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Appendix I:

Consolidated Detailed MS Project Specification for RTO West
Program Implementation

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Program Implementation Plan for RTO West

ID	Task Name	Duration	Start	Finish	2002				2003				2004				2005				2006	
					Q1	Q2	Q3	Q4	Q1	Q2												
31	Update Program Masterplan	32 days	Mon 4/15/02	Tue 5/28/02																		
32	Revalidate Existing Plans	10 days	Mon 4/15/02	Fri 4/26/02																		
33	Detail Out All Steps	22 days	Mon 4/29/02	Tue 5/28/02																		
34	Prepare Development Budget	22 days	Mon 4/15/02	Tue 5/14/02																		
35	Approve Plan and Budget	5 days	Wed 5/29/02	Tue 6/4/02																		
36	Design Program Team Work Structure	5 days	Mon 4/15/02	Fri 4/19/02																		
37	Mobilize Program	32 days	Wed 6/5/02	Thu 7/18/02																		
38	Obtain and Deploy All Resources	22 days	Wed 6/5/02	Thu 7/4/02																		
39	Implement Management Processes	22 days	Wed 6/5/02	Thu 7/4/02																		
40	Establish Program Management Office	22 days	Wed 6/5/02	Thu 7/4/02																		
41	Implement Program Team Work Structure	22 days	Wed 6/5/02	Thu 7/4/02																		
42	Establish Orientation and Training	22 days	Wed 6/5/02	Thu 7/4/02																		
43	Locate and Occupy Temporary Work Site	32 days	Wed 6/5/02	Thu 7/18/02																		
44	Select Temporary Work Site	5 days	Wed 6/5/02	Tue 6/11/02																		
45	Sign Leases	5 days	Wed 6/12/02	Tue 6/18/02																		
46	Start Using Temporary Work Site	22 days	Wed 6/19/02	Thu 7/18/02																		
47	Install PCs, Local LAN and Servers, Internet Access, Security Monitoring	22 days	Wed 6/19/02	Thu 7/18/02																		
48	Manage and Improve Program	900 days	Mon 8/12/02	Wed 1/18/06																		
49	Direct Program	900 days	Mon 8/12/02	Wed 1/18/06																		
50	Execute Management Processes	900 days	Mon 8/12/02	Wed 1/18/06																		
51	Execute Interim Finance and Budget Process	900 days	Mon 8/12/02	Wed 1/18/06																		
52	Analyze Program Performance	900 days	Mon 8/12/02	Wed 1/18/06																		
53	Plan and Impement Program Improvements	900 days	Mon 8/12/02	Wed 1/18/06																		
54	Operate Program Management Office	900 days	Mon 8/12/02	Wed 1/18/06																		
55	Authorize, Build and Test	900 days	Mon 8/12/02	Wed 1/18/06																		
56	Authorize Deployment	900 days	Mon 8/12/02	Wed 1/18/06																		
57	Operate Team Work Environment	900 days	Mon 8/12/02	Wed 1/18/06																		
58	Financial/Business	963 days	Wed 5/1/02	Wed 1/4/06																		
59	Business and Financial Planning	66 days	Wed 5/1/02	Wed 7/31/02																		
60	Conceptual Business Model/Plan	66 days	Wed 5/1/02	Wed 7/31/02																		

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Program Implementation Plan for RTO West

ID	Task Name	Duration	Start	Finish	2002				2003				2004				2005				2006	
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
223	Sign NEPA Record of Decision (ROD)	0 days	Tue 4/22/03	Tue 4/22/03								★ 4/22										
224	Administrative Record of Decision	102 days	Mon 12/2/02	Mon 4/21/03																		
225	Post for Comment	1 day	Mon 12/2/02	Mon 12/2/02																		
226	Incorporate Changes	1 day	Tue 12/3/02	Tue 12/3/02																		
227	Sign ROD	1 day	Mon 4/21/03	Mon 4/21/03																		
228	Provide Information to Northwest Delegation Consensus	994 days	Mon 4/1/02	Tue 1/17/06																		
229	Ongoing Updates	906 days	Thu 8/1/02	Tue 1/17/06																		
230	Informal Hearings	0 days	Mon 4/1/02	Mon 4/1/02					★ 4/1													
231	BC Hydro Approval	0 days	Mon 11/3/03	Mon 11/3/03																		
232	Provincial Approval of BC Hydro Participation	0 days	Mon 11/3/03	Mon 11/3/03																		
233	Internal Revenue Service	641 days	Mon 4/1/02	Thu 9/9/04																		
234	Determine IRS Filing Requirements	22 days	Mon 4/1/02	Tue 4/30/02																		
235	Submit IRS Filing	0 days	Tue 3/9/04	Tue 3/9/04																		
236	Anticipated Decision Date	0 days	Thu 9/9/04	Thu 9/9/04																		
237	Other Legal Agreements	438 days	Mon 4/15/02	Mon 12/15/03																		
238	Employee Agreements and Non Disclosure	10 days	Mon 4/15/02	Fri 4/26/02																		
239	Software Development Contract Development	44 days	Mon 4/15/02	Thu 6/13/02																		
240	Lease Agreements for AGC Connectivity	66 days	Tue 7/2/02	Mon 9/30/02																		
241	Data and Document Disclosure Agreements (NDC)	10 days	Mon 4/15/02	Fri 4/26/02																		
242	Document Access Policy	44 days	Wed 10/15/03	Mon 12/15/03																		
243	Operations	972 days	Wed 5/1/02	Tue 1/17/06																		
244	As Is Infrastructure Review/Interface Requirements Definition	132 days	Wed 5/1/02	Wed 10/30/02																		
245	Assess and Develop Requirements	66 days	Tue 6/3/03	Tue 9/2/03																		
246	Select Alternative Development Options	10 days	Wed 9/3/03	Tue 9/16/03																		
247	Develop RFP Shell(s)	22 days	Wed 9/17/03	Thu 10/16/03																		
248	Seams Dependent Infrastructure Development	355 days	Mon 1/5/04	Mon 5/16/05																		
249	Complete Specifications	10 days	Mon 1/5/04	Mon 1/19/04																		
250	Complete Seams Commitments on Scheduling Practices and Data Standards	0 days	Mon 1/5/04	Mon 1/5/04																		
251	Complete Technical Specifications	10 days	Tue 1/6/04	Mon 1/19/04																		
252	Select Vendor	169 days	Mon 1/19/04	Fri 9/10/04																		

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ID	Task Name	Duration	Start	Finish	2002				2003				2004				2005				2006	
					Q1	Q2	Q3	Q4	Q1	Q2												
558	Employee Record Maintenance	22 days	Tue 6/17/03	Wed 7/16/03																		
559	Compensation	22 days	Tue 6/17/03	Wed 7/16/03																		
560	Governance Implementation	441 days	Mon 12/2/02	Fri 8/6/04																		
561	Board of Directors	228 days	Mon 12/2/02	Tue 10/14/03																		
562	Staffing Support For Board Processes	22 days	Mon 12/2/02	Tue 12/31/02																		
563	Market Participants Form Voting Groups	44 days	Mon 12/2/02	Thu 1/30/03																		
564	Prepare for Elections to Trustee Selection Committee (TSC)	22 days	Mon 12/2/02	Tue 12/31/02																		
565	Hold Elections for TSC	1 day	Mon 3/3/03	Mon 3/3/03																		
566	Resolve Any Dispute Regarding Elections for TSC	22 days	Tue 3/4/03	Wed 4/2/03																		
567	Hire Search Firm	22 days	Tue 3/4/03	Wed 4/2/03																		
568	Locate and Present List of Board Candidates	66 days	Thu 4/3/03	Thu 7/3/03																		
569	Board Interviews	44 days	Fri 7/4/03	Wed 9/3/03																		
570	Hold Elections for Board Candidates	22 days	Fri 7/4/03	Mon 8/4/03																		
571	Resolve Any Disputes; Resolve and Prepare for Code of Conduct Compliance	22 days	Tue 8/5/03	Wed 9/3/03																		
572	Offers Made	22 days	Thu 9/4/03	Fri 10/3/03																		
573	Obtain D&O insurance for Board members	7 days	Thu 9/4/03	Fri 9/12/03																		
574	Board Assembled	22 days	Mon 9/15/03	Tue 10/14/03																		
575	CEO	242 days	Thu 4/3/03	Fri 3/5/04																		
576	Prepare and Present List of CEO Candidates	132 days	Thu 4/3/03	Fri 10/3/03																		
577	Interview Candidates	66 days	Mon 10/6/03	Mon 1/5/04																		
578	Make Offers and Negotiate	22 days	Thu 2/5/04	Fri 3/5/04																		
579	CEO Start Date	0 days	Fri 3/5/04	Fri 3/5/04																		
580	Officers	352 days	Thu 4/3/03	Fri 8/6/04																		
581	Prepare and Present List of Officers Candidates	132 days	Thu 4/3/03	Fri 10/3/03																		
582	Interview Candidates	66 days	Mon 3/8/04	Mon 6/7/04																		
583	Make Offers and Negotiate	44 days	Tue 6/8/04	Fri 8/6/04																		
584	Officers Hiring Completion	0 days	Fri 8/6/04	Fri 8/6/04																		
585	Stakeholder Process	526 days	Tue 4/30/02	Mon 5/3/04																		
586	Continue Existing Processes	526 days	Wed 5/1/02	Mon 5/3/04																		
587	Complete Mar 21, 2002 Filing to FERC	21 days	Wed 5/1/02	Wed 5/29/02																		

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Program Implementation Plan for RTO West

ID	Task Name	Duration	Start	Finish	2002				2003				2004				2005				2006		
					Q1	Q2	Q3	Q4	Q1	Q2													
588	Continue Seams Working Groups	526 days	Wed 5/1/02	Mon 5/3/04																			
589	Decide Funding Level for SSG-WI	1 day	Wed 5/1/02	Wed 5/1/02																			
590	Decide Who Files SSG-WI Work Product with FERC	1 day	Wed 5/1/02	Wed 5/1/02																			
591	Decide Types of Filings for SSG-WI Work Product	526 days	Wed 5/1/02	Mon 5/3/04																			
592	Scheduling/OASIS	526 days	Wed 5/1/02	Mon 5/3/04																			
593	Committee Recommendation to RTOs	350 days	Wed 5/1/02	Fri 8/29/03																			
594	RTO Board Decisions: Accept or Reject	22 days	Mon 9/1/03	Tue 9/30/03																			
595	Develop and Submit to FERC	44 days	Wed 10/1/03	Mon 12/1/03																			
596	Anticipated FERC Approval (Subject to RTO Change/Acceptance)	0 days	Fri 1/30/04	Fri 1/30/04																			
597	Rehearing/Clarification	66 days	Mon 2/2/04	Mon 5/3/04																			
598	Phase Shifters	373 days	Wed 5/1/02	Wed 10/1/03																			
599	Committee Recommendation to RTOs	197 days	Wed 5/1/02	Wed 1/29/03																			
600	RTO Board Decisions: Accept or Reject	22 days	Thu 1/30/03	Fri 2/28/03																			
601	Develop and Submit to FERC	44 days	Sat 3/1/03	Wed 4/30/03																			
602	Anticipated FERC Approval (Subject to RTO Change/Acceptance)	0 days	Tue 7/1/03	Tue 7/1/03																			
603	Rehearing/Clarification	66 days	Wed 7/2/03	Wed 10/1/03																			
604	Transmission Planning	373 days	Wed 5/1/02	Wed 10/1/03																			
605	Committee Recommendation to RTOs	197 days	Wed 5/1/02	Wed 1/29/03																			
606	RTO Board Decisions: Accept or Reject	22 days	Thu 1/30/03	Fri 2/28/03																			
607	Develop and Submit to FERC	44 days	Sat 3/1/03	Wed 4/30/03																			
608	Anticipated FERC Approval (Subject to RTO Change/Acceptance)	0 days	Tue 7/1/03	Tue 7/1/03																			
609	Rehearing/Clarification	66 days	Wed 7/2/03	Wed 10/1/03																			
610	Congestion	373 days	Wed 5/1/02	Wed 10/1/03																			
611	Committee Recommendation to RTOs	197 days	Wed 5/1/02	Wed 1/29/03																			
612	RTO Board Decisions: Accept or Reject	22 days	Thu 1/30/03	Fri 2/28/03																			
613	Develop and Submit to FERC	44 days	Sat 3/1/03	Wed 4/30/03																			
614	Anticipated FERC Approval (Subject to RTO Change/Acceptance)	0 days	Tue 7/1/03	Tue 7/1/03																			
615	Rehearing/Clarification	66 days	Wed 7/2/03	Wed 10/1/03																			
616	Market Monitoring	373 days	Wed 5/1/02	Wed 10/1/03																			
617	Committee Recommendation to RTOs	197 days	Wed 5/1/02	Wed 1/29/03																			

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ID	Task Name	Duration	Start	Finish	2002				2003				2004				2005				2006	
					Q1	Q2	Q3	Q4	Q1	Q2												
618	RTO Board Decisions: Accept or Reject	22 days	Thu 1/30/03	Fri 2/28/03																		
619	Develop and Submit to FERC	44 days	Sat 3/1/03	Wed 4/30/03																		
620	Anticipated FERC Approval (Subject to RTO Change/Acceptance)	0 days	Tue 7/1/03	Tue 7/1/03																		
621	Rehearing/Clarification	66 days	Wed 7/2/03	Wed 10/1/03																		
622	Price Reciprocity	373 days	Wed 5/1/02	Wed 10/1/03																		
623	Committee Recommendation to RTOs	197 days	Wed 5/1/02	Wed 1/29/03																		
624	RTO Board Decisions: Accept or Reject	22 days	Thu 1/30/03	Fri 2/28/03																		
625	Develop and Submit to FERC	44 days	Sat 3/1/03	Wed 4/30/03																		
626	Anticipated FERC Approval (Subject to RTO Change/Acceptance)	0 days	Tue 7/1/03	Tue 7/1/03																		
627	Rehearing/Clarification	66 days	Wed 7/2/03	Wed 10/1/03																		
628	Respond to FERC Orders re: Mar 1 and Mar 21 filings	90 days	Wed 5/1/02	Mon 9/2/02																		
629	Create Formal Advisory Board Reporting to Governing Board	265 days	Tue 4/30/02	Fri 5/2/03																		
630	Vote Board Members	0 days	Tue 4/30/02	Tue 4/30/02																		
631	Seat Board	0 days	Wed 4/2/03	Wed 4/2/03																		
632	Migrate Existing Processes to Advisory Board Oversight	22 days	Thu 4/3/03	Fri 5/2/03																		
633	Phase Out Existing Processes	32 days	Tue 4/30/02	Thu 6/13/02																		
634	Dissolve Working Groups As Tasks End	0 days	Tue 4/30/02	Tue 4/30/02																		
635	Reorganize Working Groups to Fit Advisory Board Design	22 days	Wed 5/1/02	Thu 5/30/02																		
636	Transfer Filing Responsibilities to RTO West Legal Counsel	10 days	Fri 5/31/02	Thu 6/13/02																		
637	Integrate Advisory Board with Governance System	22 days	Wed 5/1/02	Thu 5/30/02																		
638	Formalize Processes and Procedures with RTO West Governing Board	22 days	Wed 5/1/02	Thu 5/30/02																		
639	Formalize Rules Process and How Advisory Board Is Involved	22 days	Wed 5/1/02	Thu 5/30/02																		
640	Facilities	230 days	Fri 11/21/03	Thu 10/7/04																		
641	Develop Facilities Requirements	22 days	Fri 11/21/03	Mon 12/22/03																		
642	Real Estate Search	22 days	Tue 12/23/03	Wed 1/21/04																		
643	Assess and Select Options	10 days	Thu 1/22/04	Wed 2/4/04																		
644	Negotiate and Sign Contracts	22 days	Thu 2/5/04	Fri 3/5/04																		
645	Build-out Permanent Facilities	132 days	Mon 3/8/04	Tue 9/7/04																		
646	Main Facility	132 days	Mon 3/8/04	Tue 9/7/04																		
647	Backup Facility	132 days	Mon 3/8/04	Tue 9/7/04																		

Appendix II:

Definition of Terms Critical to the Program Implementation Plan

There are several terms central to understanding the composition of the Plan. They also help to distinguish what can be expected of the current scope of the Plan and what additional steps will be required before the Plan can be effectively managed as it is implemented.

1. Definition of Program Implementation Plan

The *Program Implementation Plan* is the general outline of all main tasks required to start-up an RTO. It typically covers three or four levels of task detail sufficient to develop a general cost estimate. It provides detail on schedule duration, critical path milestones and includes enough information to analyze the effects of changes in the scope of tasks. Cost analysis at a general level is part of the Program Plan – allowing for evaluation of various changes in level of effort, availability of resources, and constraints on costs.

2. Definition of Master Plan

A *Master Plan* would be the core management tool for building the RTO. A Master Plan is a Program Implementation Plan detailed to every step required in order to build and start-up an RTO. It incorporates all project plans from vendors as well as for specific projects within the overall program. It incorporates project and program completion punch lists as well as assurance that all certifications, warranties and guarantees are completed, properly executed, and valid. The Master Plan includes detailed budgets for the entire scope of work, for specific projects, and where necessary and/or appropriate for specific tasks.

3. Definitions of Start Up

For purposes of this Plan the term *start-up* is used in the following ways.

- The Program Implementation Plan is a plan to convert the RTO West market design into an operating enterprise. In this sense, the Plan is a *start-up plan*. The beginning date of the Plan is referred to as *the Plan start date*.
- Start-up also should coincide with the ability of RTO West to commence cost recovery through payments for a defined and approved set of services.
- *RTO West will start-up* when the bundle of all necessary functions as specified in the RTO West filings begin operating simultaneously, recognizing that functions are still somewhat generally defined, i.e., are not at the level of detail of protocols.

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- The start-up date for RTO West, i.e., when the enterprise goes live and begins to manage the transmission network in its defined boundaries and associated markets, is also referred to as the *operational start* or the *operational start date* of the enterprise.
- Individual tasks or main elements of the Plan have beginning and ending dates. These are referred to as task *start dates* or as a task *starting up*.

4. Definition of Independence Day

Independence Day occurs when the RTO West permanent independent Board is seated with a quorum and assumes governance responsibility for the enterprise.

5. Definition of Tariff and Protocols in FERC Filings

For purposes of this Plan, the *Tariff* is defined as the Open Access Transmission Tariff (OATT). The OATT is a detailed framework describing the structure and functions of the RTO. In essence it answers the questions, “what service will be provided and what terms and conditions apply to that service?”

Protocols are the details describing how the RTO will operate. Protocols are the operating and market rules of the entity. In essence Protocols answer the question “how will the RTO execute its OATT?”

Appendix III:

Empirical Startup Information - Benchmarks

1.0 Introduction

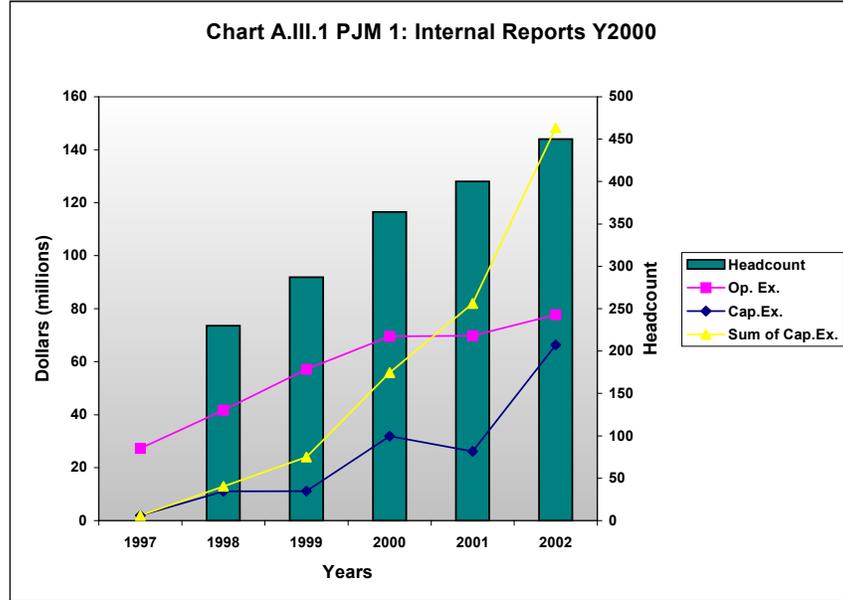
In the United States, there are now six ISO and one RTO organizations that can be reviewed for their financing history. Three of the ISOs are currently single state organizations: the California ISO, ERCOT in Texas, and the New York ISO. There are three multi-state organizations, New England ISO, PJM, and the Midwest ISO, the sole RTO. PJM, NY-ISO, and NE-ISO all developed from tight pool agreements, with significant cumulative experience and financial ability to support the new organization prior to its operations. The Midwest ISO is the most comparable to the current situation in the Pacific Northwest, but is not yet fully operational and has a short history of under-estimating the time needed to provide various phased-in services.

A brief disclaimer of the data that follows is necessary. Information came almost exclusively from public record materials. Some data points are interpolated, and others represent forecasting (as a last resort). Tracking capital expenditures, in particular, is difficult during early years when pool members may have carried expenses, or footnoted expenses are in contrast to other reports. (For this reason, PJM has two graphs.) During bridge funding years, the overlap or carrying of capital expense into a subsequent year is hard to trace. Sources for all data used are available, upon request, and data that is forecast or estimated is differentiated. Another area of non-comparability is in employees hired ("headcount"). Early stages of the organizations had varying amounts of contract, consulting, or seconded work forces. Thus the most that can be said about employee hiring is that it reflects a trend of effort involved through starting up various functions. Indeed, the best way to interpret the following graphs is as indications of magnitude trends.

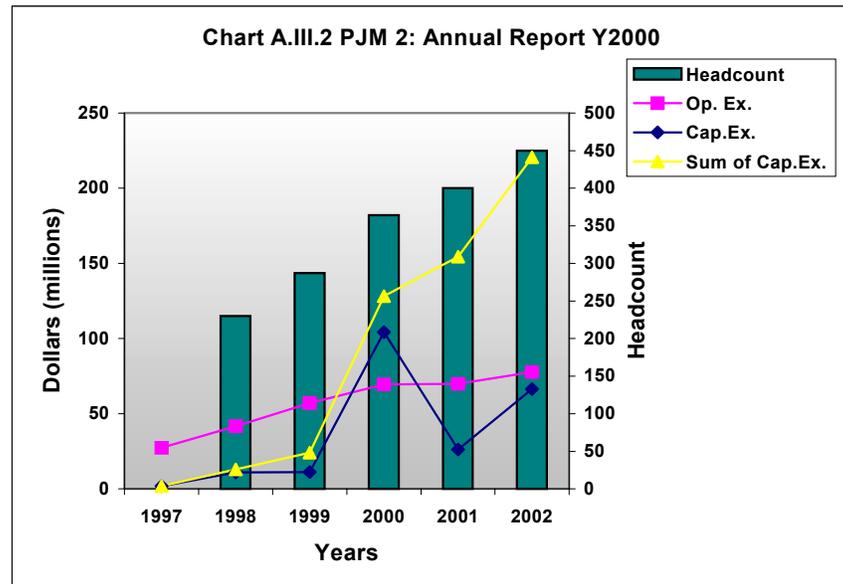
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2.0 PJM

2.1 Summary of Expenditure Patterns



Source: PJM Website, © Andersen, 2002



Source: PJM Website, © Andersen, 2002

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PJM pursued a gradual phase-in of market functions starting with its ISO status change. Bid-based energy markets began in 1997. LMP was initiated in April 1998, with month-ahead (November) and day-ahead (December) energy markets clearing later that year. In 1999 the FTR auction and capacity markets were introduced. Capital expenditures were recorded financially as accounts receivable from PJM members in 1997. Third party financing was not obtained until 2000, immediately following FERC's approval of PJM's OATT. Prior to this time, facilities (buildings), "transition projects", EMS replacement were paid for by PJM members or "not charged" to PJM until financing was obtained.

2.2 Key Factors

According to reports from contacts with PJM in September of 1998, staff's only regret was "not staffing up sooner and faster and therefore having to rely too much on consultants who had to train on the job and then left with the expertise." (TGAL Report, September 1998.)

PJM staff felt it learned from observing changes in membership at MAAC, "helping a lot to understand what it would be like to work with a diverse set of interests." (Id.)

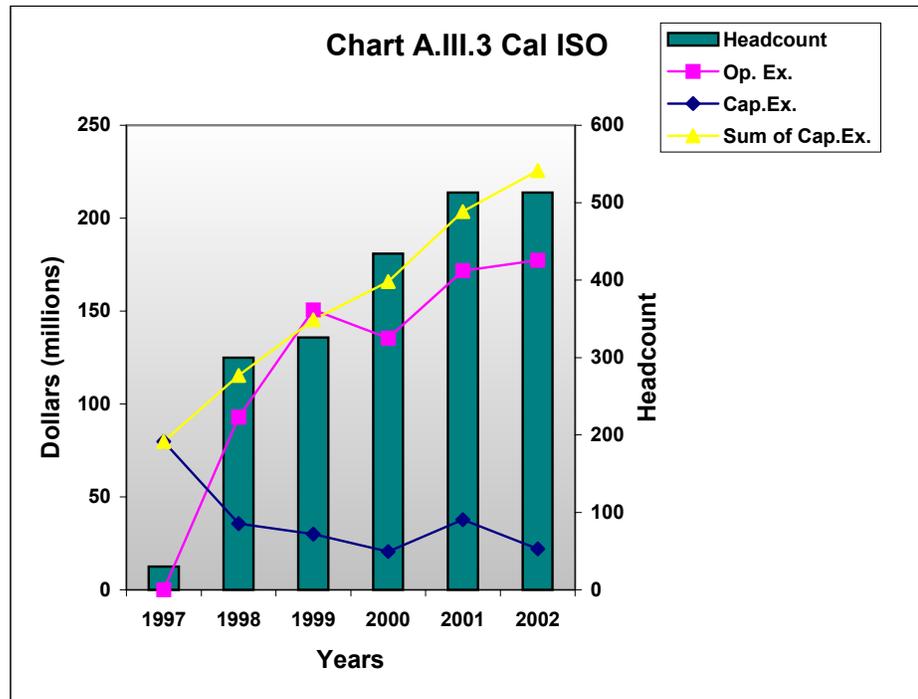
PJM staff also noted the "luxury of incremental change", and the existence of a functional entity with an independent body long before ISO status was attained. (Id.)

PJM benefited from real time generator control at cost during transition to bid-based forward market and slow introduction of multi-part settlement. (e.g., day ahead schedules become binding, and real time costs allocated on the basis of those who cause them by measuring "differences" in DA schedule with real time.) PJM currently limits intra-day schedule changes: standing bids due the day before are used by most, with control areas only allowed to change bids in response to intra-day events.

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3.0 Cal-ISO

3.1 Summary of Expenditure Patterns



Source: Cal ISO Website, © Andersen, 2002

The California ISO used a trust mechanism prior to startup, funded by a bank loan that was guaranteed by the three CPUC-regulated investor owned utilities. This option would most likely be unavailable to RTO West because of the level of state coordination required. This mechanism, although serving its purpose, created certain transitional risks and fragmented accountability over the life of the startup project. Trust funding was \$250 million for both the Cal-ISO and California Power Exchange. Additional funds were required to startup, and were supported by bond financing after the ISO's Grid Management Charge (GMC) was approved by FERC. The GMC was prepared and filed by an independent board as soon as it was seated, and the total time to prepare the FERC filing and bonds was 9 months. Funds were available from the bonds shortly after operations began to reimburse the trust.

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3.2 Key Factors

Communications costs that saddled the organization for years were a result of two factors: (1) estimates of data traffic based on optimistic participation from the retail market after stranded costs were collected, and (2) lack of expert advice regarding industry standards for contracting a private dedicated network.

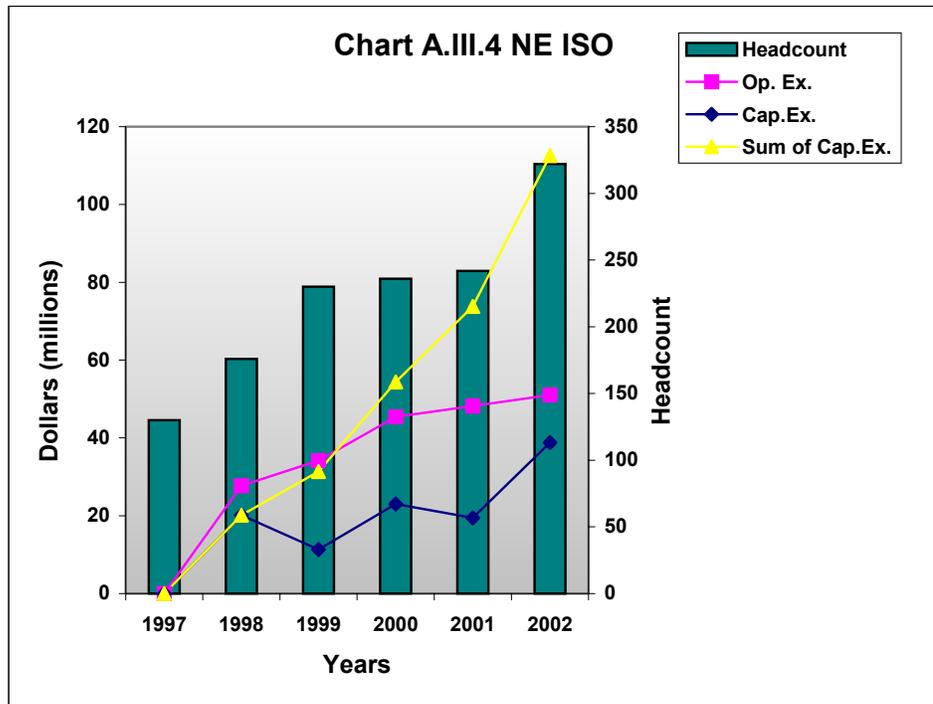
Aggressive startup period, with high levels of functionality rolled-out concurrently, pressed startup costs upward and contributed to significantly higher debt service burdens. Vendor management in a compressed development period was unduly challenged, particularly during the transition from trust to management control of the project.

Stakeholder participation and, to some extent, Board participation, were limited as the priority became making re-set startup dates stick. Safeguards and relationships inherent in both processes suffered a prolonged setback, and market-driven events prevented fixing some of the short-cuts and patches used to make the startup date.

Real time pressures on operators that emerged in the first two months of operations did not trigger a move to multi-system settlements due to restrictions inherent in the California Power Exchange's mandatory buy-sell rule for IOU's. Unlike tight pool environments, which have a history of direct generator control, participants in California expected to have a very large range of flexibility to deviate from prior schedules.

4.0 NE-ISO

4.1 Summary of Expenditure Patterns



Source: NE ISO Website, © Andersen, 2002

Various Restatements of the NEPOOL Agreement (RNA's) were used to fund capital between 1997 and 2001 for the NE-ISO. NE-ISO started its existence with the transfer of existing NEPOOL staff and assets in January of 1997. In 1997, FERC expressed concern that the independence of the ISO might be compromised if it did not have its own fee and means of raising capital for development. NEPOOL is the primary if not sole source of revenue collection for the ISO, and up to that point capital expenditures were expensed through collection from pool members.

The Capital Funding Tariff (CFT) was created in response to FERC's concern, and collects Capital Funding Charges (CFC) to the extent of ISO service on three service schedules, as capital costs are incurred. On the basis of FERC approval of the CFT and capital needs of 2000 and 2001, NE-ISO's first bank loan was obtained in June 2001. This bank loan was term credit of \$43 million, of which \$42.5 million was utilized by November 2001 and \$23.1 million was used to

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repay NEPOOL for prior capital purchases. The remainder (\$19.4) was used for capital projects in 2001.

For capital expenses after 2001, the CFT is only used if third party funding cannot be obtained. NE-ISO expects to have a total of \$82.1M in Late Restructuring Expense to collect through the CFT, of which \$42.3 was incurred in 2000 and 2001. The 2002 capital budget of \$38 million will be used to implement PJM type market design, including congestion management, a multi-settlement system, and Financial Congestion Rights.

4.2 Key Factors

NE-ISO experienced difficulties shifting to an inclusive stakeholder process, leaving many participants feeling “cut off from direct influence...and the market rulemaking process”. (TGAL Report, supra.) It also experienced difficulties using a NEPOOL committee structure to provide customer input.

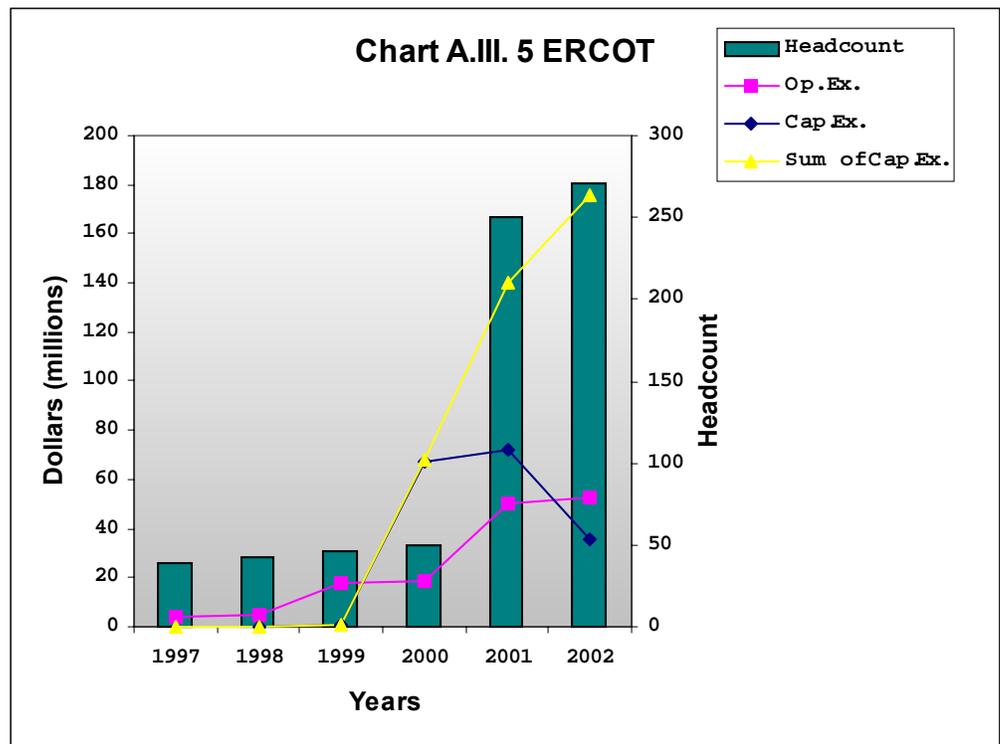
NE-ISO experienced difficulties in proposing solutions to problems or market rule changes and getting timely decisions from NEPOOL members.

NE-ISO experienced difficulty reaching functionality of “Third Effective Date” (congestion management, multi-system settlement, and FTR’s) given chosen market design. Additional capital spending to shift to PJM methods after extended efforts.

NE-ISO benefited from the slow development of functionality, with a solid foundation on scheduling imports and exports, and early addition of direct control of generators in real time. Real time operations benefited from low, cost-based control of generators with annual AGC costs in the \$2-3 million range per year, before day-ahead market for energy began.

5.0 ERCOT

5.1 Summary of Expenditure Patterns



Source: ERCOT Website, © Andersen, 2002

ERCOT's predecessor began in the 1940's, and has never been federally regulated. In 1995, Texas legislation opened the wholesale market, and in September of 1996, ERCOT established its independent (ISO) status and began providing security coordinator service. Minimal expenditures were involved in this first transitional step, which required all import and export schedules between control areas be coordinated by ERCOT. Planning consumed most of 1999, and the majority of hiring and systems work took place in 2000 and 2001. Work was funded at levels approved by the Texas PUC and supported by ERCOT in filings. In mid-2001, ERCOT began providing control area services. ERCOT's continuing capital needs are funded by filings made at the Texas PUC.

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5.2 Key Factors

ERCOT benefited from a slow increase in functionality, starting with management of imports and exports between control areas. ERCOT did not begin single control area responsibilities until five years after ISO was established (mid-2001.) Full functionality was deferred for public process at Texas PUC on market design that included legislated retail access.

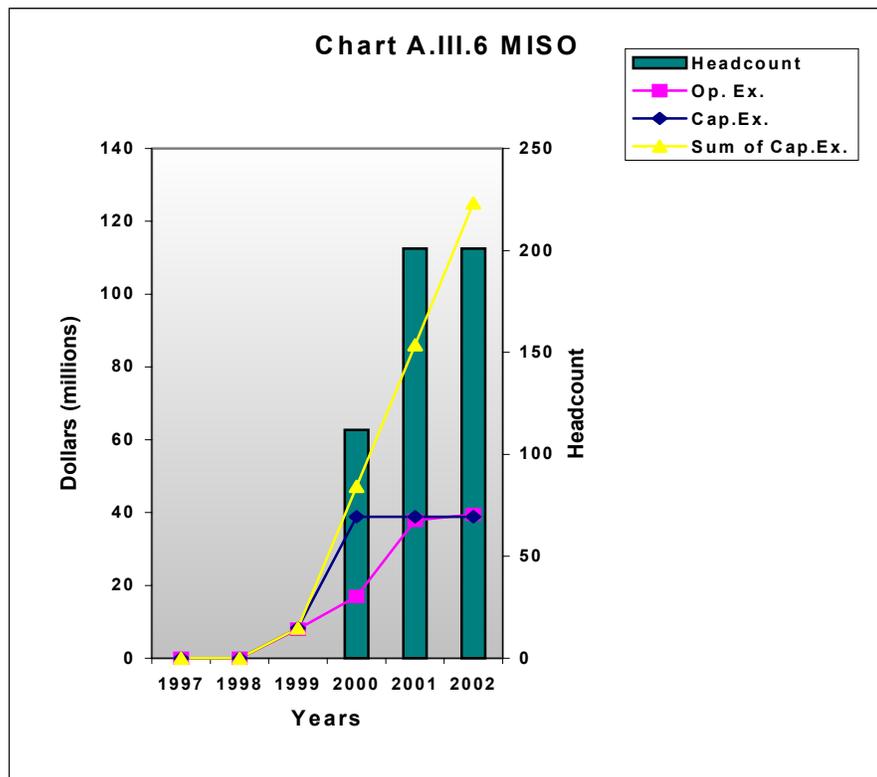
ERCOT is facing near term decisions to address the need for a multi-system settlement.

ERCOT experienced a major price excursion in the first week due to delayed submission of a major IOU's schedule, and had no rules in place for price recalculation or authority to impose penalties. Startup testing did not identify this interdependency or provide an iteration for honest mistakes in participation to be corrected.

ERCOT has a single regulatory authority to interpret state statute and provide for its revenue requirements. ERCOT's market design is still maturing.

6.0 Midwest ISO

6.1 Summary of Expenditure Patterns



Source: MISO Website¹, © Andersen,2002

MISO was approved by FERC as an ISO in September of 1998. Over a year later, in November of 1999, a bank loan for development work in the amount of \$50 million was obtained, guaranteed by one transmission owner. Significant expenditures began in 2000, and in June of that year FERC authorized a \$100 million loan, which was secured by FERC's approval of funding agreements negotiated among more transmission owners and eliminating the risk of utility withdrawal of participation. MISO has recently begun operating as a security coordinator, taking import and export schedules as agent for other control areas prior to initiating additional market functions.

¹ MISO's 2001 financial report will not be issued until mid-March, and data is estimated.

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6.2 Key Factors

MISO has benefited from early independence, which has allowed an early establishment of constructive stakeholder relations.

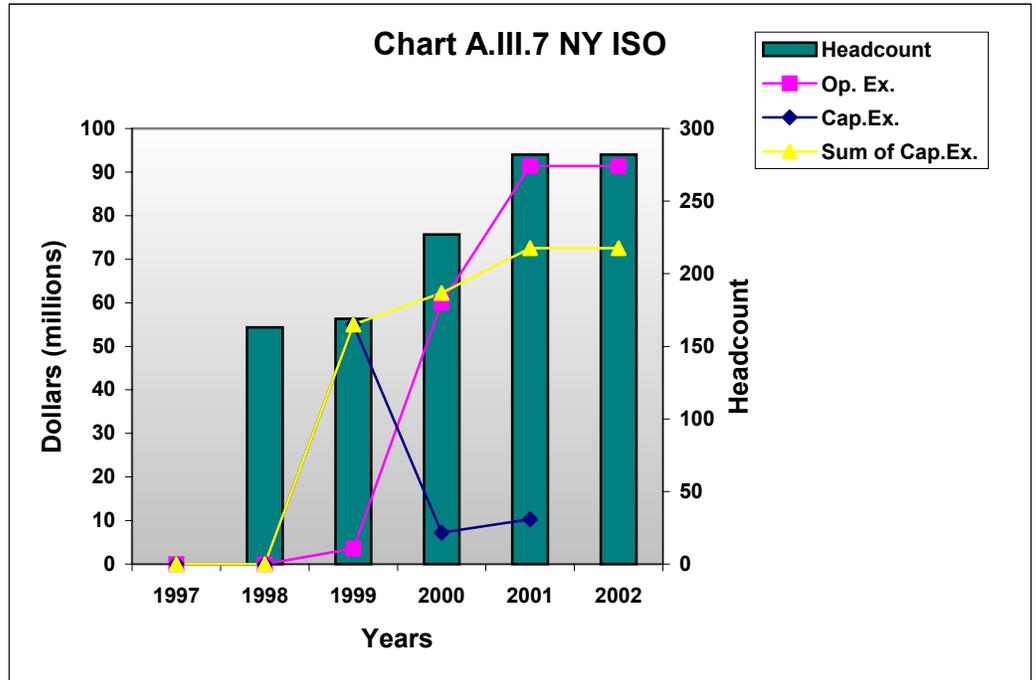
MISO has exercised the freedom to re-set operational dates as the design, development, and testing period was in progress, based on the needs of stakeholders and vendors to fully vet systems.

MISO still does not have a FERC-accepted solution for imbalance energy or congestion, and therefore the area of maximum vulnerability (real time) remains in a developmental stage. MISO's market design is not yet mature, and its startup experience cannot yet be assessed.

MISO has established early a status that enables public (municipal) utilities to participate without risk to tax-exempt financing.

7.0 NY-ISO

7.1 Summary of Expenditure Patterns



Source: NY ISO Website, © Andersen,2002

The New York ISO funded its restructuring of the New York Power Pool through the pool agreement. The pool was established in 1966, and in 1997 the participating transmission owners agreed in principal, as members of the pool, to fund “transition assets” in order to convert the pool into an ISO. Throughout 1997 and until mid-1998, the NYPP submitted various proposals for governance to FERC, two of which were ultimately modified to provide more independence. The ISO began operations in December 1999, and in 2000 used a term credit loan to pay for the transition assets.

7.2 Key Factors

NY-ISO evolved from the 1966 NYPP, and benefited from the expectation of mandatory cost-based participation of generators that established real time control before day-ahead energy market was opened.

NY-ISO benefited from availability and insights of staff at adjacent PJM and NE-ISO.

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NY-ISO tracks MWh's of both cleared and bilateral trade, and has a well-developed evaluation of market behavior and metrics to guide decision-making.

NY-ISO and other participants in the state have taken expeditious actions in less than a year timeframes to address expected supply shortages that would pressure the market design.

8.0 Themes Common In Startup

The three graphs below, at the end of Section 8.0, combined with experience, depict some common themes that have affected the startup of all of the ISO/RTO organizations.

8.1 The risk of unproven market designs

By tracing the history of expenditures at varying organizations, the costs of proceeding with untested market designs can be evaluated, although the data is both incomplete and the time periods not yet comparable due to the differing years of experience between organizations with differing functionality in place. (Missing data can be assumed in all graphs where lines are flat.) These costs take the form of additional operating expense in manual workarounds, patching of inter-connected systems, systems that become out of date or unsuited to the needs of functions that are added after startup. All organizations, including tight pools, have faced challenges to real time operations due to unplanned participant behavior, which ultimately had to be curbed through now-established techniques.

8.2 The difficulties of digesting rapid hiring rates

Organizations with rapid ramp-ups in hiring have faced different organizational challenges than those that grew more gradually from pools, or inherited pool staff with experience in transmission scheduling.

A more complete picture of the hiring equation would require consulting and contracted staff be identified and priced. Evaluating the impacts on institutional expertise and intellectual property created through startup expenses would be useful, but was not possible given public data and this assignment's deadlines.

Evidence suggests that slight over-hiring and retaining intellectual capital created through startup may be preferable to the difficulties of churn in temporary help, and can be corrected over time through normal attrition if necessary.

Two of the lowest cost (cumulative capital) ISO's – New York and New England – had gradual rises in employees in early stages, particularly when one factors in NY-ISO's initial transfer of 111 skilled NYPP employees.

8.3 Phasing of functionality

With notable exceptions driven by state control (California, Texas), a loose succession of functionality can be observed or forecast, either as a goal or in actuality as events unfold(ed). Several organizations started from a security coordinator role before the term existed (reconciliation of regional imports and exports), and moved to regional control area roles congruent with the tight pool (imports/exports between control areas). As the ISO role was established, functions were added once the prior new function was stable, roughly in the following order:

- direct control of generators in real time, then
- introduction of a day-ahead energy market, then
- introduction (planned or achieved) of Locational Marginal Pricing (LMP), then
- a shift to bid-based rather than cost-based payments for real time instructions, then
- combined with (or shortly followed by) a multi-system settlement and market power limits, then
- introduction of a congestion management hedge (FTR, TCC, etc.).

It is worth considering whether experience and confidence of the organization with real time control over generators, prior to initiating energy markets, can help create an environment that is more conducive to good stakeholder relations, and more orderly execution and planning of successive functions. The evidence is largely anecdotal at this point, but there is a consensus that some startups have been harder than others, and that institutional culture and important client relationships are formed and shaped in startup.

8.4 The risk of proceeding with flawed governance

Organizations with an established sense of independence and clarity have tended to do better than those that must develop it from scratch. More mature organizations have been able to exercise judgment about differences between responding to state concerns with information, and reacting to state concerns with changed behavior that may or may not be helpful to interstate commerce or the industry's need for a stable operational platform. Efforts to broker or bridge hidden conflicts between jurisdictions have added costs and had long-term negative impacts on stakeholder relations, which also increases costs.

8.5 The relationship between development cost risk and independence

Once independence is established, development costs are those of the independent organization and stranding of those costs could only occur if the organization fails to start operations. Organizations that have delayed

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independence have borne the related development cost risk, which has materialized in one case to date. All of the tight pools benefited from expensing some development costs in early years before ISO operations matured (pay as you go), often reducing the amount of debt that would ultimately be carried.

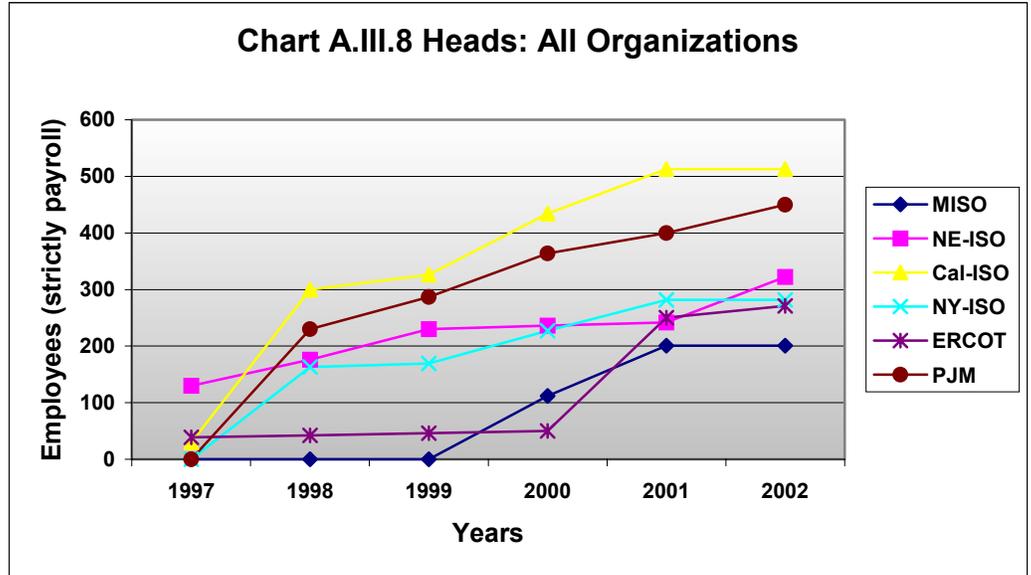
8.6 The relationship between operating expenses, capital costs, and employees

Although it is not readily apparent from the data, constant trade-offs between operating and capital expenditures occur. For example, should the RTO hire extra people to manually adjust a settlement problem and defer investment in the system until a planned change can incorporate it? Which capital projects and “bugs” to fix concurrently and which to do individually?

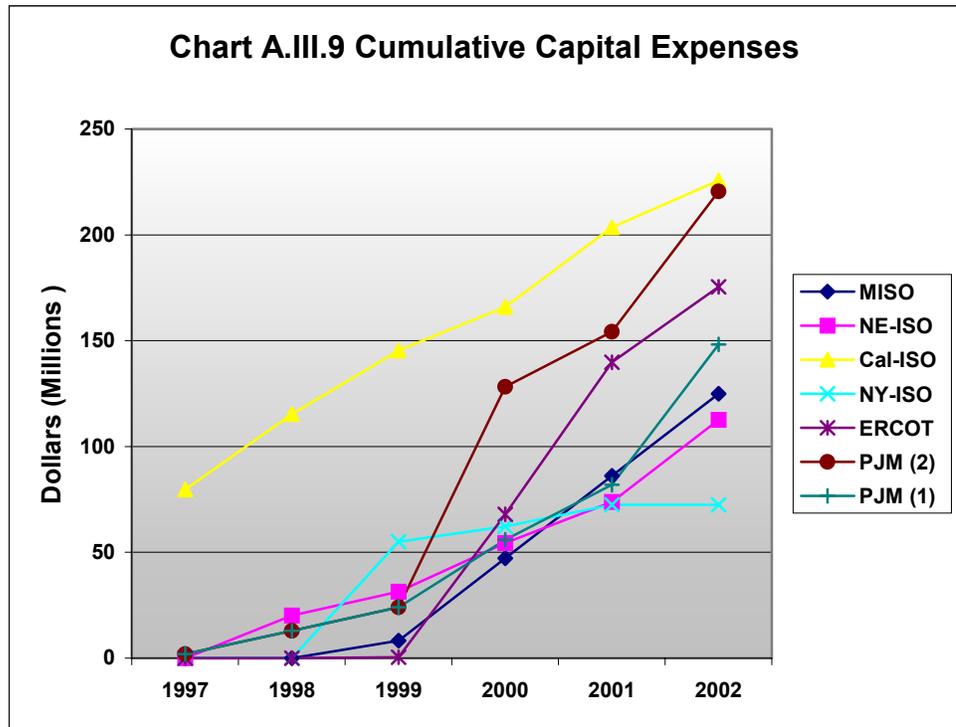
Accounting rules across organizations are not common. (e.g., one organization expenses all projects under \$1 million.) The relationship between capital and operational expense in the area of systems work is actually quite complex during the development period, when additional functions are still being designed and day-to-day problems solved with seconded, contracted, consulting, or employed staff. Opportunities and incentives to maximize capitalization over operational expense is different when organizations can lean on existing pools to expense development work.

The fluid backdrop of phased functionality, flaws in functions already in operation, philosophies about vendor relationships, varying geographical scope of the organization over time, and the force of market pressures to adapt to immediate needs, all impinge upon the theory of least-cost planning.

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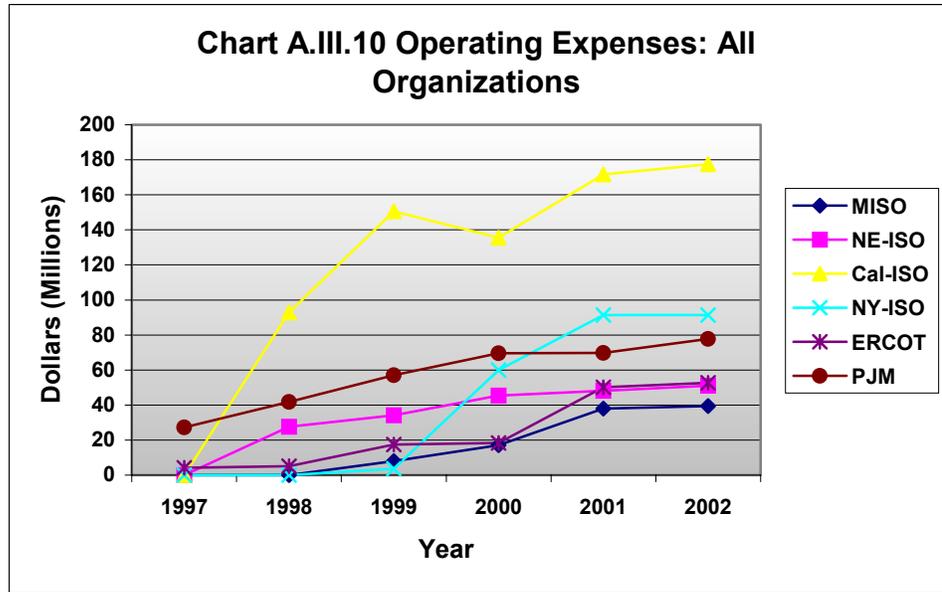


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Appendix IV

Financing Options

1.0 Specific Options

1. RTO Baseline Plan: utilities fund until Independent Board seated, at levels less than those required for major vendor commitments. Thereafter, RTO obtains funding for major commitments.
2. Utilities fund until Independent Board seated, at levels needed to proceed with major vendor commitments. Thereafter, RTO obtains funding for major commitments, and possibly repays utilities for certain expenditures. (per NY-ISO, NE-ISO, PJM.)
3. Earlier Independence: RTO funds using utility guarantees. (per Midwest ISO.)
4. FERC AFUDC account established, then follow baseline Plan.
5. FERC surcharge established in wholesale transmission rates to pay for development as it is incurred.
6. State surcharges requested to pay for development as it is incurred.
7. FERC Declaratory Judgment regarding reasonable expenditure prior to Independent Board.

2.0 Discussion

1. Baseline Plan. Sequence of events: “state” approvals of RTO participation; TOA signed; Independent Board seated; begin major vendor commitments and obtain long term financing by RTO.
 - a. Long term financing

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- i. Note: will require guarantee of PTOs supporting RTO loan. Options: executable with or without state approval of PTO guarantee.
 - ii. Bonds: will require RTO's own costs and fees be established in FERC rate case. Leaves unresolved whether state would allow RTO fees to flow through PTO to retail bill if state does not approve RTO participation. (Bond issuance requires credit agency rating, which will guide level of working capital required.)
 - b. Maximum recovery risk of pre-Independence development costs, offset by relatively small amounts at risk: no major vendor work or hiring yet.
 - i. Residual post-Independence timeline and institutional impacts are aggressive.
 - ii. New RTO will face significant pressure to delay startup and/or increase costs of startup due to degree of development deferred by funds made available.
- 2. Extended utility funding. Sequence of events: begin development work including major vendor commitments; "state" approvals of RTO participation; TOA signed; Independent Board seated; long term financing by RTO.

FERC has taken issue with this option in circumstances in which insufficient independence in the managing organization was available to manage vendor and design work. Spending on major transition projects by tight pools was an acceptable method in the late 1990's, but even the NE-ISO was instructed in 1999 to move to more independent funding of activities. Risk of non-recovery was reduced by the existence of tight pools, which were unlikely to reject either systems or their costs because of their management of the projects.

Pursuing this option will require some interim independent organization that is acceptable to FERC as project management. FERC would need to support with decisions the necessity of the predecessor organization binding the RTO to accept both work and costs once it became established.

- 3. Move Independence forward. Sequence is: Independent Board seated; Board seeks and gets startup finance authority at FERC; state approval of RTO participation; TOA signed.

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- a. With or without state approval of PTO guarantees (if any) supporting financing. PTO guarantee likely to be needed during pre-operational period.
 - b. State given opportunity to oppose RTO until FERC takes action within its jurisdiction to support finance in wholesale rates.
4. Federal AFUDC, with or without state AFUDC. Sequence is: FERC approval of development budget pre-Independent Board; state approvals of RTO participation; TOA signed; Independent Board; long term financing by RTO.
 - a. Seek coverage for development budget up to date of Independent Board's financing.
 - b. AFUDC treatment at FERC: state may file opposition at FERC. State may require some PTO's file concurrently for AFUDC treatment at state level. May defer conflict over uncertain retail bill impacts.
 - c. Refusal by FERC carries certain advantages and disadvantages, depending on each PTO's motivation and ultimate participation goals.
5. Federal surcharge. Sequence is: FERC surcharge for RTO development budget pre-Independent Board; state approvals of RTO participation; TOA signed; Independent Board; long term financing by RTO.
 - a. Not previously tried in electric cases. (Examples are FCC surcharges in support of FCC federal policies; state electric surcharges.)
 - b. Resolves early whether unbundled wholesale transmission charge or "policy adder" will be flowed through to retail rates before magnitudes become large.
 - c. Risk of Congressional intervention.
6. State surcharge. Sequence is: State surcharge for RTO development budget pre-Independent Board; state approvals of RTO participation; TOA signed; Independent Board; long term financing by RTO.
 - a. More likely to work when RTO development is state sponsored.

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- b. May create ongoing review and approval of milestones and related costs that provide states with the level of control they desire.
 - c. Clarifies ultimate RTO membership, potentially assisting FERC.
 - d. Will require over-arching allocation methodology that is not inconsistent between states. Allocation methodology potentially resolvable through FERC's state panel process.
7. Baseline Plan, plus 3/1/02 Declaratory Order. Sequence is: Request Declaratory Order from FERC in early 2002, finding that it would be prudent to fund development for RTO West in the absence of: (1) state approval of participation, (2) an Independent Board, (3) FERC approved OATT that is under development. Then proceed as in baseline Plan.
- a. Tests FERC's willingness to support its policy. No worse off: likely to dismiss without prejudice if not granted.
 - b. Narrows scope of reasonableness and related recovery risks.

Appendix V:

Program Development and Procurement Discussion

Successful development of RTO West requires the execution of a multi-threaded complex project may have the following major threads:

Program Management

Financial/Business

- Business and Financial Planning
- Financing
- Public Information and Communication Program
- RTO West Development Organization

Legal and Regulatory

- Legal Organization
- FERC Filings
- Securities and Exchange Commission
- Local Concurrence/Approvals
- Internal Revenue Service
- Other Legal Agreements

Operations

- As Is Infrastructure Review
- Assess and Develop Requirements
- Select Alternative Development Options
- Develop RFP Shell(s)
- Seams Dependent Infrastructure Development
- Seams Independent Infrastructure Development
- Prototype Workflow Development
- RTO Officers Review and Approve Workflows
- Business Infrastructure Implementation (PCs and LANs)
- Major System Tests

- Business Simulations (ALL Process and Systems)
- End-to-End Testing (3 Months)
- NERC Certification Of Facilities
- Audit/Certification of Settlements
- System Security Certification
- Gaming Simulations
- Market Testing
- Market Participant Training

Administrative and Governance

- Infrastructure Development
- Prototype Workflow Development
- Officers Review and Approve Workflows
- Perform Employee Procedures Training
- Officers Select Financial Auditor
- Human Capital and Organization Development
- Stakeholder Process
- Facilities
- Telecommunications

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Each one of these almost 40 threads constitutes an active project that will need managing, coordinating and in some cases services or goods procuring. This discussion describes the major options for this process as they are governed by the following mandate.

- The RTO WEST Development Program will be executed using a least delivery risk philosophy that is designed to meet any agreed to or mandated schedule provided by regulatory authorities. Under this condition choices will then pursue the least cost path. Any choice that constitutes the “least cost” alternative will be reviewed in all cases to ascertain whether modification of these options would fall under the least risk provision.

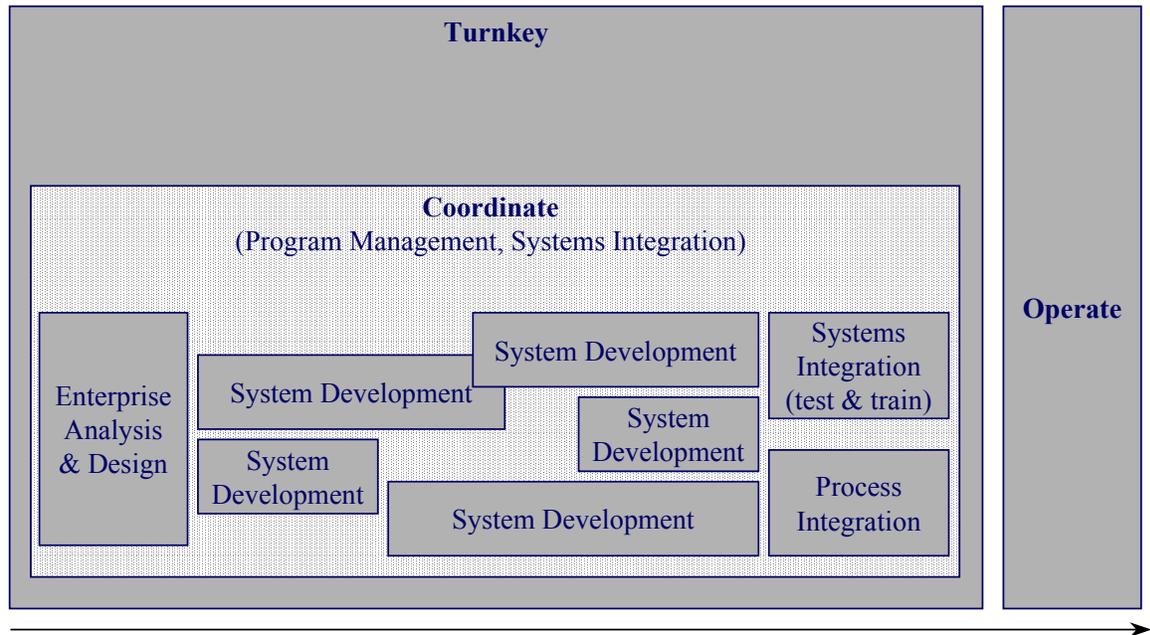
Typically the next step is to distribute the systems and infrastructure into “Procurement Packages”. One such distribution would be as follows:

- Technical Systems: SCADA/EMS/AGC and Control Center Integration (if required), Market Based Systems – Ancillary Services, Congestion Management, Balancing/Pricing, Scheduling and Tagging, Oasis.
- Business Systems: Financial, HR/Payroll, Settlements and Billing, Customer Service
- Business Infrastructure: PCs, LANS, Internet, and Data Warehouse
- Telecommunications
- Facilities: Primary and Backup

Each of these packages can be successfully contracted out for delivery individually, combined or could be managed and delivered under the Program Manager. The elements, as listed, of these packages have been distributed differently in some RTO/ISO developments largely as a function of the agent responsible for putting out the RFPs. However, although this might be viewed as arbitrary the eventual organizational ownership, including the outsourcing of various functions, should be considered in the package description.

As in the start-up of any new organization the initial discussion focuses on these “procurement packages”, however unlike most other start-ups an RTO startup is regulatory driven, requires tight integration with existing utilities and constant support from the parent organization(s). Consequently, although the technical packaging may be viewed as straightforward the management of the effort is not. What follows is a discussion of the various “vendor” roles that have been used in other ISO/RTO developments and how they impact the overall development effort. The picture below illustrates the complexity of the development over time:

Chart A.V.1 Illustration of Development Roles in Major Programs



Source: Arthur Andersen LLP, Internal Documentation

The discussion regarding turnkey delivery centers on the role of a Prime Contractor. The Prime is typically the lead vendor in a consortium. Most often the Prime is also the Systems Integrator for the elements of the program they are committed to deliver. The key issue here is the scope of the delivery under the Prime, and to what extent some or all of the 40 threads above are included. Most often the Prime is associated with the delivery of the infrastructure and the rest of the development efforts of the RTO are under the management of an overall Program Manager who should then pass their responsibilities off to the management team under the new CEO.

One cautionary note, if the Prime does not take responsibility for the integration of the technical elements then in essence they are a Program Management entity for the consortium, and it will be important to understand who actually has the responsibility for making the technology work. In a startup situation, what needs to be avoided is a series of contracts where each assigns the responsibility of failure to another. In this case the client becomes the main integrator. The responsibility for integration has been shifted from the contractor to the RTO/ISO. The result of this is not satisfactory as most often your staff will be new or temporary and the shame of defeat for the Prime is minor versus the monetary rewards.

To summarize, although hiring a Prime Contractor who has complete responsibility for the delivery of a functioning RTO sounds like a good idea, it can contractually relinquish much of the control of the project, and the choice of the other solution vendors to them. Due to the typical RTO/ISO schedule, and the

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consequent implementation risk with the project, it may be difficult to negotiate a contract with sufficient strength to render a “Prime” contract a beneficial vehicle given the unique nature of the development. Theoretically, it can work but you are effectively putting all your eggs in one basket and the program becomes an endless argument of what is in or out of the contract and a fight to find out exactly what is going on. Furthermore, there should be entity who protects the interests of the RTO not the interests of the delivery agents.”

As mentioned above, the System Integration role is another key “vendor” role. The functions of System Integration can be bundled into one of the system packages, included as part of the contract with a Consortium or an independent integrator can be hired. As mentioned above, it is important that the integrator role is focussed on the provision of an integrated suite of systems. In some cases this role has become mixed with Program Management and the contract has been diluted to the extent that the “System Integration Management” function had no contractual responsibility for delivery. The following are our observations on the role of the SI.

In the case of a single systems vendor (consortium) providing all the software technology the role of the SI is minimized. In this case it makes sense for the integration role to be provided by the consortium with the system integration “management” role being included in the overall program management function. In this case the contracts should be carefully constructed to allow maximum visibility to the RTO/ISO client (or agent) and provide for a series of validation points and client input.

In the case of multiple software providers then the independent system integrator role is of paramount importance. As an option you could elect to save additional overlap dollars by rolling this function into a program management role for the overall program. The key is to make sure that there is contractual commitment for an integrated delivery and that the contracts for each vendor enforce them working under the SI/PM function.

In all cases it is essential that RTO West have some form of direct IT assistance to protect their own interests, as well as provide a path for the transfer of maintenance and operational details to the future RTO West staff. Hiring of key RTO West personnel must proceed to get the “owners on board” during the early development of the technology. Too often the owners arrive when the products are already in the final stages of integration and their insights cannot be fully utilized without another round of development. Additional time and money is then needed.

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In Summary: It is very unlikely that RTO West can successfully be built using a general contractor (as in a power plant). More likely is that RTO West will require a mechanism where they have an agent managing the overall program and each individual project thread and procurement is packaged so as to minimize management overhead. Delivery risk is reduced by packaging integrated elements together in such a manner that there exists a cast iron contractual responsibility for the successful operation of the systems, and at the same time providing a RTO West with transparency in the development of the systems.

Appendix VI:

Seams and Common Market Problems that Challenge RTOs: A Discussion of Issues and Options for Addressing Them

1.0 Seams Challenges for RTOs

Throughout the US the formation and development of RTOs creates a unique new interface problem. At the boundary, or seam, between two RTOs common issues and problems exist (even under a standard market design regime). While some problems are common to all seams nationwide, every region has distinct seams problems as well. The table below offers examples of issues and problems that are common to all or unique to a region.

Sources of Common Problems all RTO Seams Face	Sources of Problems with Unique Qualities for Regional Interfaces
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<ul style="list-style-type: none">• Congestion management• Scheduling interfaces• Cross market settlements• Standardization of emergency responses	<ul style="list-style-type: none">• Existing contracts• Bilateral market synchronization• Systems integration• Non-trade based reliability sourcing• International Boundaries• Practices/contracts of large non-FERC jurisdictional entities in region
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The seams content challenges are only half the equation. The other half is the process challenge for how to review, evaluate, resolve and manage seams issues once operations begin.

Seams processes must include stakeholder participation. More importantly, seams processes must be primarily between RTOs and recognized as negotiations as much as market design matters. Consequently, effective seams resolution requires true counterparties that can agree to “negotiated outcomes.” While stakeholders are instrumental in forging those agreements, they are not true counterparties.

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2.0 Pacific Northwest Seams Challenges

The formation of RTO West creates multiple Seams and unique problems on each distinctive Seam. There are three to five possible Seams to address:

- The RTO West-California ISO Seam
- The RTO West-WestConnect Seam
- The RTO West-British Columbia Hydro Seam
- The RTO West-Alberta Power Pool Seam
- The RTO West-Public Power Seam(s) in the Pacific Northwest

All of the actual seams issues and problems that emanate from the evolution of RTOs in the Western U.S. must be resolved if the goal of a West-wide marketplace, and by implication a de facto if not actual West-wide RTO, is to be achieved. The complexity of the challenge suggests a solution that may vary from typical more or less ad hoc stakeholder processes that result in filings by utilities and RTOs.

3.0 A West-Wide Intermediary to Facilitate Seams Solutions and RTO Developments

A Western Region-wide entity, such as a Trustee, could be designated to facilitate the negotiation of solutions to seams issues and problems between counterparties. This approach could be beneficial because the development of RTOs in the West is quite asynchronous.

- The California ISO has been operating for several years but is potentially legally constrained from direct negotiations.
- RTO West is still in its formative stages with a protracted build out period before it is either independent or operational. FERC approvals have been encouraging but an OATT is still not approved for RTO West.
- WestConnect is still very early in its formation without FERC approval.

An intermediary party accepted by all RTOs could facilitate development of a single market in the West as well as the development of RTOs and ITCs. In effect, the intermediary party could help synchronize development and facilitate counterparty agreements, even in an environment where independence issues prevail for all RTOs.

The strength of the intermediary entity's legitimacy would emanate from it being a voluntary organization – and not a requirement imposed by FERC or state regulators. It also would handle certain super-regional coordination activities that enable and enforce common business practices agreed to by RTOs and ITCs in the West as part of Seams solutions.

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As Seams solutions are achieved the role of the intermediary entity would evolve along with the development of RTOs and ITCs. The entity would remain and focus its efforts on ensuring the integrity of Seams solutions and providing support to super-regional activities that most likely would emanate from Seams solutions. The initial activities and other key features of a permanent Region-wide support entity are noted below.

3.1 Example Initial Activities

1. Single Super-OASIS site with links to RTO and ITC or sub regional sites
2. Standard setting for ATC and TTC calculations
3. Standard setting for regional market operations including time sequencing, common product/service and market definitions, common interconnection practices and common settlements practices to enable efficient software development
4. Shared market monitoring procedures
5. Shared dispute resolution procedures
6. Ultimate coordination for regional planning

3.2 Other Key Features

1. Established within months.
2. Management Committee comprised of members of each of RTO West, WestConnect, Cal ISO, and Transconnect. Other members would include representatives from key stakeholder groups including federal power, public power, market participants and state regulators.
3. Stakeholder involvement in working committees
4. More structured and directed forum than current ad hoc working groups for seams
5. No operational functions
6. Relatively small staff and few facilities
7. Funded by RTO West, WestConnect and Cal ISO

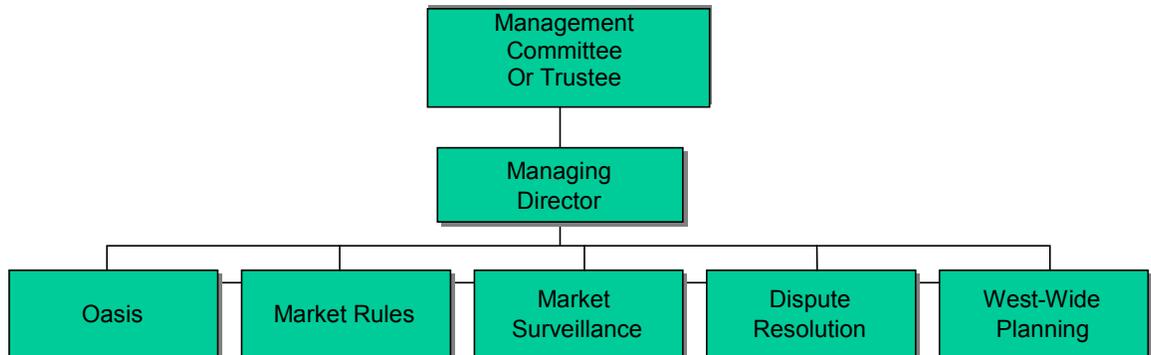
3.3 Sustaining Functions

1. Single Super-Oasis for one stop shopping to reserve transmission
2. Sets standards and is compliance monitor for Western region-wide reliability and market operations
3. Maintains market monitoring procedures
4. Maintains dispute resolution procedures
5. Coordination of Western Region Planning

3.4 Organizational Form

The above activities, features and functions can be grouped into five main responsibility areas. An organization that assumed these responsibilities would have a Management Committee or Board, a Managing Director and related structure, staffing, systems, and skills within each area. The organizational form is suggested below.

Chart A.VI.1 Proposed Management Structure



4.0 Conclusion

The Plan's implementation period includes seams solutions being achieved as part of the progression to operational start. The significance of Seams solutions will reach well beyond operational start for RTO West. A seams focused entity to assume responsibility for ongoing management of Seams solutions is an efficient way to address continuously evolving West-Wide market issues that cut across individual RTOs but are essential to establishing and maintaining a workable single Western US electric power market system.

Appendix VII:

RTO Certification Requirements for Operational Start-Up

FERC has expanded ISO certifications to meet RTO requirements

FERC has market liquidity concerns with respect to ISOs and the markets within them. In Order 2000, the FERC has mandated that ISOs expand geographic reach when forming RTOs. FERC has also indicated that it is not satisfied with the level of retail electricity markets' activities.

In moving forward with an RTO model, all ISO certifications and criteria hold true from the FERC standpoint. In addition, the RTO parties must demonstrate that their organizations possess characteristics, functions and open architecture as listed in Order No. 2000, starting on page 709:

RTO Characteristics:

- Independence
- Scope and regional configuration
- Operational authority
- Short-term reliability

RTO Functions:

- Tariff administration and design
- Congestion management
- Parallel path flow
- Ancillary services
- OASIS & TTC & ATC
- Market monitoring
- Planning and expansion
- Interregional coordination

Open architecture:

Meaning the RTO must have the flexibility to change its characteristics and functions as the markets demand.

NERC Certifications of RTOs are Not Yet Developed

The criteria to meet future NERC certifications is not yet clear, particularly now as operational authority is with the RTO. On January 20, 2002, NERC issued a proposal of a new NERC Functional Model. In the Functional Model, NERC offers four types of authorities, i.e., reliability, planning, balancing and interchange. NERC's proposal allows RTOs to pick and choose from this list of

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authorities. As utilities have unbundled, so has NERC done with these authorities.

Recommendations to RTO West

Maintain a strong focus on market design, modeling and testing to facilitate market liquidity through to the retail level.
 Keep current on developments at NERC. NERC standards may work better for RTOs that are interconnected, unlike RTO West.

Chart A.VII.1 Table of Historic ISO Certifications

ISO Certifications - FERC, NERC, State(s)						
	ERCOT	PJM	ISO-NE*	NY ISO	MISO	Cal ISO
<i>ISO start date</i>	State Approved	1-Jan-98	1-Jul-97	1-Dec-99	Early 2002	31-Mar-98
FERC Criteria/Certifications (Orders 888 & 889)						
Independence		x	x	x	x	x
OATT & OASIS		x	x	x	x	x
System Security		x	x	x	x	x
Market Design & Testing		x	x	x	x	x
Market Monitor		x	x	x	x	x
Settlements		x	x	x	x	x
NERC Certifications - Control Area Standards						
System Operations Standards	x	x	x	x	x	x
Planning Standards	x	x	x	x	x	x
Reliability Standards	x	x	x	x	x	x
STATE Certifications, as required						
Market Monitor	x	x	x	x		
Market Power		x				x
Settlements	x	x	x	x		x
New York State Reliability Council				x		
Utility Commission of Texas	x					

* NEPOOL is soliciting for new ISO entities as its contract with ISO-NE expires on June 30, 2002.

Appendix VIII:

Inventory of Training Requirements in Support of RTO Operational Start

Summary of RTO Training Requirements

The following document provides a summary of training requirements for an RTO to provide adequate training to Market Participants and RTO Staff. RTO has to develop extensive training programs for three major phases of RTO development and operation: 1) Operational Trials Training, 2) RTO Start Training, and 3) Ongoing Training.

Operational Trials Training

Operational Trials involve a wide-range testing of RTO Systems. Market Participants, who volunteer to participate in the Trials, should be required to attend training prior to the Trials.

Chart A.VIII.1 OPERATIONAL TRIALS (Shadow Operations)		
	External Training	Internal Training
Audience	Market Participants Involved in Ops Trials. (voluntary participation, should represent diverse customer segments)	RTO Staff Consultants/Contractors/Others (if involved)
Objective	To provide details on execution of Trials and clarify roles and responsibilities	To provide details on execution of Trials and clarify roles and responsibilities
Timing	At least two months prior to Operational Trials	At least two months prior to Operational Trials
Frequency and Duration	One or Two Training Sessions (depends on extent of involvement); 2-day Training Sessions	Depends on extent of involvement
Resources	Training Program Manager - responsible for design and content of training Training Coordinator - responsible for all aspects of training delivery Communication Coordinator – responsible for communication between RTO and Ops Trials Participants Trainers – conduct training	Training Program Manager - responsible for design and content of training Training Coordinator - responsible for all aspects of training delivery Communication Coordinator – responsible for communication Trainers – conduct training

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	Subject Matter Experts – provide content-related input; conduct training	Subject Matter Experts – provide content-related input; conduct training
Facilities	RTO Facilities Training Room (i.e. RTO site, System Vendor’s site, other) Hotel/Conference Center Facilities (if no technology constraints) Note: choice of facilities depends on technology requirements	RTO Facilities (or wherever the systems are located)
Attendance	Up to 50 Participants	All RTO Reps involved in Trials (participation not limited)
Agenda Items	Agenda may include: <ul style="list-style-type: none"> ▪ Execution of Operational Trials ▪ Timing and Duration ▪ Rules and Responsibilities of Ops Trials Participants ▪ Systems to Be Tested ▪ Testing Scripts ▪ Other 	Agenda may include: <ul style="list-style-type: none"> ▪ Execution of Operational Trials ▪ Timing and Duration ▪ Rules and Responsibilities of Ops Trials Participants ▪ Systems to Be Tested ▪ Testing Scripts ▪ Other
Training Materials	Training Manual On-line/Live Demo of Systems Hands-On Terminals (if available) Website	Training Manual Ops Trials Systems Website
Trainers	Subject Matter Experts (Utility Staff, RTO Staff, Outside Contractors) Consultants Professional Trainers	Subject Matter Experts (Utility Staff, RTO Staff, Outside Contractors) Consultants Professional Trainers
Location	Depends of technology constraints and availability of facilities.	RTO Facilities (or wherever systems are located)
Follow-Up Communication	Direct Communication (e-mail, phone) Mass communication (e-mail, website)	Direct Communication (e-mail, phone)
Technology	Training Environment (separate hardware/software) Computer Terminals (if enclosed environment) Internet Connection (if web-based, remote-access environment)	Training Environment (separate hardware/software) RTO Systems (hardware/software)

Source: Andersen

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RTO Start Training

A series of training sessions offered to all Market Participants to learn about rules and requirements of doing business with RTO.

Chart A.VIII.2 RTO START TRAINING		
	External Training	Internal Training
Audience	All Market Participants	RTO Staff
Objective	How to do business with RTO	How to operate RTO Systems
Timing	Six months prior to Start Date	A year prior to start date
Frequency and Duration	Every two weeks, 1- or 2-day training session; training may continue beyond RTO Start Date, as needed	Depends on extent of involvement
Resources	Training Program Manager - responsible for design and content of training Training Coordinator - responsible for all aspects of training delivery Communication Coordinator – responsible for communication between RTO and Market Participants Trainers – conduct training Subject Matter Experts – provide content-related input; conduct training	Training Program Manager - responsible for design and content of training Training Coordinator - responsible for all aspects of training delivery Communication Coordinator – responsible for communication Trainers – conduct training Subject Matter Experts – provide content-related input; conduct training
Facilities	RTO Facilities Training Room (i.e. RTO site, System Vendor’s site, other) Hotel/Conference Center Facilities (if no technology constraints) Note: choice of facilities depends on technology requirements	RTO Facilities (or wherever the systems are located)
Attendance	Up to 50 Participants	All appropriate RTO Staff
Agenda Items	Agenda may include: <ul style="list-style-type: none"> ▪ RTO Systems (i.e. Customer Registration, OASIS, Tagging & Scheduling, Other) ▪ Business Rules ▪ Roles and Responsibilities 	Agenda may include: <ul style="list-style-type: none"> ▪ RTO Systems ▪ Standard Operating Protocols/Business Rules
Training Materials	Training Manual On-line/Live Demo of Systems Hands-On Terminals (if available) Website	Training Manual RTO Systems Website
Trainers	Subject Matter Experts (Utility Staff, RTO Staff, Outside Contractors)	Subject Matter Experts (Utility Staff, RTO Staff, Outside

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	Consultants Professional Trainers	Contractors) Consultants Professional Trainers
Location	Depends on technology constraints and availability of facilities. If possible, rotate location to accommodate different geographic areas where customers located	RTO Facilities (or wherever systems are located)
Follow-Up Communication	Direct Communication (e-mail, phone) Mass communication (e-mail, website)	Direct Communication
Technology	Training Environment (separate hardware/software) Computer Terminals (if enclosed environment) Internet Connection (if web-based, remote-access environment)	Training Environment (separate hardware/software) RTO Systems (hardware/software)

Source: Andersen

RTO Ongoing Training

Training scheduled once or twice a year to 1) provide basic training on how to do business with an RTO for New Market Participants or new staff from existing RTO Customers, 2) provide information about major changes/updates in RTO Operations (i.e. major changes to Business Rules).

Chart A.VIII.3 RTO ONGOING TRAINING		
	External Training	Internal Training
Audience	New Market Participants Other Market Participants	RTO Staff
Objective	To provide information on: How to Do Business with RTO Major Changes/Updates at RTO	To provide internal ongoing training
Timing	Alternatives: Semi-Annual Standard RTO Training Scheduled As Needed (per MP request) Scheduled if major updates/changes introduced	As needed
Frequency and Duration	Semi-Annually, 1- or 2-day Sessions	As needed
Resources	Training Program Manager - responsible for design and content of training Training Coordinator - responsible for	Training Program Manager - responsible for design and content of training Training Coordinator -

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	all aspects of training delivery Communication Coordinator – responsible for communication between RTO and Market Participants Trainers – conduct training Subject Matter Experts – provide content-related input; conduct training	responsible for all aspects of training delivery Communication Coordinator – responsible for communication Trainers – conduct training Subject Matter Experts – provide content-related input; conduct training
Facilities	RTO Facilities Training Room (i.e. RTO site, System Vendor’s site, other) Hotel/Conference Center Facilities (if no technology constraints) Note: choice of facilities depends on technology requirements	RTO Facilities (or wherever the systems are located)
Attendance	Up to 50 Participants	RTO Staff
Agenda Items	Agenda may include: <ul style="list-style-type: none"> ▪ RTO Systems (i.e. Customer Registration, OASIS, Tagging & Scheduling, Other) ▪ Business Rules ▪ Roles and Responsibilities 	Depends on individual training requirements.
Training Materials	Training Manual On-line/Live Demo of Systems Hands-On Terminals (if available) Website	Training Manual RTO Systems Website
Trainers	Subject Matter Experts (Utility Staff, RTO Staff, Outside Contractors) Consultants Professional Trainers	Subject Matter Experts (Utility Staff, RTO Staff, Outside Contractors) Consultants Professional Trainers
Location	Depends of technology constraints and availability of facilities	RTO Facilities (or wherever systems are located)
Follow-Up Communication	Direct Communication (e-mail, phone) Mass communication (e-mail, website)	Direct Communication
Technology	Training Environment (separate hardware/software) Computer Terminals (if enclosed environment) Internet Connection (if web-based, remote-access environment)	Training Environment (separate hardware/software) RTO Systems (hardware/software)

Source: Andersen

Appendix IX:

Business Planning for RTOs

Discussion of Key Elements in the RTO's Business Plan

DESCRIPTION OF THE BUSINESS

RTO business definition can be articulated consistent with any business definition. It is critical is to be specific about products and services provided to what customers. While market segmentation may not seem on the surface to be relevant, RTOs do have distinctive types of customers with distinctive needs. The exercise of examining the “market basket” of services and the “category mix” of customers is useful because it helps the RTO better understand the diversity of relationships and service requirements that significantly drive annual budgets.

Business definition involves describing the functions performed and the resulting benefits to customers. It also defines the customer categories served and their general characteristics and it describes the technologies used to perform functions and produce benefits for specific customers.

Business definition should also include the legal form of the enterprise, e.g., not for profit public benefit corporation or taxable entity. It should discuss the expected growth and evolution of the business. The specific operational start day is included. Industry experience relevant to business definition should be discussed.

The business definition should focus on both standard market design characteristics and the unique aspects of the enterprise and why they are (a) included in the enterprise's definition and (b) are beneficial to customers.

Finally, business definition should include clearly articulated goals and objectives of the enterprise. Typically goals represent long-term outcomes while objectives are specific to a particular date. RTOs should emphasize near-term objectives, particularly for the first year following operational start.

PRODUCTS AND SERVICES

RTOs tend to be described as functions performed to ensure open access and network reliability. However, RTOs are enterprises that perform those functions through clearly defined products and services. For example, the operation of real time and ancillary services markets are very specific services. Other services include a round the clock help desk for market participants, and billing and settlements. Provision of market information and training materials are specific products. The business plan should describe the mix of products and services from the customer's perspective, describing the benefits derived by customers from these offerings.

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IMPORTANCE OF LOCATION

RTOs are highly location sensitive in a number of ways. Core network management must occur at an operations center that has been adapted from an existing control room facility or has been newly constructed. The location must be secured and that often means remote from major urban centers. Tradeoffs between remote locations and urban locations are important considerations given the competition for key people. Satellite offices for regulatory related matters may be required. A separate corporate office may be necessary if key customers are concentrated in a particular urban center relative to core network operations facilities.

The business plan should discuss location needs and the kinds of spaces the enterprise will require. Location tradeoffs should be analyzed and selection criteria explained. Given the early year growth patterns typical of new RTO enterprises, expectations for handling expansion requirements should be included.

MARKETING RELATED CONSIDERATIONS

Marketing is typically not a consideration for functionally oriented RTOs. However, marketing is actually an important part of RTO enterprise management. RTOs are highly service intensive enterprises and dependent for smoothness of operations on satisfaction of stakeholders and customers. It is important that RTOs know their customers —needs, expectations, priorities, mode of operations and interaction. Understanding these factors will enable the RTO to develop an outreach strategy focused on ensuring customer satisfaction.

A marketing plan should be included in the overall business plan. It should discuss customer types and characteristics. RTO products and services should be defined in relation to specific customer needs, expectations, priorities, mode of operations and interaction. Issues of growth in customers and the pattern of growth should be identified and discussed. Matters of regional and super-regional expansion and integration should be discussed. Seams related interaction and their impact on customer services are important considerations for RTOs.

Finally, pricing services is an important element of the marketing plan. While RTOs file Revenue Requirements requests to FERC and have approved tariffs that include pricing terms and conditions, the array of services and the pricing methods are open for consideration. Whether service rates are bundled or unbundled is an important consideration. Unbundling services has implications for price structure and for revenue volatility, as well as for potential to accrue resources to aid in funding system modifications, new system additions, and system replacements.

COMPETITIVE DYNAMICS

RTOs may not directly compete in markets they serve. As a transportation intermediary an RTO's operations facilitate competition in generation markets and in demand-side related markets, e.g., electricity-gas switching, incursion of

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energy services focused on productivity improvements or guaranteed aggregate energy costs. However, RTOs experience competition indirectly by the way they position themselves in supply chains for their own enterprise as well as for sector competition on either end of their processes. An RTO that positions itself as a facilitator of smooth market operations – its own and general sector competition – may define its competitive role quite differently than an RTO that positions itself as exclusively a neutral operator. Positioning as a neutral operator means the enterprise only reacts to events and requests stemming from competitive dynamics on either end of its process stream.

Finally, RTOs may compete (or cooperate) directly with other RTOs where seams exist and must be managed. When market participants can choose to bid their supply for reliability related reasons to more than one RTO, these RTOs essentially compete for assurance that supplies will be available when needed, e.g., at peaks and super-peaks.

An RTO business plan should include a review of competitive dynamics and an articulation of the RTO's position in competitive markets as well as how it is involved in competition – whether directly or indirectly, as a facilitator, a neutral party, or a regulatory force. The following question should be answered in the plan:

1. Who are the five most direct competitors the RTO faces?
2. Who are the principal indirect competitors?
3. Are direct and indirect competitors strong? Expanding? Declining?
4. What lessons can be learned from competitors that may enhance the RTO's services?
5. What are the strengths and weaknesses of direct and indirect competitors compared to the RTO's strengths and weaknesses?
6. How does their mix of products and services compare to those of the RTO?

Pricing Considerations in RTO Business Plans

RTO pricing is principally concerned with revenue recovery that enables the enterprise to cover its costs and fund necessary capital projects year to year. Pricing typically involves developing a Grid Management Charge and fees related to specialized services. For instance, if an RTO provides scheduling services to small market participants that cannot afford to provide their own or cannot cost-effectively outsource this should be separately priced.

Service pricing can be used purposefully. Service pricing can be structured to provide incentives to use particular services. It can be designed to attract demand or discourage demand. It can be organized so that control is in the hands of the RTO or in the hands of neutral market forces, as in the case with congestion management. Therefore, the RTO business plan should explicitly address pricing – what is priced and how it is priced, and why it is priced as it is.

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Unbundling the service mix is often of interest to stakeholders. The pricing discussion should address unbundling. What method for unbundling might be used and what are the tradeoffs among methods? For example functional unbundling will produce a different pricing outcome than customer category tailored unbundling (or repackaging of services to better serve the needs of specific customer types). Given the regulated status of RTOs questions of fairness and equity should be included in the consideration of unbundling methods.

Finally, service pricing should include discussion of how price/quality equivalence for RTOs. In most businesses an explicit tradeoff between price and quality can be made. These tradeoffs are part of strategic moves to position for competition in specific market categories. Since RTOs are obligated by the regulatory compact to provide highest quality of service, largely defined by assurance of network reliability that is equal to or greater than reliability prior to the RTO's formation, these tools are not directly transferable.

The price/quality equivalent for RTOs is price of reliability/customer responsiveness. RTO real time and ancillary services markets, combined with congestion resolution markets, provide market-based costs for reliable open transmission access. These market-based signals provide information that can be used by generators and by buyers to make choices about future investments in plant and equipment. The same information can be used by the RTO for network planning purposes including investment in upgrade of existing capacity or additions of new capacity.

As a transportation intermediary, with a mission primarily defined as maximizing network uptime, market-based costs to ensure reliability sometimes are not enough. The urgency in ensuring uninterrupted service sometimes leads to non-market based actions, such as shedding load to maintain network stability. A central determinant in the effort to ensure uptime at the highest quality is how responsive customers are to price signals or interruption schedules.

RTOs have not typically treated reliability as a variable and correlated uptime to price of service. Pricing methods for RTOs should include consideration of ways to provide incentives to load to be more responsive, or to be more flexible in responding to circumstances that require load shedding.

INFORMATION, REGULATORY RELATIONS AND PUBLIC SERVICE

RTOs must provide information to stakeholders and customers on an ongoing basis. The more transparent information is about market conditions, particularly the value of services as derived from operating bid-based markets for real-time energy, ancillary services and in some cases day-ahead energy, the more responsive markets can be to RTO needs and to the bilateral needs of buyers and sellers.

RTOs must provide information to state and Federal regulators and to various administrative bodies on an ongoing basis. This information is vital to the effective oversight of RTOs and indirectly to the dynamics of bilateral markets.

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Through this information flow regulation of RTOs is more fluid and in principle more adaptive to the unpredictability of continuously operating markets.

RTOs provide a vital public service by helping to ensure that physical delivery of electricity is highly reliable. Only through guaranteeing delivery can financial and derivative markets that help to deepen the hedging of risks that both suppliers and buyers experience develop. The evolution of thicker, deeper electricity markets takes time and requires new understanding by stakeholders and broader constituent groups like elected officials and voters. These important elements of RTO operations require a commitment to ongoing public information and public service activities.

An RTO business plan should include subsidiary plans for information flows to stakeholders, customers and regulators. It should also include broad communications programs that support the public service essentials of an RTO's operations.

Management Plans

RTOs are people intensive enterprises. The people populating them are for the most part technically focused and dedicated to ensuring network reliability. But RTOs, because of their position in the middle of the overall supply chain of the electricity industry, have more sweeping responsibilities that require other types of special knowledge and capability. These include legal, regulatory, financial, trading, economics, planning and public affairs experience.

The RTO business plan should include an assessment of the capabilities that exist and are needed to sustain the operation of the enterprise and enable it to adapt to changes as it evolves. A management development plan should be derived from the analysis of capabilities existing and/or needed. It should address the following:

1. What are the *capabilities* weaknesses of the enterprise and how will they be overcome?
2. What is the make up of the senior management team and what is the specific succession plan for each member?
3. How are duties and responsibilities grouped and why are they so grouped?
4. What are the hiring and training plans of the organization over the next three years?
5. What are the salary, benefit and related compensation programs for the A-C levels of the organization? What special incentives are required to retain or attract specific skill sets?

FINANCIAL PLANNING

An RTO business plan has several financial planning elements that are critical to effective financial management. These include:

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- Analysis of the funds flow patterns related to RTO operation of key reliability sourcing markets, e.g., real time, ancillary services, congestion management, and day-ahead.
- Forecasting of working capital patterns and requirements.
- Analysis of liability exposures in the billing and settlements area and associated hedge costs, e.g., insurance, working capital, other means.
- Structure of long-term financing.
- Use of revolving credit accounts.
- Lease costs of main hardware and software systems and cash flow effects; a “make versus buy” analysis of asset purchases versus asset leasing.
- Cost and value of outsourcing and its effect on overhead costs and annual operating costs.

These elements must be incorporated into a financial model that helps management to forecast and analyze sensitivities in the financial picture. This is increasingly important as RTOs encounter circumstances where their revenue requirements are suddenly reduced, as has happened in the case of the California ISO.

Basic financial statements need to be derived from analysis and background information. A five year forecast is useful with the first three years being more robustly defined compared to the remaining two out-years. Based on this work an annual operating budget is necessary.

Other appropriate analysis should be included. Even though most RTOs are not for profit, it is useful to include a breakeven analysis for the recovery of capital costs, especially absorbed as loans from utilities that worked on developing the RTO before it was an independent institution. This analysis will help the enterprise in planning its out-year capital and other development investments to ensure that credit standards and loan covenants are met.

The financial plan for an RTO should also discuss the accounting and inventory control systems that will be used. In particular, how the accounting systems integrate with billing and settlements is key. In the five year outlook specific questions concerning how the RTO will reduce the billing and settlements cycle time should be included because cycle time is a critical determining factor in long-term and short-term financial requirements. The shorter the cycle time, the lower the overhead costs and in turn, the lower the service costs to customers.

Other analysis that identifies key productivity improvement priorities and their financial benefits should be included in the discussion.

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General Outline of the Business Plan

- I. Overview of Enterprise Strategy
 - A. Purpose
 - B. Goals
 - C. Decision Rules Governing How the Business Will be Developed
 - D. Roles and Responsibilities of Key Management
 - E. Measurements for Tracking Performance
 - F. Controls for Regulating Growth and Hedging Risks
 - G. Incentives for Focusing Performance
 - H. Evaluation Methods and Timing for Ensuring Vision and Mission are Valid
- II. What is the Enterprise?
 - A. Business Definition
 - 1. Functions performed and benefits achieved
 - 2. Customers served
 - 3. Technology used to perform functions and provide benefits
 - B. Market Services Provided by the RTO
 - 1. Market Operations
 - 2. Contracts
 - 3. Training
 - 4. Stakeholder Processes
 - 5. Market Information
 - 6. Billing and Settlements
 - 7. Types of Network Services
 - 8. Market Rules Change Processes and New Service Development
 - C. The Competitive Environment in Which the RTO Operates and Implications for RTO Operations
 - 1. Generation/Supply Competition
 - 2. Demand Market Competition
 - 3. Transmission Network Requirements
 - 4. Supply Chain Dynamics and Effects on RTO Operations and Roles
 - 5. Alternative Technologies and Substitution Dynamics
 - 6. New Entrant Effects
 - D. Operations
 - 1. Real Time
 - 2. Ancillary Services
 - 3. Control Room and Security Coordinator Functions
 - 4. Seams Related Procedures
 - 5. Congestion Management
 - 6. Scheduling and Tagging
 - 7. Billing and Settlements
 - 8. Other Procurements – RMR Contracts
 - 9. Certification
 - 10. Compliance
 - 11. Facilities Management
 - 12. Systems Asset Management

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- 13. Facilities Security and Backup Systems
- 14. Dispute Management
- E. Planning
 - 1. Operational Planning
 - 2. Transmission Planning
 - 3. Capital and Financial Planning
 - 4. Growth Management
 - 5. Infrastructure Planning
- F. Regulatory
 - 1. FERC Related
 - 2. Regional Related, including Seams
 - 3. State Related
 - 4. Administrative Departments and Oversight Agency Related
 - 5. NERC Related
 - 6. Other Federal – DOE, SEC, CFTC
 - 7. Market Monitoring
- G. Staffing and Capabilities
 - 1. Personnel
 - 2. Succession and Development Programs
 - 3. Training
 - 4. Forecasting and Recruiting
- H. Risk and Liability Management
 - 1. Credit Policy
 - 2. Market Surveillance
 - 3. Market Compliance
 - 4. Market and/or Operations Event Occurrence Management
 - 5. Cash Flow Management
 - 6. Disciplinary Procedures
 - 7. Capital Structure
 - 8. Insurance
 - 9. Market Rules
 - 10. Procurement Hedging – e.g., Reserves, Out of Market Calls
- I. Financial Management
 - 1. Balance Sheet
 - 2. Income Statement
 - 3. Asset Performance
 - 4. Cash Flow
 - 5. Working Capital
 - 6. Revenue Requirements
 - 7. Out-Year Forecasting
 - 8. Pricing and Revenue Requirements Effects, including Seams
 - 9. Financial Restructuring Options
- III. Financial Data
 - A. Loans
 - B. Capital equipment and supply list
 - C. Balance sheet
 - D. Breakeven analysis
 - E. Pro-forma income projections (profit & loss statements)
 - 1. Three-year summary

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2. Detail by month, current and next year
 3. Detail by quarters, second and third years
 4. Assumptions upon which projections are based
- F. Pro-forma cash flow
- IV. Supporting Documents
- A. Tax status documentation
 - B. Banking relationships of record
 - C. Inventory of critical contracts and commitments
 - D. Lease or purchase agreement for building space
 - E. Licenses and other legal documents
 - F. Resumes of all Officers
 - G. Letters of intent from vendors and other deals in process

Appendix X:

Defining Sustainable Business Processes and Key Business Fundamentals for RTO Operational Start

1.0 Four Fundamental Elements

1. Value Proposition
2. Management
3. Funding
4. Execution

1.1 Value Proposition

- Definition of franchise: regulated transmission service and system operation for specific facilities over a defined geographic region
- Regulatory approvals that reduce financial risk: tariff, market design, state approvals for recovery of costs
- Allowed returns that enable required investment of capital and resources

1.2 Management and Governance

- Required lines of authority and efficient decision making processes: Board of Directors, CEO and other officers
- Requisite expertise and competencies: selection committees and recruiting firm
- Acceptance of fiduciary, legal and regulatory responsibilities: bylaws and enabling agreements

1.3 Funding

- Access to funds necessary for required capital investments
- Access to working capital

1.4 Execution

- Functional processes that accomplish approved market design/protocols
- Human resources and organization to accomplish work
- Required infrastructure and enabling technology
- Testing and validation
- Training for sustainable operations
- Certifications, licenses and regulatory approvals

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2.0 Business Capability Sequencing of an RTO

An RTO can be developed in Phases. There are no direct comparable examples of phasing in prior ISO implementations to RTO West, however, the Midwest RTO and ERCOT offer examples of phased new implementations.

2.1 Minimum Capability – Phase I

- a.) RTO is the Reliability Authority and provides Security Coordination for its region
- b.) RTO provides one-stop shopping through single OASIS
- c.) RTO provides single ATC/TTC calculation for its region
- d.) RTO establishes and administers an OATT for its region
- e.) RTO provides tagging and scheduling for its region. Scheduling is day-ahead with hour-ahead adjustments. Balanced schedules are required.
- f.) RTO provides balancing through required incremental and decremental bids
- g.) LMP capability installed
- h.) Redispatches system in emergencies
- i.) Ensures generation adequacy (may require installed capacity rules or ICAP market)
- j.) Procures certain ancillary services
- k.) RTO provides single market monitor for its region
- l.) RTO provides central authority for planning and expansion
- m.) RTO provides single settlement and billing for its tariff products and services
- n.) Congestion management handled by voluntary bulletin board or alternative, otherwise TLR
- o.) Administers transmission rights per tariff
- p.) Establishes emergency procedures
- q.) Processes interconnection services in its territory
- r.) Other operations: ratings and operating procedures; planned transmission outage maintenance; generation maintenance coordination
- s.) Provides inter-regional coordination
- t.) Provides dispute resolution

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2.2 Incremental Improvements to Facilitate Further Market Development

Once operations are proven for sustained period of one or two years, RTO then implements incremental improvements to facilitate markets.

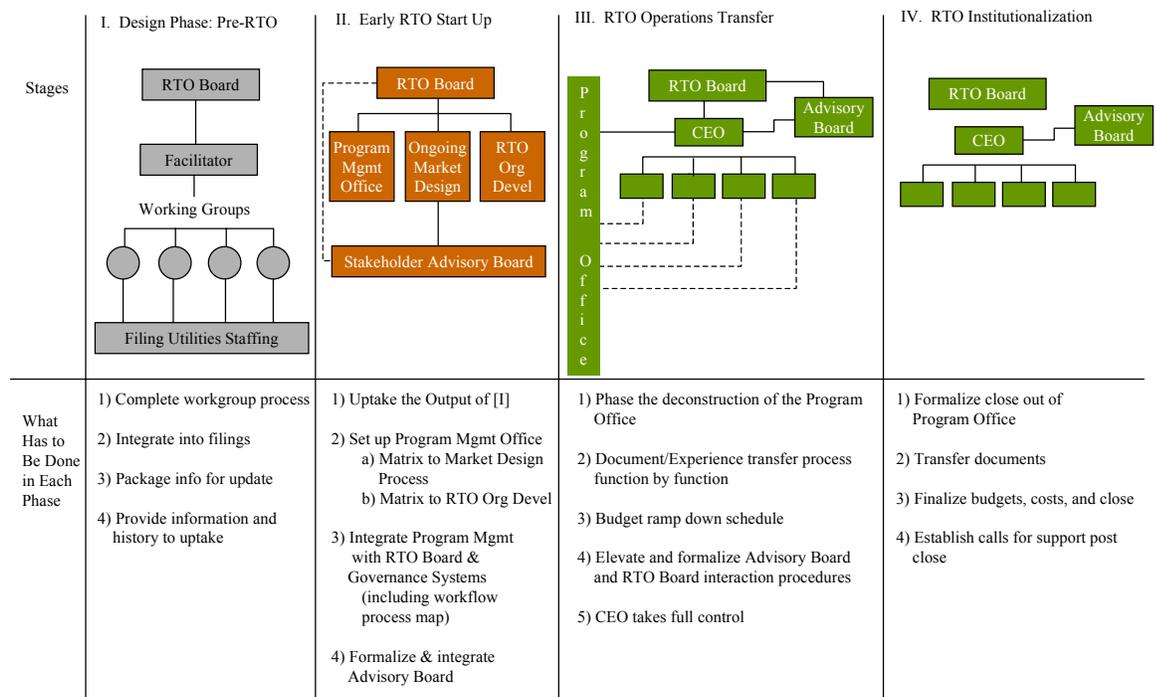
- a.) RTO enables day-ahead market for energy, no balanced schedule requirements
- b.) RTO implements LMP and bid-based security-constrained dispatch for congestion clearing
- c.) RTO provides two-part (day-ahead and real-time) settlements
- d.) RTO implements balancing market
- e.) Addresses impacts of parallel path flows
- f.) Procures ancillary services through bid-based procedures

Appendix XI:

Organization Change Management Issues Concerning RTO Progression from Market Design to Operational Start

The design, development and implementation of ISOs and RTOs typically unfolds in four stages. The chart below summarizes.

Chart A.XI.1 Organizational Development



Stage I: Design Phase: Pre-RTO

The design phase prior to the initiation of an RTO implementation program is a loosely organized period where most output comes from working groups made up of utility staff and sometimes stakeholders. Filings made to FERC in this stage are done by the utilities that will become part of the RTO.

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The organization of Stage I is ad hoc, loosely coordinated, and heavily dependent upon utility support and staffing. In some cases there is a formal coordinating function that helps ensure that working groups stay on a general schedule, principally driven by FERC filing dates.

Stage II: Early RTO Start Up

The second stage in the evolution of an RTO begins when a formal commitment to implementation is made. This sometimes is before independent Boards are in place.

The main elements of this phase are the ongoing market design process of Stage I, somewhat more formalized through the creation of a formal advisory committee to the RTO Board. A program management office is created to direct the multiple paths of RTO development and build out. The initial steps in developing an RTO organization begin including organization design, initial staffing, and development of human resources related information and programs.

Stage II also involves the management of the transition from the first stage. This primarily involves moving a loosely organized stakeholder process into a more formalized one without alienating stakeholders.

Stage III: RTO Operations Transfer

The third stage involves the early development of the permanent staff. This is a more structured transition process where the Program Management Office organizes itself to focus primarily on smoothly transferring responsibilities to permanent staff.

The transition challenge moving from Stage I to Stage II involves a focus on stakeholders and maintaining their confidence. The transition from Stage II to Stage III is well defined but the challenge is managing the tensions that typically arise when new permanent staff take on tasks that up to then were performed by the PMO. Where the Stage I to Stage II goal was to not alienate stakeholders, the Stage II to Stage III goal is for the PMO to not alienate new permanent staff.

Stage IV: RTO Institutionalization

The fourth and final stage in the evolution of an RTO to its fully operational status is the institutionalization process. In this stage the PMO is closed and the involvement of non-employee resources is phased out. At this stage the CEO is in complete charge and the process of developing the institution is fully engaged.

Typically Stage IV is a period of turnover as initial hires and seconded staff that chose to stay on start the self-selection process that leads to substantial employee exits. In some cases the exit percentage has reached 20%.

During this period of staff churning the organization continues to formalize its structure. It reorganizes from its initial quasi-project structure into a professional service bureaucracy. The culture and values of the organization begin to implant themselves. An institutional identity forms.

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Finally, the institution's place in the restructured industry begins to be accepted by market participants. Successful operations performance legitimates the institution. The orientation shifts toward operations improvement, service enhancement, and broader enterprise questions concerning long-term direction. Through these considerations the institution is further rooted and becomes fully self-sustaining.

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Appendix XII:

Inventory of Tasks Planned Before Independence

The following table lists all tasks that are scheduled in the Plan before Independence Day. These tasks are color and pattern coded to reflect whether they are non-binding preparation tasks (green/cross hatch) or tasks with same long-term influence on operations (yellow/horizontal bars). Grey lines are titles or uncoded items.

ID	Task
13	Program Implementation Plan - Management Decisions
14	Should Financial Advisor Develop Options Prior to Independence
15	Should As Is Mapping Be Defined and Initiated
16	Who Should Be Responsible For Executing The Plan
17	Revise Plan to Reflect Management Approach Decision
18	<i>Program Management Implementation Office (PMO)</i>
19	Establish RTO West Development Organization
20	Hire RTO West Development Leader
21	Select RTO West Development Leader
22	Sign Non Disclosure, Insurance Coverage, Employee Agreements
23	Development Leader Staffing Activities
24	Create Initial Project Teams
25	Obtain Support Staff
26	Updating Master Plan and Review
27	Integrating Monthly Decisions on Seams
28	Plan Program
29	Define Program Scope and Expectations
30	Set Up Management Processes
31	Update Program Masterplan
32	Revalidate Existing Plans
33	Detail Out All Steps
34	Prepare Development Budget
35	Approve Plan and Budget
36	Design Program Team Work Structure
37	Mobilize Program
38	Obtain and Deploy All Resources
39	Implement Management Processes
40	Establish Program Management Office
41	Implement Program Team Work Structure
42	Establish Orientation and Training
43	Locate and Occupy Temporary Work Site
44	Select Temporary Work Site

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45	Sign Leases
46	Start Using Temporary Work Site
47	Install PCs, Local LAN and Servers, Internet Access, Security Monitoring
58	<i>Financial/Business</i>
59	Business and Financial Planning
60	Conceptual Business Model/Plan
61	Develop Model/Plan and Options
62	Confirm Directions
63	Financing Options
64	Obtain Advisor
65	Identify Advisory Candidates
66	Interviewing
67	Select and Contract
68	Develop Option Papers
69	Select Financial Model
70	Procurement Model
71	Develop Procurement Options
72	Select Procurement Option
73	Submit and Obtain Board Approvals for Model, Financing and Procurement Track
74	<i>Financing</i>
75	Prepare RFP for Financing
76	Select Financing Agent
77	Identify Advisory Candidates
78	Interviewing
79	Select and Contract
80	Develop Financing Deal
82	<i>Public Information and Communication Program</i>
83	Develop and Approve Plan
84	Establish Regularly Scheduled Meetings
85	<i>Conduct Meetings</i>
132	Develop and Implement Website PR Content
133	Develop and Implement Communications Log and Repository
134	<i>Legal and Regulatory</i>
135	Legal Organization
136	Select RTO West Lead Attorney
137	Develop Communication and Master Plan
138	<i>FERC Filings</i>
139	Stage 2 Filing
140	Submit Stage 2 Filing
141	BC Hydro Non-jurisdictional Stage 2 Filing
142	Submit Stage 2.1 Filing
143	Request For State Panel
144	Process to Resolve Cost Benefit Related Evidence
145	Anticipated Decision Stage 2
146	Rehearing/Clarification/Compliance
147	<i>FERC 205 Filings</i>
148	<i>OATT</i>

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149	OATT Development
150	Draft OATT
151	Incorporate Any NOPR Modifications
152	Review Draft
153	Finalize OATT
154	Submit 205 Filing
155	Anticipated Decision Date
156	<i>Submit 205 Filing Refinements Per Conditional Seams Approvals</i>
158	All Other Seams Changes
159	Rehearing/Clarification on Initial OATT Filing
160	Compliance With Market Design Changes Order By FERC
161	<i>Anticipated FERC Decision on Seams Refinements</i>
163	All Other Seams Changes
164	<i>Protocols</i>
165	<i>Draft All Protocols</i>
166	Scheduling and Bidding
167	Billing
168	A/S
169	ADR
170	Market Monitoring: Data Required
171	Market Power Study, Possible Mitigation
172	Outage Coordination (G&T)
173	Emergency Operations
175	Submit 205 Filing of Protocols
176	Anticipated Decision Date
177	Rehearing/Clarification
178	Compliance with Market Design Changes Ordered by FERC
179	<i>Ongoing Refinements of Protocols</i>
180	Begin Refinements of Protocols
182	<i>205: RTO Costs and Revenue Collection</i>
183	Prepare Cost Estimates
188	<i>205: Filing Utility Revenue Requirements and Asset Transfer</i>
189	Prepare Revenue Requirement for Controlled Assets
190	Submit Filing
194	Submit Any Modifications From Approval of Seams Pricing Agreement
195	Anticipated FERC Approval of Seams Changes
196	Rehearing/Clarification of Seams Changes
197	<i>Other 205 Agreements: Submit Dates</i>
198	POLR for A/S Agreement Development
199	Contract with Pacific NW Security Coordinator
200	Integration Agreement - RTO West Connectees
201	Interoperative Services Agreement
202	Control Area Agreements With Non-members in RTO
203	Control Area Service Agreements For RTO West members
206	<i>FERC 203 Filing</i>
207	TO's Prepare on Transfer of OATT and Existing Obligations
208	Submit Filings

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221	<i>Local Concurrence/Approvals</i>
222	State Approvals
223	Asset Transfer/Conveyance - Functional Control
224	Approval of Past Development Costs (Option Dependent on Financing Options)
225	Approval of Future Development Costs until RTO Financed (Option)
226	<i>BPA Approval</i>
227	Sign NEPA Record of Decision (ROD)
228	Administrative Record of Decision
229	Post for Comment
230	Incorporate Changes
231	Sign ROD
232	<i>Provide Information to Northwest Delegation Consensus</i>
234	Informal Hearings
235	BC Hydro Approval
236	Provincial Approval of BC Hydro Participation
237	<i>Internal Revenue Service</i>
238	Determine IRS Filing Requirements
241	Other Legal Agreements
242	Employee Agreements and Non Disclosure
243	Software Development Contract Development
244	Lease Agreements for AGC Connectivity
245	Data and Document Disclosure Agreements (NDC)
246	Document Access Policy
247	<i>Operations</i>
248	As Is Infrastructure Review/Interface Requirements Definition
249	Assess and Develop Requirements
250	Select Alternative Development Options
251	Develop RFP Shell(s)
252	<i>Seams Dependent Infrastructure Development</i>
253	Complete Specifications
254	Complete Seams Commitments on Scheduling Practices and Data Standards
255	Complete Technical Specifications
256	<i>Select Vendor</i>
257	Issue RFP
265	<i>Seams Independent Infrastructure Development</i>
266	Complete Specifications
267	<i>Select Vendor</i>
268	Vendors Prepare Responses
269	Review and Evaluate Vendor Responses
270	Interview Vendors
271	Site Visits, Reference Checking, Product Testing
272	Sign LOI with Vendor(s)
275	Prototype Workflow Development
276	Prototype Business Process Workflow Development (Organization Middleware)
277	Market Interface Workflows
278	Tariff Administration Workflows
279	Market Monitoring Workflows

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280	Parallel Path Management Workflow (As Appropriate)
281	Congestion Management Workflows
282	System Operations Workflow Development
283	Ancillary Service Workflows
284	Operations Training Workflows
285	Interregional Coordination Workflows
286	Voltage Regulation Workflows
287	Load Forecasting Workflows
288	Generation Planning/Adequacy Workflows
289	Transmission Planning/Adequacy (Next Day) Workflows
290	Dispatch Coordination With Inter- and Intra-Region Control Areas Workflows
291	Security Coordination Workflows
292	Operations Engineering Workflows
293	NERC Reporting Workflows
294	Customer Compliance Monitoring Workflows
295	Generation Outage Coordination Workflows
296	Transmission Outage Coordination Workflows
297	Metering Operations (Includes Data Acquisitions and Aggregation) Workflows
298	Backup Operations/System Restoration/Emergency Management Workflows
299	Market Operations Workflow
300	Tagging & Scheduling Workflows
301	Imbalances Workflows
302	OASIS Workflows
303	TTC/ATC Workflows
304	Transmission Planning and Expansion Workflow
305	Losses Workflows
306	Congestion Management Studies Workflows
307	Expansion Workflows
308	Inter-RTO Seams Collaborations Workflows
358	<i>Administrative and Governance</i>
359	<i>Infrastructure Development</i>
360	Define Suite of Systems
361	Perform Outsourcing Analysis
362	Develop RFP and Specifications
363	<i>Select Vendor(s)</i>
364	Issue RFP
365	Vendors Prepare Responses
366	Review and Evaluate Vendor Responses
367	Interview Vendors
368	Site Visits, Reference Checking, Product Testing
372	Prototype Workflow Development
373	Human Resources
374	Procurement
375	Payroll
376	Finance and Accounting (Including Credit and Collections)
377	Treasury and Cash Management
378	Billing and Settlements

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379	Management Practices and Reporting
380	Legal and Regulatory
381	Internal Audit
382	Media Relations
383	Financial Analysis and Reporting
384	Risk Management
385	FERC and SEC Reporting
386	NERC Reporting
390	<i>Human Capital and Organization Development</i>
391	Organization Design
392	Develop Organization Functional Structures
393	Develop and Conduct Department Design Meetings
394	Validate Department Structures from Design Initiatives
395	Validate/Modify FTE Requirements from Design Initiatives
396	Present Organization Baseline to CEO/Steering Committee
397	Develop Job Descriptions
398	Conduct Job Analysis
399	Identify Performance Dimensions/Competencies
400	Develop Job Descriptions in Standardized Format
401	Confirm Job Descriptions with RTOWest Staff
402	<i>HR Resource Procurement</i>
403	Develop Staffing Master Plan and Policies
404	Identify Which Jobs Need to Be Filled and Timeline
405	Define Policies for Entire Staffing and Selection Process
406	Define Roles in Staffing and Selection Process
407	Develop Job Posting Process
408	Prepare Job Postings
409	Post Jobs Internally and Externally
410	<i>Interview Team Development</i>
411	Develop Interview Guides
412	Create Multi-Company Interview Teams
413	Identify Initial Interviewers & Teams
414	Train Initial Interview Teams
415	Initial Interview Teams Ready To Go
553	HR Strategy Development
554	Create HR Advisory Panel
555	Define HR Policies and Procedures
556	General Company Set-up
557	Payroll
558	Benefits (Retirement, Vacation Policy, Transition of Senior Staff)
559	Performance Management
560	Employee Record Maintenance
561	Compensation
562	<i>Governance Implementation</i>
563	Board of Directors
564	Staffing Support For Board Processes
565	Market Participants Form Voting Groups

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566	Prepare for Elections to Trustee Selection Committee (TSC)
567	Hold Elections for TSC
568	Resolve Any Dispute Regarding Elections for TSC
569	Hire Search Firm
570	Locate and Present List of Board Candidates
571	Board Interviews
572	Hold Elections for Board Candidates
573	Resolve Any Disputes; Resolve and Prepare for Code of Conduct Compliance
574	Offers Made
575	Obtain D&O insurance for Board members
576	Board Assembled
577	<i>CEO</i>
578	Prepare and Present List of CEO Candidates
582	<i>Officers</i>
583	Prepare and Present List of Officers Candidates
587	<i>Stakeholder Process</i>
588	<i>Continue Existing Processes</i>
589	Complete Mar 21, 2002 Filing to FERC
590	<i>Continue Seams Working Groups</i>
591	Decide Funding Level for SSG-WI
592	Decide Who Files SSG-WI Work Product with FERC
593	<i>Decide Types of Filings for SSG-WI Work Product</i>
594	<i>Scheduling/OASIS</i>
595	Committee Recommendation to RTOs
596	RTO Board Decisions: Accept or Reject
597	Develop and Submit to FERC
600	Phase Shifters
601	Committee Recommendation to RTOs
602	RTO Board Decisions: Accept or Reject
603	Develop and Submit to FERC
604	Anticipated FERC Approval (Subject to RTO Change/Acceptance)
605	Rehearing/Clarification
606	Transmission Planning
607	Committee Recommendation to RTOs
608	RTO Board Decisions: Accept or Reject
609	Develop and Submit to FERC
610	Anticipated FERC Approval (Subject to RTO Change/Acceptance)
611	Rehearing/Clarification
612	Congestion
613	Committee Recommendation to RTOs
614	RTO Board Decisions: Accept or Reject
615	Develop and Submit to FERC
616	Anticipated FERC Approval (Subject to RTO Change/Acceptance)
617	Rehearing/Clarification
618	Market Monitoring
619	Committee Recommendation to RTOs
620	RTO Board Decisions: Accept or Reject

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621	Develop and Submit to FERC
622	Anticipated FERC Approval (Subject to RTO Change/Acceptance)
623	Rehearing/Clarification
624	Price Reciprocity
625	Committee Recommendation to RTOs
626	RTO Board Decisions: Accept or Reject
627	Develop and Submit to FERC
628	Anticipated FERC Approval (Subject to RTO Change/Acceptance)
629	Rehearing/Clarification
630	Respond to FERC Orders re: Mar 1 and Mar 21 filings
631	Create Formal Advisory Board Reporting to Governing Board
632	Vote Board Members
633	Seat Board
634	Migrate Existing Processes to Advisory Board Oversight
635	Phase Out Existing Processes
636	Dissolve Working Groups As Tasks End
637	Reorganize Working Groups to Fit Advisory Board Design
638	Transfer Filing Responsibilities to RTO West Legal Counsel
639	Integrate Advisory Board with Governance System
640	Formalize Processes and Procedures with RTO West Governing Board
641	Formalize Rules Process and How Advisory Board Is Involved
642	<i>Facilities</i>
643	Develop Facilities Requirements
644	Real Estate Search
655	<i>Telecommunications</i>
656	Develop Telecommunications Infrastructure Requirements
657	Develop RFP Shell
658	Issue RFP
659	Vendors Prepare Responses
660	Review and Evaluate Vendor Responses
661	Interview Vendors
662	Sign LOI with vendor(s)
663	Negotiate Contracts Including DSOW

Appendix XIII:

Program Implementation Plan - MS Project File CD ROM