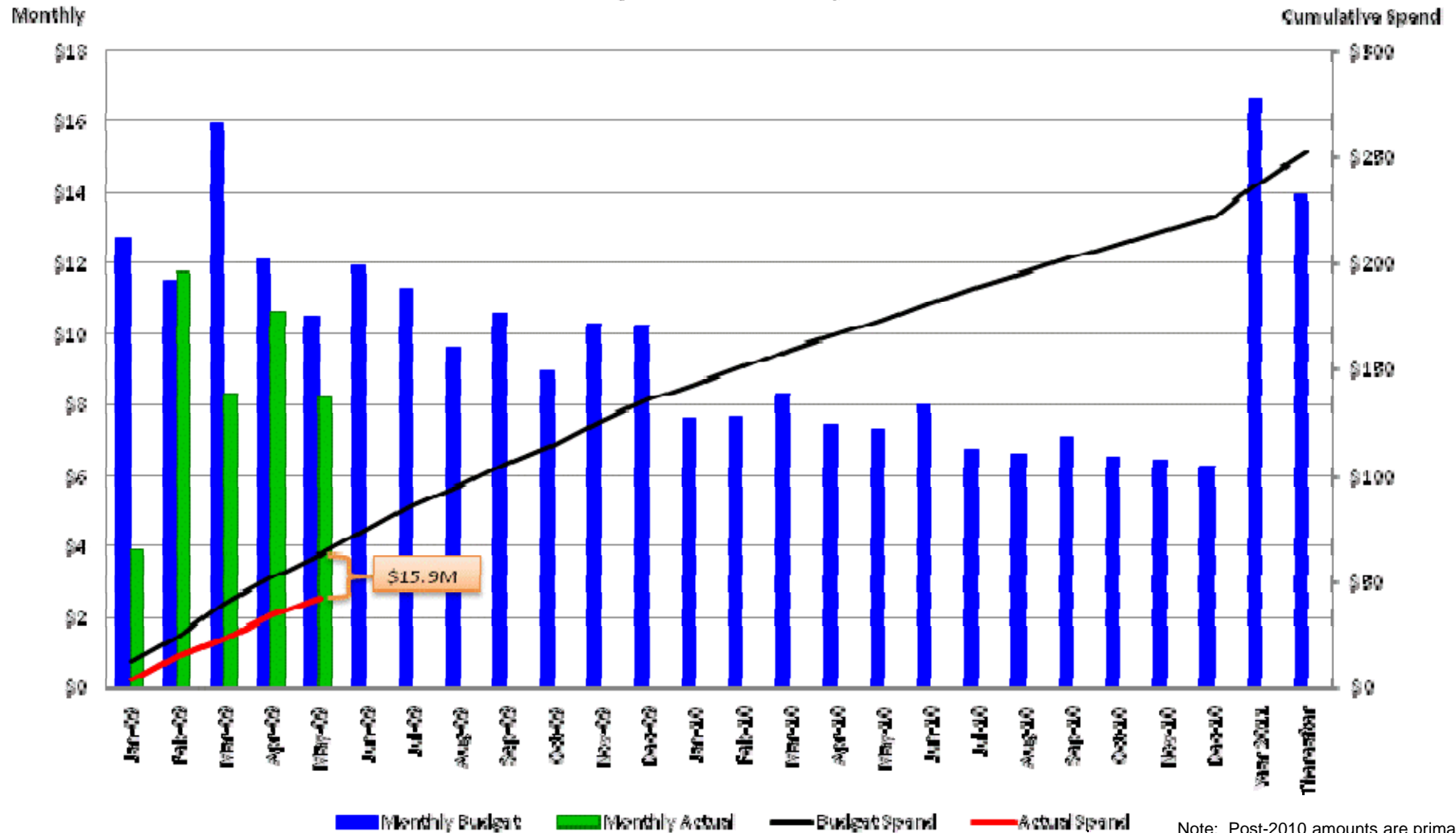
Monthly Financial Review – Contingency Monitoring



Monthly Financial Review - Program Cost Management

Monthly Budget to Actual Variance

(Amounts in millions)



Note: Post-2010 amounts are primarily additional debt service costs

Questions ?