

**Staff Report on
Cost Ranges for the Development and Operation
of a Day One Regional Transmission Organization**

Docket No. PL04-16-000



Prepared by the Staff of the
Federal Energy Regulatory Commission

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Executive Summary

This Study is intended to inform the Commission and facilitate discussions with the industry and the states regarding Regional Transmission Organization (RTO) formation. Specifically, the purpose of this Study is to estimate the cost of developing a Day One RTO that provides independent and non-discriminatory transmission service and satisfies the minimum requirements of Order No. 2000 to operate as an RTO. Further, the Study estimates the annual operating expenses necessary to run such an organization. Estimates of the costs of RTO formation vary widely and market participants cite the cost of RTO development as a significant barrier to RTO formation.

The Study did not undertake an analysis of the benefits of RTOs. The benefits of RTOs, such as more efficient dispatch and elimination of redundant functions, have been evaluated in numerous reports. For example, the Department of Energy (DOE) study, completed in April 2003 and summarized in Exhibit 1, found that implementation of the Commission's Standard Market Design through RTOs can provide benefits to the ratepayers of the country.

The analytical base for this Study rests largely on information gleaned from audit staff, FERC Form No. 1 data and interviews with and data responses from existing RTOs and Independent System Operators (ISOs). This approach of examining actual experiences provides valuable insight into the potential cost for an RTO to start-up and provide Day One functions. These functions include open access transmission service, scheduling authority and available transmission capacity (ATC) determination, redispatch for congestion management, ancillary services, planning, parallel path flow mitigation, interregional coordination and market monitoring. The Study assumes that a Day One RTO does not have bid-based, security-constrained economic dispatch, unit commitment, locational prices, financial transmission rights or capacity markets as the Northeast and California ISOs have. Such Day Two functions involve further costs which are beyond the scope of this study.

Each organization's unique circumstances, such as geographic location, market type, roll-out expectations, and software development, created comparability problems. While the development paths and experiences of existing RTOs and ISOs varied significantly and did not provide a basis upon which to make direct comparisons, Staff was able to draw upon these experiences. The Study found some patterns that provide an indication of expected investment costs and annual operating expenses. The Study concludes with an estimated range of expected investment costs and related annual expenses. These estimates can help focus future discussions regarding the cost of developing an RTO. Unlike other studies that combine investment costs and annual operating expenses, this Study separates these two elements so market participants, customers and regulators can more readily focus on the potential rate impact.

Staff made the following key findings from this Study:

➤ **The direct impact of a new Day One RTO should be less than one-half of one percent of a retail customer's bill.** Staff calculations show that the average annual operating expense of a new Day One RTO would impact the average retail customer by approximately 0.02¢/KWh, or less than 0.3% of the customer's total bill. This represents a charge of \$2.31 per year for a typical residential consumer, or \$0.19 per month. Staff expects these direct costs would be offset by a reduction in costs by transmission owners in the region over time. In addition, these costs would also likely be offset by efficiencies in grid and market operations; however, this study did not evaluate those benefits. Staff anticipates that by employing a lessons learned approach, a new organization should be at the lower end of the cost range, producing a relatively small impact on customers, which should not be an impediment to RTO formation.

➤ **To date, Day One RTOs have required an investment outlay of between \$38 million and \$117 million and an annual revenue requirement of between \$35 million and \$78 million.** Staff believes an organization beginning today and taking a lessons learned approach from previously formed organizations will experience costs at the lower end of the investment cost range, and likely incur costs in the range of approximately \$50 to \$70 million in investment and operating costs of \$50 to \$70 million. This amount of investment should provide the independent organization with hardware and fully operational software to calculate ATC and schedule transmission through a centralized control center. The annual expense would provide for staffing and operations and maintenance costs sufficient to run and manage the organization. Further, these expense estimates would provide sufficient income to allow the RTO to cover its debt service, through depreciation and interest expenses. The organization would participate with the local transmission owners in regional planning and would maintain NERC reliability requirements.

➤ **Many of the costs are for reliability-related functions.** The Day One functions listed above—transmission service, scheduling authority and available transmission capacity (ATC) determination, redispatch for congestion management, ancillary services, planning, parallel path flow mitigation, interregional coordination and market monitoring—are, with the exception of market monitoring, related to reliability as much as they are to markets. We note that performing such functions on a regional basis is likely to bring reliability benefits; however, measuring such benefits is beyond the scope of this study.

➤ **Cost overruns can result from changing plans mid-course, poor project management and extensive delays.** In interviews with RTO managers, several expressed that they experienced cost overruns due to incomplete planning of their

ultimate software goals, which resulted in continued—and costly—changes to the software design. A consultant noted that in today’s market one should be able to use off-the-shelf products (with some modification) and the experience of other RTOs to reduce the probability and extent of cost overruns.

➤ **Cost data are not accounted for in a standardized way.** Each organization used Generally Accepted Accounting Principles, but reported investment costs and annual expenses differently. That is, while one organization directly assigned costs to a particular cost element or operational function, another respondent showed no such cost element or operational function. The Uniform System of Accounts, designed for the traditional vertically-integrated utility, is not always aligned with the functions of an ISO or RTO. Staff recommends review of the reporting requirements and possible standardization to facilitate cost oversight by the public and the Commission.

Comments concerning this report may be filed in Docket No. PL04-16-000.

For information about this report please contact:

Robert Petrocelli (202) 502-8447

Christopher Thomas (202) 502-8412

Katherine Gensler (202) 502-6785

I.	Purpose	- 1 -
II.	Introduction and Background	- 1 -
III.	Creating the Day One Regional Transmission Organization	- 2 -
	(A) Identification of the Minimum Functions Required for a Day One Regional Transmission Organization.....	- 3 -
	Transmission Service Provider.....	- 5 -
	Reliability Authority.....	- 5 -
	Support Functions.....	- 6 -
	Transmission Support.....	- 6 -
	Management	- 6 -
	(B) Representative Study Group	- 6 -
	(C) Development of Investment Costs	- 8 -
	PJM Interconnection.....	- 8 -
	Midwest Independent Transmission System Operator.....	- 10 -
	Electric Reliability Council of Texas	- 11 -
	Southwest Power Pool.....	- 12 -
	(D) Development of Annual Operating Expenses.....	- 13 -
	PJM Interconnection.....	- 14 -
	Midwest Independent Transmission System Operator.....	- 15 -
	Electric Reliability Council of Texas	- 17 -
	Southwest Power Pool.....	- 18 -
IV.	Results	- 19 -
V.	Start-up Cost Conclusions	- 22 -
	Comparisons	- 22 -
	Impact.....	- 24 -
	Conclusion.....	- 25 -
VI.	Study Insights	- 26 -

Exhibits

1	Summary of Benefits Claimed in RTO Studies
2	NERC Functional Model Chart
3	Cost Summary and Staff Workpapers
4	Respondents' Raw Data
5	RTO Interest Rate Workpapers
6	Excerpt from RTO-West Cost-Benefit Study
	Summary of Cost-Benefit Studies Performed in Select Regions

I. Purpose

This Study is intended to inform the Commission and facilitate discussions with the industry and the states regarding Regional Transmission Organization (RTO) formation. Specifically, the purpose of this Study was to estimate the cost of developing a Day One RTO that provides independent and non-discriminatory transmission service in accordance with Order No. 2000. The purpose was not to detail the particular costs of any RTO, nor is this Study a tool for auditing existing RTOs and Independent System Operators (ISOs) (collectively, regional transmission providers) from which data were collected. Rather, this analysis is a review of the start-up experiences and costs of currently operating regional transmission providers, which may be used as a starting point for discussions regarding the initial cost of creating an RTO. This Study focuses on asset investment costs and annual operating expenses; unless otherwise noted, it does not consider expenses borne by utilities to form the RTO (sunk costs). This Study also does not consider the benefits of RTO formation; such analysis has been presented in numerous reports.¹

II. Introduction and Background

In 1996, the Commission issued Order No. 888, which required, as a remedy for undue discrimination, that all public utilities provide open access transmission.² In 1999, the Commission issued Order No. 2000.³ The Commission's objective was "for all transmission owning entities in the Nation, including non-public utility entities, to place their transmission facilities under the control of appropriate regional transmission institutions [RTOs] in a timely manner." Order No. 888 and Order No. 2000 set the foundation upon which to build regional transmission institutions and competitive

¹ See Exhibit 1 for a summary of the benefits claimed in various RTO studies.

² Promoting Wholesale Competition Through Open Access Non-discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities, Order No. 888, 61 Fed. Reg. 21,540 (May 10, 1996), FERC Stats. & Regs. P 31,036 (1996), *order on reh'g*, Order No. 888-A, 62 Fed. Reg. 12,274 (March 14, 1997), FERC Stats. & Regs. P 31,048 (1997), *order on reh'g*, Order No. 888-B, 81 FERC ¶ 61,248 (1997), *order on reh'g*, Order No. 888-C, 82 FERC ¶ 61,046 (1998), *aff'd in relevant part sub nom.* Transmission Access Policy Study Group, *et al.* v. FERC, 225 F.3d 667 (D.C. Cir. 2000), *aff'd sub nom.* New York v. FERC, 535 U.S. 1 (2002).

³ Regional Transmission Organizations, Order No. 2000, 65 Fed. Reg. 809 (January 6, 2000), FERC Stats. & Regs., ¶ 31,089 (1999), *order on reh'g*, Order No. 2000-A, 65 Fed. Reg. 12,088 (March 8, 2000), FERC Stats. & Regs. ¶ 31,092 (2000), *affirmed sub nom.* Public Utility District No. 1 of Snohomish County, Washington, *et al.* v. FERC, 272 F.3d 607 (D.C. Cir. 2001).

electricity markets. To date, there are several operational RTOs, with additional regions expecting RTO operations in the near future.

While significant progress has been made in developing ISOs and RTOs, certain regions of the country remain concerned that the Commission's RTO policies are too prescriptive in substance and in implementation timetable, and do not sufficiently accommodate regional differences. In response, the Commission has stated that it would consider phased-in implementation and sequencing tailored to each region that allows modifications to benefit customers in each region. As a result, several sponsors of regional organizations in the formative stage have now adopted strategies to develop RTOs with only those characteristics and functions that provide a benefit to their respective regions. For example, during a September 24, 2003 Commission-sponsored meeting in Phoenix, Arizona, the sponsors of the WestConnect RTO, LLC proposal informed the attendees that they intend to institute a phased approach to development of WestConnect. The sponsors claimed the cost of starting a fully functional RTO was not comparable to the benefits that such an organization would bring to the Southwest.

Based on the Phoenix meeting, Commission Staff undertook an effort to better understand the cost elements associated with independent control of the regional transmission grid for the non-discriminatory and transparent provision of transmission service, *i.e.*, a Day One Regional Transmission Organization. This report seeks to identify the cost of establishing and operating a Day One RTO.

III. Creating the Day One Regional Transmission Organization

To establish cost estimates for the development of a Day One RTO, Staff undertook the following process:

- (A) Identification of the minimum functions necessary to provide independent, non-discriminatory transmission service;
- (B) Identification of a representative group of existing and emerging ISOs and RTOs for study to inform the cost estimates for each function;
- (C) Development of the representative investment and annual operating expense estimates; and
- (D) Comparisons to the Day One RTO of the costs associated with similar functions of existing ISOs and RTOs.

During this process, Staff collected data through informal discussions with representatives from the industry, annual reports, FERC Form No. 1, and the Commission's audit staff.

(A) Identification of the Minimum Functions Required for a Day One Regional Transmission Organization

Through several orders, the Commission has concluded that certain limited functions provide a suitable beginning that allows a proposed RTO to have a sufficient level of market independence and operational authority to qualify for RTO status.⁴ The Commission’s findings in these orders repeatedly focused on the notion of functional authority over the operations of the transmission grid, independent from market participants, with oversight responsibilities that are intended to remove any barriers to non-discriminatory practices and create robust competition.

Order No. 2000 specified eight functions for RTOs: tariff administration and design, congestion management, parallel path flow, ancillary services, OASIS, market monitoring, planning and expansion, and interregional coordination. The difference between the minimal requirements to operate an RTO and the more complex functions currently performed by, for example, Northeastern ISOs and RTOs is referred to as “Day One” versus “Day Two” RTO functionality.

Figure 1

Figure 1 shows the minimum functions of a Day One RTO, as spelled out in Order No. 2000. To operate as an RTO, the Day One entity must meet the minimum requirements of Order No. 2000, but such operation may not include market-based mechanisms for congestion management or the operation of energy markets. A fully functional RTO (or Day Two RTO) will carry out all of the functions to a greater extent, employing market-based mechanisms, and include additional functions.⁵ Staff notes that “Pre-Day One” organizations perform only regional OASIS functions, without actually controlling the transmission facilities. ERCOT, for example, initially operated in this manner.

	Pre-Day One	Day One	Day Two
Tariff Administration & Design		X	X
Congestion Management			
Redispatch		X	
Market-Based			X
Parallel Path Flow		X	X
Ancillary Services		X	X
OASIS	X	X	X
Market Monitoring		X	X
Transmission Planning		X	X
Interregional Coordination		X	X
Day-Ahead Energy Market			X
Same-Day Energy Market			X
Ancillary Services Market			X
Capacity Market			X

⁴ See, e.g., Arizona Public Service Company, *et al.*, 101 FERC ¶ 61,033 (2002); Avista Corp., *et al.*, 100 FERC ¶ 61,274 (2002); and Southwest Power Pool, Inc., 106 FERC ¶ 61,110 (February 10, 2004).

⁵ It should be noted that functions such as operating ancillary services and capacity markets are optional programs that some existing RTOs, such as ISO-NE, have chosen to perform.

While Order No. 2000 put forth eight minimum functions that an RTO must perform, some of these functions are unlikely to be fully performed by a Day One RTO. For example, market monitoring takes place on a smaller scale for Day One operations than under the Day Two scheme. Similarly, the Day One RTO will initially have a role in transmission planning, but only at the Day Two point will the RTO become fully responsible for planning. Finally, the extent of congestion management differs between Day One and Day Two entities. The Commission has ruled that full market-based congestion management does not have to be performed when RTO operations commence.⁶ The variation in performing these functions has a direct effect on the resources devoted to them. This Study attempts to capture only those resources that have been classified as Day One functions. This Study does not consider the resources associated with retail access programs. State legislated retail access or retail choice programs are not a requirement of Order No. 2000. While these programs are created by the states, and implemented by the RTO, such programs are considered voluntary, under a Day One or a Day Two RTO.

In order to use information as provided by RTOs and ISOs, Staff organized the cost data into consistent functions. For this, Staff found it useful to rely on the North American Electric Reliability Council (NERC) functional model.⁷ The advent of open-access transmission service and the evolution of competitive markets and new entrants prompted NERC to re-evaluate the functions performed by the traditional control area operator. NERC issued a schematic of functions that can be applied across regions and across different regulatory and institutional structures. This model defines the core functions of control area operators and assigns responsibility for maintaining reliability. It also explains the relationship between and among the entities responsible for performing the tasks within each function. FERC has encouraged the use of the NERC functional model in its RTO policy in order to clarify responsibilities between transmission owners and RTOs/ISOs.⁸

Staff determined the following NERC functions necessary to satisfy the Commission's requirements for becoming an operational RTO: Transmission Service Provider and Reliability Authority. In addition, a transmission support function and organizational management are necessary to develop an adequate framework for the Day One RTO. Finally, the Day One RTO should be responsible for the regional oversight of transmission planning. While not necessarily performing the planning function, oversight

⁶ See Arizona Public Service Company, *supra* note 5; Midwest Independent Transmission System Operator, Inc., 97 FERC ¶ 61,326 (December 20, 2001).

⁷ See Exhibit 2 for a graphic representation.

⁸ See Midwest Independent Transmission System Operator, Inc., 105 FERC ¶ 61,145 (October 29, 2003) and Southwest Power Pool, Inc., 106 FERC ¶ 61,110 (February 10, 2004).

authority and the ability to review expansion is critical for regional reliability.

Transmission Service Provider

The Transmission Service Provider administers the transmission tariff and provides transmission services to qualified market participants. The tasks involved include receiving and processing transmission service requests; maintaining a commercial interface for receiving and confirming such requests (*i.e.*, an open access same-time information system or OASIS); approving or denying transmission service requests; approving interchange transactions; determining and posting available transmission capacity (ATC) values; and allocating transmission losses among the users. The analysis assumes that the RTO will facilitate provision of ancillary services so transmission customers will have a one-stop shop from which to obtain the necessary ancillary services from the underlying transmission and generation owners.⁹

The Transmission Service Provider will perform OASIS and tariff administration and design functions in accordance with Order No. 2000. Market monitoring also falls under the purview of the Transmission Service Provider.

Reliability Authority

The Reliability Authority, as defined in the NERC model, ensures the real-time operating reliability of the interconnected bulk electric transmission systems within a Reliability Authority Area.¹⁰ Activities include, but are not limited to: (1) enforcement of operational reliability requirements; (2) monitoring of all reliability-related parameters within the Reliability Authority Area, including generation dispatch and transmission maintenance; (3) revision authority for transmission and generation maintenance plans; (4) development and enforcement of interconnection reliability operating limits to protect against instability and cascading outages; (5) approval/denial authority over bilateral schedules from a reliability perspective; and (6) direction of emergency procedures and system restoration.

⁹ The NERC Reliability Function Model includes other responsibilities, including a Balancing Authority, which has the responsibility to maintain load-interchange-generation balance within its area of responsibility. Many of the authorities for this function are served through the provision of ancillary services under an Open Access Transmission Tariff (OATT).

¹⁰ A Reliability Authority Area is the collection of generation, transmission and loads within the boundaries of the Reliability Authority. This boundary coincides with one or more Balancing Authority Areas, which are the areas in which a controlling Organization maintains a load-resource balance.

To perform these duties, the Transmission Service Provider needs to communicate with market participants, generators, transmission owners and operators and distribution owners. This communication often requires hardware and software interconnectivity to achieve the real-time monitoring and actions necessary to maintain the reliable operation of the grid. These systems are often embodied in energy management (EMS) and Supervisory Control and Data Acquisition (SCADA) systems.¹¹

The RTO will perform other reliability-related Day One functions as described in Order No. 2000. These functions include congestion management, parallel path flow, ancillary services, transmission planning and interregional coordination.

Support Functions

While the NERC Model was used to determine the necessary operational functions of an RTO, Staff determined that additional cost centers were needed to capture the required administrative functions of a Day One RTO. Accordingly, two additional cost categories were included in the analysis—Transmission Support and Management.

Transmission Support

Transmission Support function, as Staff has defined it, includes the systems (hardware and software) and other necessary capital assets for the settlements and billing, and customer service operations. This list, while not exhaustive, best reflects the support services necessary in the provision of transmission service.

Management

The second support function is the day-to-day management of the transmission organization. The services included in this function include human resources, finance, administrative support, and building operations. Accordingly, the systems (*e.g.*, executive and decision support systems and general web service), furniture, and related assets were included in the Day One operations.

(B) Representative Study Group

After Staff determined the functions necessary for a Day One RTO, investment

¹¹ EMS systems, often characterized as the communication system with the generators and their operation, are typically embodied in a SCADA system, which, while collecting generator and transmission flow data, also can monitor and collect data on discrete facilities (breakers, lines, generator nodes, etc.) for purposes of monitoring the grid.

and expense profiles were developed. Staff reviewed the operations of existing ISOs and RTOs to determine a representative group for a Day One RTO. With the exception of the PJM Interconnection, LLC (PJM), Staff excluded ISOs and RTOs that developed from a tight power pool. As a result, the Midwest Independent Transmission System Operator (Midwest ISO), the Electric Reliability Council of Texas (ERCOT), the Southwest Power Pool (SPP), and PJM were selected for study.¹² This review did not select the Northeast entities (ISO-New England and New York ISO) or the California Independent System Operator, Inc. (CAISO) as representative examples.¹³ These entities, among other things, began operations with full Day Two market functions. As such, their costs were not representative of Day One RTO costs.

SPP is unique in this analysis, and the results for it should be interpreted accordingly. At the time of this Study, SPP had only been granted conditional RTO status.¹⁴ The costs and expenses reflected in this Study are accurate for the services SPP currently provides, but are not necessarily reflective of a fully operational Day One RTO. For example, one of the functions of a Day One RTO is market monitoring, but funds for an independent market monitor are not included in SPP's budget. In contrast, SPP has been able to draw on the formation and operating experience of other RTOs, reducing the outlay required for start-up.

Information sources utilized in the Study include industry interviews, industry submissions, FERC Form No. 1 documents, and data from Commission audit staff. The ISO and RTO cost submissions were derived from actual and budgeted costs, and were developed in summary format in an effort to respond to the scope of this Study; they do not represent actual current revenue requirements. The information, in some instances, was purported to be illustrative of what each entity believed it would cost to replicate and administer its organization. Some actual data from a specific reporting period, indicated as representative of the Day One operations defined in this Study, was also submitted. Each entity denoted the specific time frame in its development that is representative of Day One RTO functions. For example, the Midwest ISO and ERCOT identified end-of-year 2002 numbers as the best representation of their Day One costs and expenses.

¹² While it is recognized that the PJM area operated as an experienced power pool, the detailed data provided by PJM staff allowed for analysis, assignment and inclusion of PJM costs in the development of a Day One RTO.

¹³ A cursory review of the data from the NYISO and ISO-NE indicated that, because they evolved out of tight power pools, were not representative of the Day One RTO development this Study attempts to capture. Review of the CAISO financial data indicated that it would not lend itself to identification of the Day One functionality with reasonable results.

¹⁴ Southwest Power Pool, Inc., *supra*, note 8. *See also* Southwest Power Pool, Inc., 108 FERC ¶ 61,003 (July 2, 2004).

Staff organized the supplied cost data and information into the NERC functions based upon (1) the entities' own description of costs, (2) cost element descriptions, (3) RTO/ISO allocations to cost categories, and (4) Staff's analysis and allocation of supplied costs.¹⁵ This last step was necessary because the existing RTOs and ISOs do not maintain standard accounting practices similar to each other and do not have a Uniform System of Accounts tailored to their accounting needs and business structure.¹⁶

(C) Development of Investment Costs

The following describes the methodology employed by Staff to develop investment cost figures. The essence of the analysis was to take the facilities provided within the company's definitions of accounts and to, where possible, directly align these costs with Day One functions and otherwise allocate the facilities using a direct labor ratio.

Staff's Study does not include previously-incurred sunk costs as a part of the RTO's cost. Those costs are being recovered, at least partially, by the current transmission companies. Staff considered only the actual assets to be purchased by the RTO, such as hardware, building, etc. These assets of the new organization would likely require capital investment by the founding group and such costs would be recovered through rates established by the RTO. Other industry studies have used different assumptions. For example, in its initial overview of start-up costs, WestConnect's first study combined these investment costs and expenses, and then added substantial cash reserve allowances, sunk costs and past consultant fees.

PJM Interconnection

The data from PJM was the most comprehensive data received and represents the accumulation of facilities placed in service through the year 2000. While PJM represents a Day Two RTO, the data utilized in this analysis allowed Staff to closely represent the same functionality as a Day One RTO.

PJM provided summary data itemizing its investment costs, organized by service schedules under its tariff.¹⁷ PJM allocated the costs of its facilities to the functions embodied by the report to its Administrative Cost Recovery service schedule (Schedule 9 to the PJM Tariff). The PJM Administrative Cost Recovery service schedule is separated

¹⁵ Staff performed some allocations based upon general ratemaking principles, *e.g.*, direct labor ratios.

¹⁶ Currently the Uniform System of Accounts is designed for vertically-integrated utilities.

¹⁷ The PJM summary data is included as Exhibit 3 at page 2.

into six separate schedules: (1) Control Area Services Administration; (2) Fixed Transmission Rights Services; (3) Market Support Services; (4) Regulation and Frequency Response; (5) Capacity Resource and Obligation Management; and (6) Management Services. Staff used PJM's definitions of cost categories as a basis for determining which costs would be necessary for minimum functionality.

Using these six schedules and PJM's description for the types of activities (and hence costs) included in each schedule, Staff aligned, to the extent possible, these service schedules and costs with the relevant Day One categories, *i.e.*, Control Area Administration, Market Support Service, and Management Services. For example, PJM defines the Control Area Services as comprising all activities associated with preserving the reliability of the PJM bulk power system and providing point-to-point and network transmission service. Cost items in this service category include OASIS, calculation of ATC, real-time transmission monitoring, transmission service requests, EMS and reliability reporting. Most of these costs have been allocated to the Transmission Service Provider function, but such cost items do have relation to the Reliability Authority function. The costs that are clearly identifiable as pertaining to enhancing reliability are accounted for entirely in the Reliability Authority function.

PJM's Market Support Service encompasses activities which support PJM market operations, including scheduling functions, market settlements and billing, and market monitoring functions. Many of the functions included in this cost category do not pertain to a Day One, minimum functionality approach. However, costs related to EMS, OASIS, and generator communications do support minimum functionality. Thus, the costs for these discrete facilities are included as the Transmission Support function.

PJM's Management Services cost function comprises all administrative and management cost elements that support all the services PJM provides. Cost items such as the PJM information warehouse, internet network architecture, and enterprise security are attributable to this function, and were included as costs of Management of the RTO.

Finally, in order to present a figure that reflects the cost of PJM's building to house the facilities, Staff used the value, as provided for in the 2002 PJM Annual Report, for the cost of the buildings owned by PJM participants and turned over to the PJM for use. The 2002 annual report notes that two buildings had an original cost of \$2.9 million and \$4.8 million, respectively. Further, one of the buildings underwent \$2.9 million in renovations before PJM took residence.¹⁸ PJM also identified control center infrastructure costs as building upgrades. Therefore, the analysis has estimated the total value of these buildings at \$11 million.¹⁹

¹⁸ PJM 2002 Annual Report, Notes to Consolidated Financial Statements, Note 10.

¹⁹ While the simple purchase cost by PJM participants was used, the present value

In conclusion, the analysis of PJM facilities resulted in the following estimated investment cost for minimum Day One operations: Transmission Service Provider - \$35 million; Transmission Support - \$15.5 million; Reliability Authority - \$1.3 million; and Management - \$6.7 million. Combined with the building cost estimate of \$11 million, total Day One costs estimated from PJM approximate \$69.6 million.

Midwest Independent Transmission System Operator

The Midwest ISO maintains its accounts in the form prescribed by the Commission's Uniform System of Accounts. Accordingly, the Midwest ISO records its physical plant assets by FERC account number. Since the Midwest ISO does not own production or distribution facilities, all of its facilities costs are reflected in Transmission Plant Accounts as structures and station equipment (Account Nos. 352 and 353) and in General Plant (Account Nos. 389, 390, 391, 397 and 398).

The Midwest ISO asserted that all costs from calendar year 2002 represent an accurate description of its Day One functionality; as those costs were incurred from the form under which the Midwest ISO commenced operations on February 1, 2002. Each of the separate physical asset accounts was reviewed in order to determine the most suitable NERC Functional Category to be assigned. For example, Midwest ISO Account No. 35303 – Computer Software-Transmission, is booked as transmission station equipment. Thus, there is no need to allocate any of this software to the management function.²⁰

While certain assets were directly assigned to functions, others were not.²¹ Staff developed an allocator to assign costs across all functions based on selection and assignment of 187 of the 227 FTEs for Day One operations. Of the 187, 55% were allocated to the Transmission Service Provider, 28% to Transmission Support, 10% to the Reliability Authority, and 7% to Management. This allocation allows the accounts that contain the general facilities for the use of all employees, including those identified as serving the Transmission Service Provider function to be spread over all the functions. Conversely, similar to the direct transmission assets, the computer hardware and software and communication equipment booked to the General Plant accounts were exclusively allocated to the Management function. This was done because the Transmission Plant accounts already included specific telecommunication equipment and computer systems. These General Plant systems are assumed to incorporate such systems as the finance, human resource, and corporate inter- and intranet systems.

of the effective rent to PJM of \$1.6 million per year over twenty years, discounted at a rate of 10% results in a present value of approximately \$13.6 million.

²⁰ See Exhibit 3, p. 7, Midwest ISO Assets.

²¹ For example, Account No. 39100 – Office Furniture and Fixtures-General was booked as general plant.

Finally, the Midwest ISO buildings are booked separately to General Plant Account No. 39011 – Buildings-General Leased. The building costs are reflected separately from all other allocated costs in this analysis. The building cost to house the allocated facilities is \$15.8 million.²²

The analysis of the Midwest ISO facilities results in the following estimated cost for Day One operations: Transmission Service Provider - \$55.4 million; Transmission Support - \$29 million; Reliability Authority - \$10 million; and, Management - \$7 million. Combined with the estimate of the building required to house the necessary facilities of \$15.8 million, total investment costs from analyzing the Midwest ISO are approximately \$117 million.

Electric Reliability Council of Texas

Unlike the accounting by PJM and the Midwest ISO, ERCOT data did not provide a high level of detail in the description of capital assets. As with the Midwest ISO, the most reasonable allocation methodology employed for this analysis was a direct labor allocation.²³

Using data from 2002 as the most representative of Day One operations, Staff reviewed, selected and assigned a portion of ERCOT's full-time employees to the Transmission Service Provider, Transmission Support, Reliability Authority, and Management functions. Through this review, 188 of ERCOT's 296 full-time employees (or 64%), based upon end-of-year 2002, were selected as necessary for minimum functionality. Of the 188, 60% were assigned to the Transmission Service Provider function, 18% to the Transmission Support function, 5% to the Reliability Authority function, and 17% to the Management function.

These same labor ratios were used to apportion investment costs for Day One functions. Unlike the Midwest ISO, the ERCOT data did not allow for allocation of certain identified costs by discrete labor ratios. Rather, because ERCOT only provided the overall assets in five general categories,²⁴ the costs in each category were allocated across all functions, with the exception of IT equipment and software. Supplementary information provided by ERCOT noted \$410,000 in computer hardware and software related to the management of the RTO.²⁵ Thus, Staff allocated the major IT systems

²² The \$15.8 million is the present value of the lease.

²³ See Exhibit 3, p. 12, ERCOT 2002 FTEs.

²⁴ The categories are Computer Equipment and Software, Buildings and Leasehold, Furniture and Fixtures, Land and Improvements, and Vehicles.

²⁵ Staff did not include IT systems that were in development.

across Transmission Service Provider, Transmission Support and Reliability Authority, and directly assigned the \$410,000 to the Management function. As a result, the analysis of the ERCOT facilities results in the following estimated cost for Day One operations: Transmission Service Provider - \$59.7 million; Transmission Support - \$18 million; Reliability Authority - \$4.5 million; and Management - \$1 million.

Finally, ERCOT data reflects total Buildings and Leasehold assets of \$48.9 million for the year ending 2002. Through application of the fully allocated labor ratio, approximately \$31 million of the cost of the buildings is representative to house the minimum functionality.²⁶ Combined with the estimates of the four functions, total investment costs from analyzing ERCOT is estimated at \$114 million.

Southwest Power Pool

SPP provided an assignment of costs and expenses to the defined functions, which allowed Staff to reflect the data in two ways: SPP fully allocated and SPP without an imbalance market.

In 2000, SPP started developing a system for commercial and market operations. The market project was put on hold while SPP pursued its merger with the Midwest ISO. In March 2003, the merger plans were terminated and SPP resumed plans to implement market operations. The 2003 cost data that was used for SPP includes the first phase of its market operations implementation: real-time balancing market with market power mitigation and market monitoring. Because this project seeks to define the cost of minimum Day One functions, Staff included SPP's costs both with and without the new market operations (market operations as defined by SPP include a real time imbalance markets).

SPP data indicates the following necessary costs for minimum functionality: \$22.3 million for Transmission Service Provider; \$3 million for Transmission Support; \$5.6 million for Reliability Authority; and, \$2.3 million for Management. In order to account for facilities to house the minimum operations, Staff approximated the lease costs for SPP out ten years by increasing its 2003 lease amount by 3% per year; a figure to account for inflation. Staff then discounted the lease payments on a net present value basis in order to approximate the cost of the SPP building. In doing so, Staff arrived at an estimated building cost of \$5.1 million.

Staff developed two estimates of SPP's costs—one that is near Day One functionality and one that is a pre-Day One entity. The Day One version includes SPP's

²⁶ In contrast to the other RTOs, ERCOT's building was constructed predicated on the functions it was required to provide by legislation.

new market operations systems costs, resulting in a total estimate of \$38.3 million. By removing SPP's market operations systems costs of \$20.8 million, Staff is better able to create a cost estimate of minimum functionality. Excluding the market system costs estimates a start-up cost of \$17.5 million. However, it was decided that this functionality would not be sufficient to represent the needs of a Day One RTO. SPP's market implementation is assumed to include the necessary hardware and software for sufficient grid monitoring and generator communication needed to fulfill the Reliability Authority function. Thus, it was determined that \$17.5 million (which excludes SPP's market system) is more representative of a pre-Day One organization.

(D) Development of Annual Operating Expenses

The annual expense for a Day One RTO depicted by this Study is formulated much like a cost of service. Included in the annual expenses are debt service, operations and maintenance (O&M) and labor costs, taxes other than income taxes, and depreciation expense. The following assumptions were made:

1. Debt-only financing; thus no equity return is included.
2. Consistent with accounting practice, straight line depreciation rates of three years for non-EMS software, five years for non-EMS hardware, seven years for EMS systems, and fifteen years for buildings, related chattels and office equipment. Lease options were not evaluated.
3. Income taxes were assumed to be zero because the RTO would likely be a non-profit entity. Taxes other than income (property and local) were included where identified.
4. Fully loaded labor costs (including pension and benefits, Federal Insurance Contributions Act (FICA) taxes and unemployment taxes) were used based upon the assumed amount of labor required to staff the organization.
5. Operation and maintenance expenses were included for the assets selected.
6. Interest expense was imputed to recover the interest portion of the debt services, while the depreciation covered the principal.²⁷

The Study did not include expenses incurred by utilities or the RTO during pre-operating stages. While some RTOs financed start-up activities and currently amortize such costs, they usually are recovered over a finite period. For example, the Midwest ISO secured a debt issuance to fund development activities, including labor and consulting expenses, rather than have the participating transmission owners fund those activities directly. As a result, Midwest ISO accounts for those expenditures on its

²⁷ Staff analyzed the debt costs of the representative group and the utility industry and concluded that a range of debt costs from 6.5% to 7.5% was reasonable. (See Exhibit 5.)

balance sheet and amortizes the amount over seven years. Since this Study is intended to focus on the actual investment necessary for Day One operations, pre-operation start-up activities are excluded.

Using the representative group of ISOs and RTOs in this project to develop an estimate of Day One operating expenses required making certain assumptions and allocations based upon the quality of the data gathered. The following describes the operating expenses utilized to develop a snapshot of operating a Day One RTO.

PJM Interconnection

Labor Costs

The fully loaded labor costs (compensation and pension benefits) were provided by PJM in its 2004 budget estimates. The same cost center categories were utilized for the related expenses as were assigned for investment. Only the FTEs assigned to the cost centers selected to the asset assignment are defined to contribute to the total labor force of the Day One RTO. Thus, of the 493 budgeted employees for 2004, only 263 FTEs are assumed to be required to staff the minimum functionality. In order to determine the annual labor expense, Staff divided the total compensation and benefits expense in PJM's 2004 budget, by the budgeted FTEs (493) to develop a labor expense per FTE. Staff then multiplied the labor expense per FTE by the allocated number of FTEs for minimum functionality (263) in order to obtain a total annual fully loaded labor cost of \$34.9 million.

Depreciation

Using generally accepted straight-line depreciation, as described above, non-building assets (computers, software, furniture, etc.), were depreciated over their respective useful lives (three or five years). EMS assets were depreciated over seven years and a fifteen-year useful life was used for the building.²⁸ As a result, non-building and building assets from PJM data reflect annual depreciation expenses of \$12.7 million.

Operations & Maintenance

Since the greatest annual expense for the Day One RTO is labor, O&M was estimated based on operating expenses per FTE. Staff divided PJM's materials and

²⁸ It is important to note that these depreciation lives are targeted for purposes of cost recovery through rates rather than application of the Internal Revenue Service's Modified Accelerated Cost Recovery System (MACRS). Under MACRS, buildings are depreciated over a 39 year period.

supplies and other expenses, from the selected cost centers, by 2004 budgeted FTEs of 493. The O&M cost per FTE was then multiplied by the assumed level of staffing (263), resulting in an O&M expense estimate of \$9.8 million per year.

Other Expenses

In order to account for some taxation, Staff included property taxes and other employee related expenses in this expense development. Employee related expenses, calculated as prorated portion of annual budgeted expenses, include lodging, travel, meetings, meals, training, telecommunications, buildings maintenance and utilities associated with staff allocated to Day One operations. Non-employee expenses include annual budget for insurance, board expenses, annual member meeting, audit fees, property and school taxes, and bank fees. Non-employee expenses do not vary by staff number or customer transaction volumes. As a result, the total other expenses equal \$16 million.²⁹

Debt Service

Finally, to account for the debt service of the RTO, Staff attempted to accurately depict the annual cost of funds from each organization in the study group. For most RTOs and ISOs, the depreciation expense recovers the principal payback for debt issuance. However, a recovery for interest expense is also required. From PJM, Staff developed an interest expense by taking an average of unpaid Day One capital investment (less depreciation expense), multiplied by an estimated 7.00% interest rate. In doing so, Staff calculated the interest expense of debt service for Day One functionality from PJM data at \$4.4 million.

Staff's calculation of expenses necessary for Day One operations approximate \$78 million per year, or \$0.22/MWh.³⁰

Midwest Independent Transmission System Operator

Labor Costs

The Midwest ISO provided staff with the number of employees by department by activity. Based on end-of-year 2002 data, the Midwest ISO had total full-time staffing of 227 employees. Reviewing the data submitted, staff aligned the Midwest ISO activities

²⁹ See Exhibit 3, p. 5, Column (B), Lines (6) and (7).

³⁰ See Exhibit No. 3, page 20 for the calculation of \$/MWh. The calculations reflect the annual expense divided by net energy on the RTO or ISO system. However, certain RTOs, *e.g.* the Midwest ISO, use peak energy data for rate development.

to a corresponding Day One function. Staff then selected only the employee head count that was necessary to serve each of the transmission, reliability, support, and management roles. Of the total 227 full-time employees, 187 were determined to be necessary for Day One, independent operations.³¹ Of the 187, through Staff's judgment, 55% were allocated to the Transmission Service Provider, 28% to Transmission Support, 10% to the Reliability Authority, and 7% to Management. To develop the fully loaded labor costs, Staff devised an average cost of labor based upon the level of compensation reported for 2002, including benefits and taxes, related to the amount of staff selected. By developing the average annual labor cost, Staff determined a per FTE annual cost of \$117,167. The annual average compensation was then applied to the allocated FTEs (187) in order to determine annual labor expense of \$22 million.

Depreciation

Identical to the process in the PJM analysis, Staff utilized generally accepted depreciation rates for non-building assets and a 15-year depreciation rate for building. As a result, from the Midwest ISO data, Staff developed an annual depreciation expense of \$15.4 million.

Operations & Maintenance

Using the Midwest ISO's representation of 2002 annual numbers to reflect Day One functionality, Staff selected the Midwest ISO's annualized occupancy expenses and actual supplies and other expenses for O&M. In doing so, Staff developed an annual O&M expense from the Midwest ISO of \$13 million.

Other Expenses

As with the PJM analysis, to obtain an estimate of the Midwest ISO's other expenses, Staff selected labor related and non-labor related expenses that represent the non-direct expenses of operating the RTO, including insurance and property taxes. As a result, Staff developed a total other expense of \$13 million.

Debt Service

For the 2002 calendar year, Midwest ISO provided total debt interest expense of just under \$10 million. In review of Midwest ISO's 2002 annual report, Staff noted that Midwest ISO's debt carries an interest rate of 8.75%. In order to develop an interest expense on the Midwest ISO assets, staff used the average of the unpaid first year Day One capital, multiplied by 8.5% to develop a level of interest expense to develop a level

³¹ See Exhibit 3, p. 8, Midwest ISO Headcount.

of debt service of \$9.3 million.

Staff's calculation of expenses necessary for Day One operations approximate \$73 million per year or \$0.21/MWh.

Electric Reliability Council of Texas

Labor Costs

ERCOT provided actual data for its fiscal year 2002 that depicts staffing levels by cost center division. In order to delineate the level of staffing to support minimum functionality, Staff performed two levels of allocation. First, labor was directly assigned to the four functions where applicable. Many departments, however, served multiple functions. Those that were determined to perform across all functions were allocated to the functions by the ratio of the direct labor assigned to each of the four minimum functions. Staff allocated 188 of ERCOT's 296 FTEs to support the minimum functionality. As with the Midwest ISO data, Staff developed an average annual cost of compensation and benefits per FTE. The average annual cost was then multiplied by the allocated labor of 188 FTEs to obtain an estimated annual labor cost of \$17.8 million.

Depreciation

Again, as in the analyses of the other data providers, Staff utilized generally accepted depreciation rates for the non-building assets on a straight-line method and depreciated the building over fifteen years. However since Staff was unable to segregate EMS systems from the total systems, the depreciation rate for equipment and software was set at 5 years. Accordingly, the ERCOT example resulted in a depreciation expense of \$18.6 million.

Operations & Maintenance

To develop the O&M expense from the ERCOT data, Staff used only ERCOT's administrative and other expenses and hardware and software maintenance and licensing expenses. The administrative and other expenses were divided by ERCOT's full FTE staff of 296 employees for 2002. With that O&M expense per FTE, Staff multiplied the expense per FTE by the 188 allocated employees to reflect an estimated O&M expense of \$3 million. To that Staff added ERCOT's full hardware and software licensing and maintenance expenses of \$4.3 million for a total example O&M expense of \$7.3 million.

Other Expenses

The other expense calculation, like O&M, is calculated by taking ERCOT's facility and equipment costs, and consulting and legal services for 2002, in proportion to

the amount of labor selected for Day One operations. This results in other expenses of \$13 million.

Debt Service

As with PJM and Midwest ISO, in order to develop a representation of interest expense, Staff multiplied the average of the Day One first year ERCOT assets by seven percent. As a result, the data reflects a debt expense of \$7.3 million.³²

Staff's calculation of expenses necessary for Day One operations approximate \$64 million per year or \$0.22/MWh.

Southwest Power Pool

Labor Costs

SPP provided data for the 2003 calendar year. As a result of extensive discussion with SPP staff, SPP provided its own allocation, confirmed by Staff review, of labor required for minimum functionality.³³ However, because of the new market implementation that SPP resurrected in 2003, Staff analyzed SPP from two perspectives: with the market costs and without the market costs.³⁴ For the analysis with the market costs, all 140 SPP FTEs are included in the calculation for a weighted average annual cost of labor per FTE of \$137,797. Thus with all FTEs counted, annual labor expense is \$19.3 million. By excluding the imbalance market staffing levels, the total FTE allocation is reduced to 109 FTEs. Based upon the average annual labor cost, total annual labor cost is approximated at \$15.1 million.

Depreciation

When developing the depreciation expense, the key difference between SPP with the market systems and without is the difference in computer hardware and software

³² ERCOT carries debt where the principal repayment has been deferred for a certain period. Beginning in 2005, recovery of the principal amounts, separate from depreciation recovery and interest expense, will be included in ERCOT's cost recovery mechanism. However, for consistency purposes in the illustrative cost examples, ERCOT's principal recovery is not included.

³³ Given its historic operating structure and control and now preliminary guidance on performing as an RTO, SPP is much like a minimally functional Organization.

³⁴ Cost data from SPP includes the first phase of its market operations implementation, *i.e.*, real-time balancing market with market power mitigation and market monitoring.

assets. While the asset levels for all other assets would be identical, the “fully loaded SPP” has \$20.8 million in additional systems to account for. As a result, on a straight-line basis, SPP with market systems incurs an annual depreciation expense of \$6.99 million, whereas SPP without the new market systems exhibits a depreciation expense of \$2.8 million.³⁵

Operations & Maintenance

Staff utilized all of the SPP reported expenses from its administrative and maintenance expense accounts. This resulted in a total annual O&M expense of just over \$5 million. By removing the administrative and maintenance expense accounts related to the new market activities, the SPP data approximates an O&M expense of \$2.9 million.

Other Expenses

To ascertain a level of other expense for SPP, Staff used an estimate of labor-related taxes by applying the statutory IRS rates to the estimates of labor costs. For SPP with market systems, labor related taxes are approximately \$1.5 million per year. SPP data excluding the market systems labor cost reflects labor related tax expense of \$1.2 million.

Debt Service

Staff applied a 7% interest rate to average SPP assets to develop a representative interest expense of \$2.4 million. Excluding the market operations assets, Staff developed an interest expense of \$1.1 million.

Total approximate expenses, with market operations: \$35.3 million per year, or \$0.16/MWh. Total approximate expenses, less market operations: \$23.2 million per year, or \$0.11/MWh.

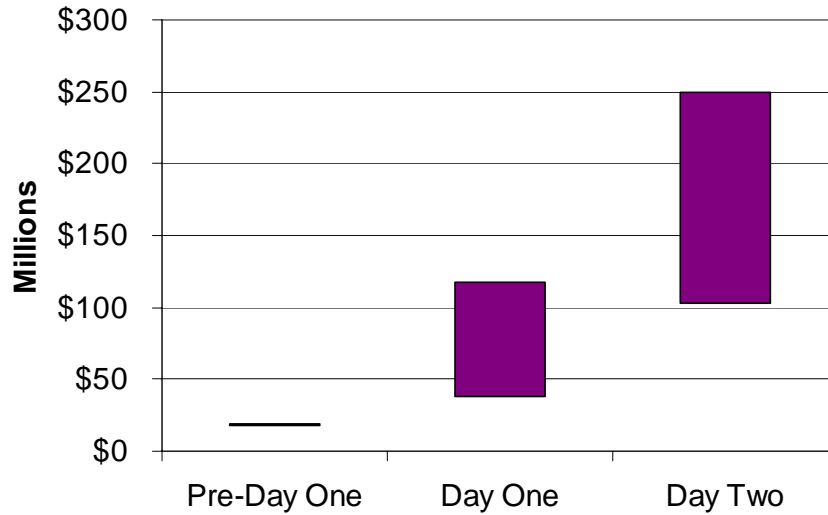
IV. Results

The experiences reviewed in this Study indicate that, to date, Day One RTOs require an investment outlay of between \$38 million and \$117 million (Figure 2), with annual operating expenses between \$35 million and \$78 million (Figure 3). The investment range should provide the Day One RTO with the infrastructure, including hardware and fully operating software and other capital assets, necessary to operate the

³⁵ There was not a clear separation of general furniture/equipment, non-EMS systems and EMS systems to assign depreciation rates. Thus all non-building assets were depreciated over 5 years.

regional transmission system, determine ATC and schedule transmission service through centralized control.³⁶

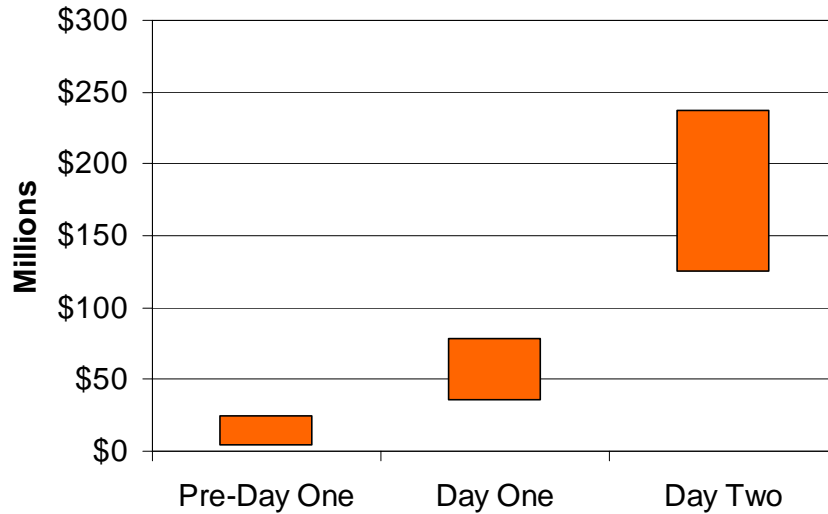
Figure 2
Investment Cost Ranges



The investment range is also sufficient to assure the necessary completion of the communication systems that allow the centralized Day One RTO to monitor the regional grid and take any necessary action to maintain or enhance reliability. Further, the annual expense would provide for staffing, operating expense, debt service, depreciation and taxes sufficient to efficiently manage the organization.

³⁶ Day Two data reflects the investment costs and annual revenue requirements of existing RTOs and ISOs, including those that were not selected for Day One study.

Figure 3
Annual Operating Expense Ranges



Presentation in terms of ranges is useful because the organizations in the sample group vary by location, services, and participation. Similarly, the costs were incurred in different years, and Staff did not make an adjustment for inflation. Staff found that no particular entity, without some level of system enhancement and operational experience, serves as an exact example of a Day One RTO. While the use of existing ISOs and RTOs assisted Staff in the identification of the costs necessary to develop a Day One RTO, the cost data was not consistently developed or provided to Staff, so that only in a grouping was the information relevant for the Study. Accordingly, the results of the analysis portray an expected range of investment and expense amounts. The development of an RTO from an area in which a tight power pool exists can benefit, in terms of potential lower investment costs, from the already developed centralized communication systems. Also, entities located in lower cost areas, in terms of labor and real estate costs, would likely have lower operating expenditures. Conversely, new development in high cost areas can increase building acquisition costs.

Another reason for the development of the cost ranges is due to the quality of the data used in this Study. While some of the respondents to this Study provided detailed investment and operating data by cost element, others provided summary data with less definition. Also, as described above, much of the data analysis required the use of allocation factors. While Staff used allocation factors that are consistent with Commission precedent for ratemaking methodologies, the allocation factors are meant to create a cost model not a definitive cost amount. It is not the conclusion of either the participating organizations or Staff that the cost estimates associated with each organization reflect what its actual cost of operating under a Day One scheme would have been.

Notwithstanding, Staff believes that the Study is an accurate reflection of what a new Day One RTO could expect for required investment and opening day expense. Further, Staff believes the Study's intrinsic value is that it is based on other RTOs' actual experience. The added value of the range approach is that it allows for a sliding scale of costs over time. For example, an entity formed today would face different and likely lower hardware and software expenditures, while facing potential increases in building costs due to inflation. Further, regional differences play a role in determining how much must be spent for both investment and operating expenses.

In conclusion, Staff believes that ranges displayed in this Study reflect costs likely to be incurred by an RTO attempting to perform the Day One functions discussed above.

V. Start-up Cost Conclusions

While this Study seeks to identify the costs of starting a Day One RTO, Staff sought to:

- A) Compare the results here with (1) the cost-benefit analyses completed for various regions which have also been attempting to quantify the costs and benefits of RTO formation and (2) what existing large operating companies are currently charging for similar services; and
- B) Assess the impact of the added annual charges on customers so market participants and regulators can review and discuss their significance.

Comparisons

At least six cost-benefit studies have been completed since the issuance of Order No. 2000.³⁷ Among the studies that attempted to estimate the cost of developing an RTO, only the RTO-West Cost Benefit study, completed in March 2002, contained an assessment of RTO start-up costs and operating costs.³⁸

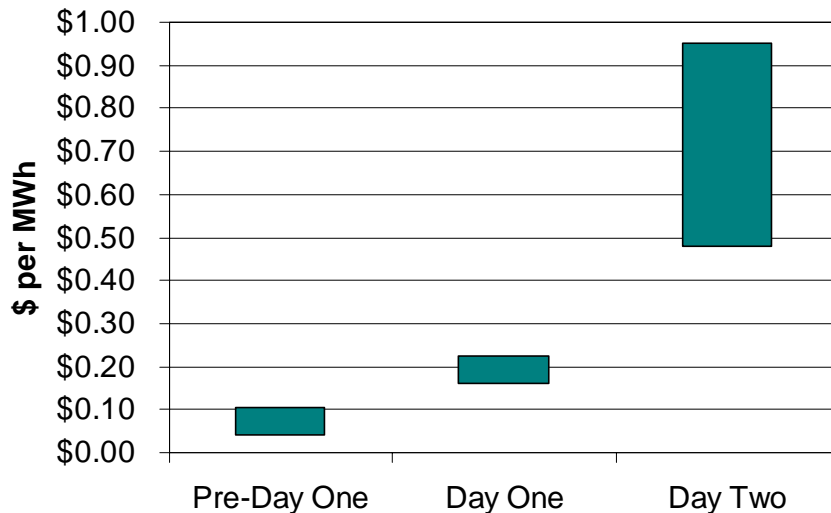
According to the RTO-West study, the estimated cost to develop an RTO is \$82 million. This translates to an annual operating expense or revenue requirement of \$50 million—amounts similar to Staff's expense and investment estimates. The RTO-West

³⁷ These include studies for the Southeastern Association of Regulatory Utility Commissioners (SEARUC), RTO-West filing utilities, NY-ISO and NERTO formation of a single RTO, and Northeast RTO consisting of PJM, NY-ISO and NERTO. Studies were also completed separately by the Commission and the Department of Energy. The GridFlorida study is underway.

³⁸ A current study being completed for the GridFlorida RTO proposes to include an assessment of the start-up costs under a day-one and day-two approach.

study used existing data from operating entities much in the same fashion as Staff’s Study did. In doing so, however, there was no dissection of the estimated development costs by RTO function or through staged implementation. The RTO-West study concluded that, on a per unit basis, it would cost between \$0.40/MWh and \$0.58/MWh.³⁹ In comparison to the RTO-West study, Staff used its calculated Day One expenses and load data from each of the representative group members to project that a new Day One RTO (in those regions) would result in an added charge to customers in the range of \$0.16/MWh to \$0.22/MWh (Figure 4).⁴⁰ It is important to note that some of the functions of a Day One RTO are currently being provided and charged for by transmission owners. For example, utilities, including large multi-state holding companies, have explicit charges in their tariffs for Scheduling, System Control and Load Dispatch service.⁴¹ This function is only one of the many functions that an RTO performs and will no longer be performed or charged for by the current utilities.

Figure 4
Annual Operating Expense Ranges per MWh



³⁹ See Exhibit No. 6 for the relevant portions of the RTO-West Study.

⁴⁰ In the cases where the rate development is based on peak energy on the grid (e.g., the Midwest ISO), the per unit impact would be lower because of this larger load in the denominator. For example, the derived Day One rate for the Midwest ISO, using peak energy, would be \$0.13/MWh, rather than \$0.21/MWh.

⁴¹ This sample includes Arizona Public Service Company (\$0.06/MWh), Entergy Corporation (\$0.10/MWh), Florida Power & Light Company (\$0.03/MWh), Florida Power Corporation (\$0.11/MWh), Public Service Company of Colorado (\$0.13/MWh), Public Service Company of New Mexico (\$0.05/MWh), Southern Electric Generating Company (\$0.11/MWh), and Tampa Electric Company (\$0.05/MWh).

Staff's projection demonstrates that the ultimate charge to customers will largely depend on the geographic size and electrical load of the new organization, as well as the costs. For example, using the PJM Day One illustration, the impact of increasing the PJM footprint to expected 2005 levels would result in an approximate rate of \$0.15/MWh.⁴² By increasing its geographic footprint, through incremental increases in investment, PJM was able to offset the costs by increasing its electrical load. PJM indicated that, had its footprint been smaller, investment costs would likely have been lower. Thus, size has implication in two contexts: costs differ as a result of both load density and geographic footprint. As a result, it is important to recognize that while some RTO costs are increasing, the increases are a function of geographic expansion and addition of functions, at the request of RTO customers. For example, PJM's 2005 operating budget is expected to increase by 46% to accommodate its larger footprint and service needs, but the additional scope will actually reduce the per unit charge by 27%.

Another aspect of this study was to work with the sponsors of WestConnect RTO. As a result of Staff's discussion with WestConnect, an understanding was developed that recognizes separate reporting of investment and start-up costs. In addition, Staff's and WestConnect's estimates of the costs of a Day One RTO are reasonably close.⁴³

Impact

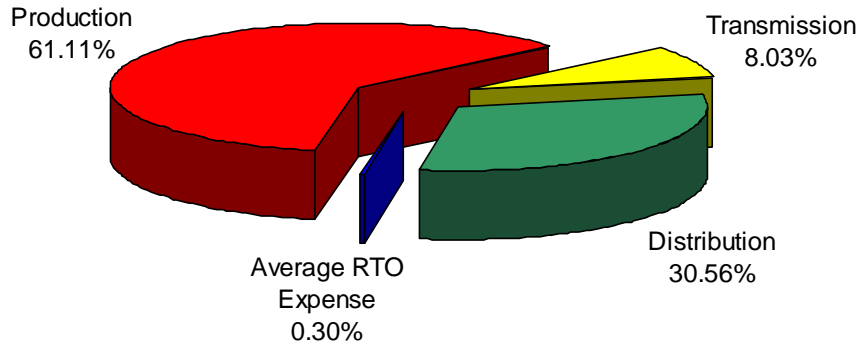
Finally, in order to provide perspective on the financial impact of a new RTO to end-use customers, Staff calculated the percentage of a retail customer's bill that would be associated with the additional expense. Staff used its average annual revenue requirement of \$62.5 million and Energy Information Agency data on the overall national average cost of production, transmission and distribution service to produce this estimate. The median expense of developing and operating a Day One RTO would impact retail rates by less than 0.3 percent (or two one-hundredths of one cent, \$0.0002, per kWh) (see Figure 5).⁴⁴ This represents a charge of \$2.31 per year for a typical residential consumer, or \$0.19 per month.

⁴² See Exhibit 3, p. 5, Column (C), for detailed information. The forecast costs reflect the incremental additions necessary to serve the expanded footprint.

⁴³ WestConnect developed a study that reflects year one annual revenue requirement of about \$50 million and necessary investment (as defined above) of approximately \$65 million.

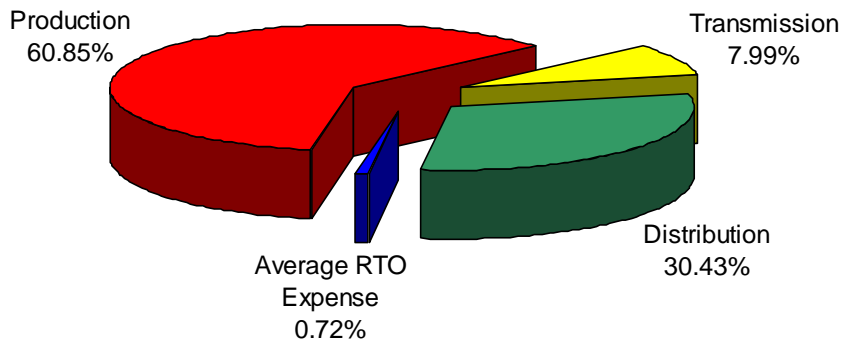
⁴⁴ The average \$62.5 million operating cost was divided by the regional average load of the United States (Exhibit 3, pages 21 and 22).

Figure 5
Average Retail Bill Impact: Nationwide
(% of Total \$/kWh)



A second example was calculated using a smaller footprint. Here Staff applied the same analysis of new charges for the Desert Southwest footprint and demonstrated that an RTO could operate for an added charge of 0.72 percent (or five one-hundredths of one cent, \$0.0005, per kWh) of a retail customer’s bill (see Figure 6). The observation to be drawn from this analysis is that the size of the organization’s footprint will matter; however, the impact to customers should be less than one percent.

Figure 6
Average Retail Bill Impact: Desert Southwest
(% of Total \$/kWh)



Conclusion

In summary, there is significant investment required to develop an RTO. However, the actual revenue requirement of the organization necessary for it to recover its operating expenses, return of debt expense, depreciation and taxes (other than income) is far less significant and has a relatively small impact on retail customers. For this

relatively small incremental charge, customers gain all the benefits of independence and reliability associated with the new RTO.

VI. Study Insights

In the course of developing the Study, Staff interviewed several industry consultants and members of current RTO management. In these interviews, respondents shared their lessons learned and insights on RTO formation. Despite the variety of circumstances under which the current RTOs and ISOs developed, many had common experiences.

While each existing transmission organization had similar operational requirements, costs differed in key areas, namely computer hardware and software expenditures, management of the transmission organization, outside consulting fees and operations center/building. Many respondents noted that there were lessons to be learned from their own start-up experience and that a new entity should have a smoother, less expensive development stage. Respondents indicated several factors are important to a smoother roll-out: (1) have a clear business plan prior to hiring a software contractor; (2) attempt to utilize existing modular software; and (3) add functions gradually, rather than beginning with full-scale Day Two operations.

Primarily, respondents noted that delay is expensive. Cost overruns, particularly in software design, result from changing plans mid-course. Prolonged delay also increases the amount of interest paid on debt before operations commence and the RTO has a revenue stream. Conversely, full Day Two operations implementation at the organization's inception on an aggressive timeline is costly both in the amount spent hiring outside consultants and in the number of software re-works required after operations commence. The entities that developed in stages, moving from Day One to Day Two while adding functionality to meet their members' needs, reported less cost overrun and fewer required reconfigurations. Staff finds that, if developing RTOs apply the lessons learned by existing RTOs, their formation costs can remain on the low end of the cost ranges while moving to a Day Two RTO with only incremental cost additions.⁴⁵ Similarly, RTOs that grew out of tight power pools with long-established working relationships among members were able to grow from a Day One to a Day Two RTO incrementally with greater cost efficiency. Those entities without existing relationships spent more on the front end to make their IT and communications systems compatible.

Additionally, a gradual approach from Day One operations to a full Day Two

⁴⁵ This can be seen in Figure 2, where the higher end of the investment cost range reflects some entities that undertook an immediate full Day Two effort to commence operations.

market may be less expensive due to the advent of modular computer systems. These systems can overlay additional functions as required for locational marginal pricing (LMP) and market operations on top of the Day One system. This software is becoming increasingly standardized and available off-the-shelf. However, it should be recognized that software expenditures will continue to be one of the largest portions of an RTO's budget. A consultant to the Commission, Dave Turner of Gestalt LLC cautioned that, while commercially available software exists, it is not one-stop shopping. He noted that such products will almost always require some customization, perhaps significant. This invariably means costs will be higher than the retail price tag, but typically lower than entirely customized software. Mr. Turner warned that costs can grow exponentially when requirements shift or design changes are introduced in the build, test or deploy stages. Similarly, respondents indicated several factors that can lead to cost increases for IT systems: (1) lack of clear business plan and project management; (2) over-customization of software; (3) incomplete system design; (4) excessive changes during development, and (5) implementation delays.

Staff believes an organization beginning today and taking a lessons learned approach from previously formed organizations will experience costs at the lower end of the investment cost range, similar to SPP's recent experience, and likely incur costs in the range of approximately \$50 to \$70 million in investment and operating costs of \$50 to \$70 million.

This Study also highlights the need for RTO and ISO data to be presented in a common format. Much of the imprecision in the results stems from the data submitted by the participating organizations, and Staff's assumptions and allocations of costs. With more consistent and precise data, a clearer picture of the up-front investment and ongoing expenditures required would emerge. The Uniform System of Accounts, designed for the traditional vertically-integrated utility, is not always aligned with the functions of an ISO or RTO. Staff recommends review of the reporting requirements and possible standardization to facilitate cost oversight by the public and the Commission.

Exhibit 1

Summary Findings from Benefit Studies for RTOs and Competition

Study (Author)	Date	Benefit Type	Savings	Comment
DOE's National Transmission Grid Study (DOE)	5/2002	Consumer benefit of competition already attained	\$13 bn/year	Relieving transmission constraints would significantly add to customer benefits
SEARUC study of SMD in Southeast (Charles River Associates)	11/2002	improved power dispatch and increased reserve sharing	\$1.1 bn in net benefits in Southeast. \$1.8 bn in Eastern Interconnect	Net benefits assume that SMD includes participant funding for new transmission facilities. Finding of net benefits differs by sub-region
RTO West (Tabors Caramanis and Associates)	3/2002	Elimination of pancaked rates and loss charges, Better dispatch across a wider region and Better reserve sharing	Net benefits in RTO West \$305 mm/year Net benefits for whole Western Interconnect \$410 mm	Benefits to electricity buyers about \$1.3 bn/year Lower net revenues to generators of about \$900 mm
Center for the Advancement of Energy Markets Competition in PJM (Ron Sutherland)	9/2003	PJM customer savings in end-use prices paid in 2002 and projects future savings	\$3.3 bn in 2002 \$28.5 bn present value of future	Wholesale market benefits primarily from centralized economic dispatch, with some reduced forced outage rates & higher availability
MISO, PJM and SPP on Single RTO Market (Energy Security Analysis, Inc.)	7/2002	Elimination of pancaked transmission rates and loss charges. Better dispatch across a wider region. Better reserve sharing	\$7 bn over ten years	

Exhibit 1 – Benefits Studies Table

Study (Author)	Date	Benefit Type	Savings	Comment
PJM Study of single Northeastern RTO (PJM)	1/2002		\$299 mm/year	Net generators costs of \$37 mm
NYISO and ISO-NE combination and single Northeastern RTO (NYISO and ISO-NE)	5/2002		Single Northeastern RTO more than \$200 mm/year NY and NE about \$120/year	
FERC Environmental Impact Statement for 888	1996	Open transmission access and competition through 2010	\$3.76 - \$5.37 bn/ year (1995 dollars)	
FERC Economic Assessment of RTO Policy (ICF)	2002	3 Scenarios: A) Transmission Only - reduced transmission barriers and better sharing of reserves across regions B) RTO Policy Case, with generation efficiencies; and C) Demand Response	In 2010 (in 2000 \$s) A) \$0.8 bn/year (0.7%) B) \$5.2 bn/year (4.8%) C) \$7.5 billion/year (6.9%)	Present Value 2002-2020 from \$6.2 bn (0.6%) to \$60 bn (5.6%) for three scenarios
Center for Study of Competitive Markets Operating Efficiencies Study (Markiewicz, Rose and Wolfram)	7/2004	Measured historical improvements in operating efficiency of utility owned plants operating in competitive markets as compared with owned plants in regulated markets and with Muni- owned plants	Restructured IOUs 10% more efficient in non-fuel expenses & 5% in employment, vs. unrestructured IOUs 13% in non-fuel expenses & 10% in employment vs. Munis.	Based on historical experience of utilities under restructuring using annual operating data on generation plants for the period 1981 through 1999

Quotes Regarding the Benefits of Competition from Order 888¹

Table of Order 888 Discussion of Benefits and Costs of Markets	
Quantifiable Benefits	<ul style="list-style-type: none"> • \$3.8 to \$5.4 Billion
Qualitative Benefits	<ul style="list-style-type: none"> • Better use of existing assets and institutions • New Market Mechanisms • Technical Innovation • Less Rate Distortion

Quantified Benefits of \$3.8 to \$5.4 Billion (from Page 3)

The Commission estimates the potential quantitative benefits from the Final Rule will be approximately \$3.8 to \$5.4 billion per year of cost savings, in addition to the non-quantifiable benefits that include better use of existing assets and institutions, new market mechanisms, technical innovation, and less rate distortion.

Types of Benefits of Competition (from Section 5.2.6.1. Economic Benefits)

[O]ther industries that have undergone large shifts in regulation (natural gas, telecommunications, railroads, airlines, and trucking) have gained efficiency in four general ways:

- **Better use of existing assets and institutions.** Market forces remove rigidities that are associated with highly regulated industries, allowing better allocation of resources and fuller use of the transmission network. Competitive pressure encourages companies to make better use of their assets.
- **New market mechanisms.** As markets take hold, they allow people to trade not only the goods and services that were traditionally regulated, but also a wide range of other goods and services. For instance, spot markets allow shorter term trading; futures and derivative markets allow more sophisticated approaches to managing risk. . .
- **Technical innovation.** Companies develop new methods of providing goods and services. In some cases, this means developing industry-specific technologies. It also can mean adapting existing technologies from other industries. . . . Regulated industries often have a pent-up potential for technical innovation that arises because no one has tried to adapt existing technologies from other industries. . .
- **Less rate distortion.** As the basic commodities or services sold in an industry become more competitive, it becomes ever harder to maintain rate structures that prevent efficient use of the transportation system. The proposed rule does not directly address transmission rates, but future competition arising from non-discriminatory open access is likely to increase pressure on inefficiencies in transmission rates.

These types of efficiency gain are not mutually exclusive. For instance, improved market structures are the mechanism through which resources are better allocated—though better markets also add value in ways that were unimagined at the beginning of market-oriented regulation.

¹ Promoting Wholesale Competition Through Open Access Non-discriminatory Transmission Services by Public Utilities and Recovery of Stranded Costs by Public Utilities and Transmitting Utilities, Order No. 888, 61 Fed. Reg. 21,540 (May 10, 1996), FERC Statutes & Regulations, Regulations Preambles January 1991-June 1996 ¶ 31,036 (1996), order on reh'g, Order No. 888-A, 62 Fed. Reg. 12,274 (March 14, 1997), FERC Statutes & Regulations, Regulations Preambles July 1996-December 2001 ¶ 31,048 (1997), order on reh'g, Order No. 888-B, 81 FERC ¶ 61,248 (1997), order on reh'g, Order No. 888-C, 82 FERC ¶ 61,046 (1998), aff'd in relevant part sub nom. Transmission Access Policy Study Group, et al. v. FERC, 225 F.3d 667 (D.C. Cir. 2002), aff'd sub nom. New York v. FERC, 535 U.S. 1 (2002).

Quotes Regarding the Benefits of RTOs from Order 2000²

Table of Order 888 Discussion of Benefits of Markets	
Impediments to Competition Benefits	<ul style="list-style-type: none"> • Engineering and economic inefficiencies • Continuing opportunities for transmission owners to unduly discriminate on behalf of their affiliates
Qualitative Benefits	<ul style="list-style-type: none"> • Increased efficiency through elimination of regional transmission pricing and rate pancaking • Improved congestion management • More accurate estimates of ATC • Effective management of parallel path flows • Efficient planning for transmission and generation investments • Increased coordination among states • Reduced transaction costs • Facilitation of state deregulation • Development of environmentally preferred generation • Improved grid reliability • Less discrimination
Cost/Benefit Tradeoffs	<ul style="list-style-type: none"> • Organizational flexibility to manage costs

Impediments to the Achievement of Competitive Benefits (from Page 32)

[T]here remain important transmission-related impediments to a competitive wholesale electric market ... [in] two broad categories: (1) the engineering and economic inefficiencies inherent in the current operation and expansion of the transmission grid, and (2) continuing opportunities for transmission owners to unduly discriminate in the operation of their transmission systems so as to favor their own or their affiliates' power marketing activities.

Types of Benefits of Competition (from Pages 89-90)

We conclude that RTO's will provide the benefits ... includ[ing]: increased efficiency through regional transmission pricing and the elimination of rate pancaking; improved congestion management; more accurate estimates of ATC; more effective management of parallel path flows; more efficient planning for transmission and generation investments; increased coordination among state regulatory agencies; reduced transaction costs; facilitation of the success of state retail access programs; facilitation of the development of environmentally preferred generation in states with retail access programs; improved grid reliability; and fewer opportunities for discriminatory transmission practices.

Cost/Benefit Tradeoffs (from Page 96)

We also recognize that there are those who worry that the costs of establishing an RTO will outweigh the benefits. We believe this concern fails to account for the flexibility we have built into this rule. While many look at the high costs involved with respect to establishing some existing ISOs and PXs, this rule does not require an RTO to follow any specific approach ... allowing significant flexibility with respect to how and, in

² Regional Transmission Organizations, Order No. 2000, 65 Fed. Reg. 809 (Jan. 6, 2000), FERC Statutes & Regulations, Regulations Preambles July 1996-December 2000 ¶ 31,089 (1999), order on reh'g, Order No. 2000-A, 65 Fed. Reg. 12,088 (Mar. 8, 2000), FERC Statutes & Regulations, Regulations Preambles July 1996-December 2000 ¶ 31,092 (2000), aff'd sub nom. Public Utility District. No. 1 of Snohomish County, Washington v. FERC, 272 F.3d 607 (D.C. Cir. 2001).

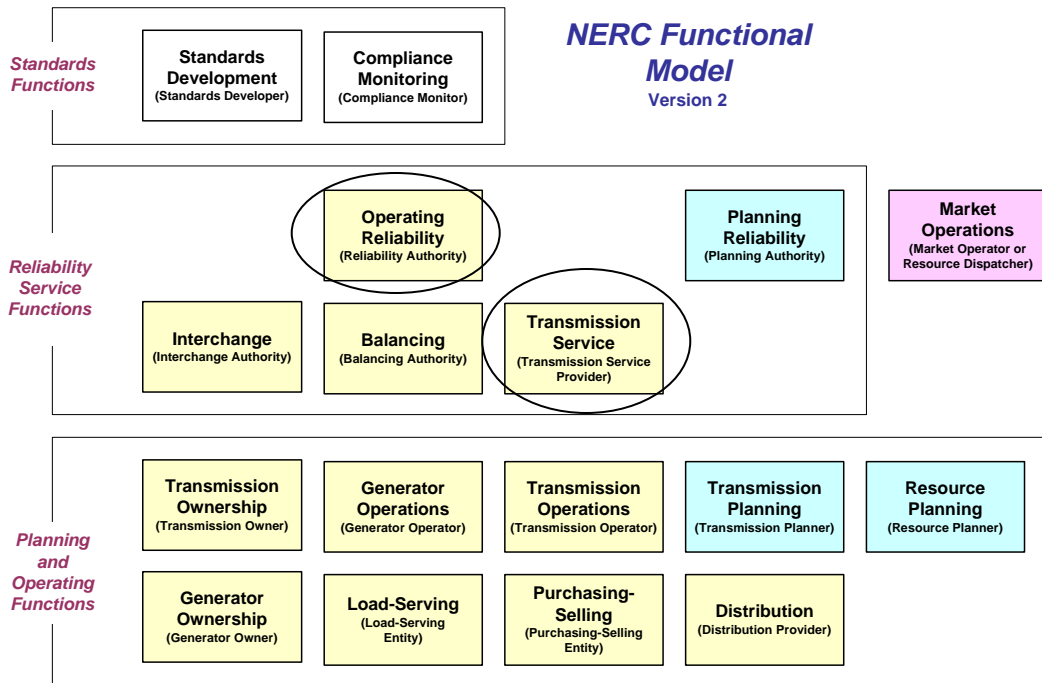
Exhibit 1 – Benefits Studies Table

some cases, when the minimum characteristics and functions are satisfied.... The flexibility built into the Final Rule will allow RTOs to create streamlined organizational structures that are not overly costly.

Exhibit 2

Exhibit 2

NERC Reliability Functional Model Functional Model Diagram (Approved 2/10/2004)



Function Name	Responsible Entity
Operating Reliability Function	Reliability Authority
Planning Reliability Function	Planning Authority
Balancing Function	Balancing Authority
Interchange Function	Interchange Authority
Transmission Service Function	Transmission Service Provider
Transmission Ownership Function	Transmission Owner
Transmission Operations Function	Transmission Operator
Transmission Planning Function	Transmission Planner
Resource Planning Function	Resource Planner
Distribution Function	Distribution Provider
Generator Ownership Function	Generator Owner
Generator Operations Function	Generator Operator
Load-serving Function	Load-serving Entity
Purchasing-Selling Function	Purchasing-Selling Entity
Market Operations Function	Market Operator (or Resource Dispatcher)
Standards Development Function	Standards Developer
Compliance Monitoring Function	Compliance Monitor

* The circled authorities represent Staff's identification for Day One purposes.

Exhibit 3

RTO Investment Cost	PJM	MISO	ERCOT	SPP	SPP (non-market)
(1) Transmission Service Provider	\$ 35,198,875	\$ 55,385,085	\$ 59,740,106	\$ 22,307,139	\$ 1,466,682
(2) Transmission Support	\$ 15,474,219	\$ 28,851,278	\$ 18,034,749	\$ 3,040,533	\$ 3,040,533
(3) Reliability	\$ 1,269,955	\$ 10,142,315	\$ 4,508,687	\$ 5,670,751	\$ 5,670,751
(4) Management	\$ 6,684,399	\$ 7,029,747	\$ 1,011,331	\$ 2,256,707	\$ 2,256,707
(5) Building	\$ 11,046,712	\$ 15,776,744	\$ 30,655,674	\$ 5,059,774	\$ 5,059,774
(6) Total	\$ 69,674,160	\$ 117,185,169	\$ 113,950,547	\$ 38,334,905	\$ 17,494,447

(7) Number of Employees	263	187	188	140	109
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Estimated Annual Operating Expense

(8) Est. Labor Cost(Avg. Ann. Sal.) <u>1/</u>	\$ 34,852,639	\$ 21,910,268	\$ 17,870,915	\$ 19,291,633	\$ 15,061,253
(9) Depreciation <u>2/</u>	\$ 12,722,689	\$ 15,461,463	\$ 18,671,120	\$ 6,992,344	\$ 2,824,253
(10) O&M <u>3/</u>	\$ 9,768,517	\$ 13,039,723	\$ 7,378,749	\$ 5,037,724	\$ 2,943,063
(11) Other Expenses <u>4/</u>	\$ 16,025,950	\$ 13,141,326	\$ 12,954,043	\$ 1,536,570	\$ 1,199,492
(12) Interest Expense <u>5/</u>	\$ 4,431,897	\$ 9,303,627	\$ 7,323,049	\$ 2,438,711	\$ 1,125,762
(13) Total (Sum (1) through (5))	\$ 77,801,693	\$ 72,856,407	\$ 64,197,876	\$ 35,296,983	\$ 23,153,824

1/ Salaries, associated benefits and labor related taxes. MISO salaries exclude MAPPCOR Contract Expense.

2/ Non-EMS software (3 yrs), Non-EMS Hardware (5 yrs), EMS (7 yrs), Building (15 yrs).

3/ PJM is Materials and Supplies and Hardware Lease Expense per FTE. MISO O&M consists of Departmental Occupancy and Supplies Expenses only (2002) ERCOT O&M includes EOY 2002 Admin costs/FTE plus all Software License Expense. SPP is directly identified Admin and L&M Costs.

4/ Includes Labor related expenses (meals, lodging, travel, training, etc.) and Non-Labor related (e.g., insurance expenses, property tax, bank fees, and SAS 70 II audits). MISO expense excludes amortized component of deferred start-up cost (over 7 years). ERCOT includes Facility and Equipment expenses, and Consulting and Legal services.

5/ Interest Expense Only (PJM/ERCOT/SPP - 7%, MISO - 8.5% of Investment). RTOs use Depreciation to cover principal retirement. Reflects interest calculated taking into account first year Day One investment paid.

PJM Summary

RTO Investment Cost

(1)	Transmission Service Provider	\$ 35,198,875
(2)	Transmission Support	\$ 15,474,219
(3)	Reliability	\$ 1,269,955
(4)	Management	\$ 6,684,399
(5)	Building	\$ 11,046,712
(6)	Total	\$ 69,674,160

References

Page 3 - PJM Day One Capital: Total Column (A)
 Page 3 - PJM Day One Capital: Total Column (B)
 Page 3 - PJM Day One Capital: Total Column (C)
 Page 3 - PJM Day One Capital: Total Column (D)
 Page 3 - PJM Day One Capital: Total Column (E)
 Sum (1) through (5)

(7) Number of Employees 263 Page 4 - PJM Day 1 FTEs: Column (B) Total

Estimated Annual Operating Expense

(8)	Est. Labor Cost(Avg. Ann. Sal.) <u>1/</u>	\$ 34,852,639
(9)	Depreciation <u>2/</u>	\$ 12,722,689
(10)	O&M <u>3/</u>	\$ 9,768,517
(11)	Other Expenses <u>4/</u>	\$ 16,025,950
(12)	Interest Expense <u>5/</u>	\$ 4,431,897
(13)	Total	\$ 77,801,693

Page 5 - PJM Day One OpEx: Column (B), Line (3)
 Page 5 - PJM Day One OpEx: Column (B), Line (1)
 Page 5 - PJM Day One OpEx: Column (B), Sum Lines (4) and (5)
 Page 5 - PJM Day One OpEx: Column (B), Sum Lines (6) and (7)
 Page 5 - PJM Day One OpEx: Column (B), Line (2)
 Sum (8) through (12)

Estimated PJM Day 1 Capital Investment						
	(A)	(B)	(C)	(D)	(E)	Sum (A)-(E)
<i>Portion of System Investment Attributable to Each RTO Day 1 Function</i>	Transmission Service Provider	Transmission Support	Reliability	Management	Building	Total
ACES / TMS			106,417			106,417
Buildings					10,600,000	10,600,000
Business Continuity	5,772,673					5,772,673
Combined OASIS / EES Interface	672,678					672,678
Control Center Infrastructure					446,712	446,712
Data Publication Extension		272,509				272,509
Energy Management System	25,994,325	11,451,914				37,446,239
Enterprise Security				3,837,498		3,837,498
Grid Accounting		34,551				34,551
Independent Generator Communications			1,163,538			1,163,538
Internet Network Architecture				377,152		377,152
Network Infrastructure Upgrade				1,155,092		1,155,092
OASIS	748,027	1,496,050				2,244,077
Operator Training Simulator	128,219					128,219
PJM Information Warehouse	1,882,953	2,219,195		941,477		5,043,625
PJM Manuals				141,144		141,144
PJM Manuals Enhancements				232,037		232,037
Totals	35,198,875	15,474,219	1,269,955	6,684,399	11,046,712	69,674,160

Estimated PJM Day 1 Staff

(A)	(B)	(C)	(D)	(E)
Based on 2004 Annual Budget				
	Directly Attributable to Day 1 Functions	Not Attributable to Day 1 Functions	Management / Support Functions	Total
System Operations	114			114
Transmission Planning		38		38
Market Services		52		52
Information Technology			129	129
Corporate Services			39	39
Finance			87	87
Market Monitoring		10		10
Office of the President			24	24
Subtotal	114	100	279	493
Management Allocation	149	130	(279)	0
Totals	263	230	0	493

Estimated PJM Annual Day 1 Revenue Requirement

(A)		(B)		(C)
Expense Type	Footnote	2004 Estimate	2005 Estimate	
(1) Depreciation	1	12,722,689	15,400,709	
(2) Interest	2	4,431,897	4,936,447	
(3) Compensation	3	34,852,639	49,997,229	
(4) Hardware Lease Expense	4	3,149,064	4,844,601	
(5) Materials & Supplies	4	6,619,453	10,994,935	
(6) Other or Outside Services Correlated with Staff Levels	5	8,614,841	12,054,417	
(7) Other or Outside Services <i>NOT</i> Correlated with Staff Levels	6	7,411,109	9,060,998	
(8) Total		<u>77,801,693</u>	<u>107,289,336</u>	
(9) Net Energy for Load Forecast	7	349,000,000	700,000,000	
(10) Day 1 OpEx Rate Per Megawatt Hour		<u>\$ 0.2229</u>	<u>\$ 0.1533</u>	

Footnotes

- 1 Calculated as 85% of Day 1 non-building, non-EMS investment depreciated over three-year software useful life plus 15% of Day 1 non-building, non-EMS investment depreciated over five-year hardware useful life plus Day 1 building investment depreciated over
- 2 Calculated as average unpaid Day 1 Capital Investment times estimated 7.00% interest rate.
- 3 Based on pro ration of PJM's total budgeted 2004 Compensation for PJM's System Operations staff plus pro rated management staff totaling 263 in 2004 and 328 in 2005.
- 4 Calculated as pro rated portion of 2004 budgeted expense associated with staff allocated to Day 1 Operations.
- 5 Calculated as pro rated portion of annual budgeted expenses for lodging, travel, meetings, meals, training, telecommunications, buildings maintenance and utilities associated with staff allocated to Day 1 Operations.
- 6 Represents annual budget for insurance, board expenses, annual member meeting, audit fees, property and school taxes, and bank fees that do not vary by staff number or customer transaction volumes.
- 7 Based on PJM's annual budget assumptions and volume forecasts on PJM Finance Committee page of web site.

Midwest ISO Summary

RTO Investment Cost

(1)	Transmission Service Provider	\$ 55,385,085
(2)	Transmission Support	\$ 28,851,278
(3)	Reliability	\$ 10,142,315
(4)	Management	\$ 7,029,747
(5)	Building	\$ 15,776,744
(6)	Total	\$ 117,185,169

References

Page 7 - MISO Capital Assets: Total Column (D)
Page 7 - MISO Capital Assets: Total Column (E)
Page 7 - MISO Capital Assets: Total Column (F)
Page 7 - MISO Capital Assets: Total Column (G)
Page 7 - MISO Capital Assets: Total Column (C), Line (8)
Sum Lines (1) through (5)

(7) Number of Employees 187 Page 8 - MISO Headcount: Line (11)

Estimated Annual Operating Expense

(8)	Est. Labor Cost(Avg. Ann. Sal.) <u>1/</u>	\$ 21,910,268
(9)	Depreciation <u>2/</u>	\$ 15,461,463
(10)	O&M <u>3/</u>	\$ 13,039,723
(11)	Other Expenses <u>4/</u>	\$ 13,141,326
(12)	Interest Expense <u>5/</u>	\$ 9,303,627
(13)	Total	\$ 72,856,407

Page 9 - MISO Op Expense, Line (1) divided by 227 times Line (7), above
Page 7 - MISO Capital Assets: Column (C), Line (32)
Page 9 - MISO Op Expense: Column (D), Sum Line (3) and Line (5)
Page 9 - MISO Op Expense: Column (D), Sum Line (2), Line (4), and Line (6)
Line (6) multiplied by 2 less Line (9), divided by 2, multiplied by 8.5%.
Sum Lines (8) through (12)

Midwest ISO Assets - 2002 Data

		(A)	(B)	(C)	(D)	(E)	(F)	(G)
Account	Description	Ending Balance (through Q3 2003)	Allocated to Day 1	TSP	TSP Support	Reliability	Management	
(1)	35203 Leasehold Improvements - Transmission	\$ 523,325.32	\$ 523,325	\$ 239,106	\$ 126,320	\$ 157,900		
(2)	35301 Computer Hardware - Transmission	\$ 13,012,919.71	\$ 13,012,920	\$ 5,945,558	\$ 3,141,050	\$ 3,926,312		
(3)	35303 Computer Software - Transmission	\$ 61,172,915.29	\$ 61,172,915	\$ 40,026,722	\$ 21,146,193			
(4)	35307 Telecommunications Equipment	\$ 8,165,925.41	\$ 8,165,925	\$ 2,934,481	\$ 1,550,292	\$ 1,937,865	\$ 1,743,287	
(5)	35311 Computer Hardware - Transmission	\$ 4,859,786.79	\$ 4,859,787	\$ 2,407,184	\$ 862,953	\$ 1,589,650		
(6)	38900 Land and Land Rights - General	\$ 1,800,000.00	\$ 1,800,000	\$ 646,842	\$ 341,728	\$ 427,160	\$ 384,270	
(7)	39003 Leasehold Improvements - General	\$ 6,214,349.05	\$ 6,214,349	\$ 2,233,169	\$ 1,179,787	\$ 1,474,734	\$ 1,326,659	
(8)	39011 Buildings - General Leased	\$ 15,776,743.50	\$ 15,776,744					
(9)	39013 Leasehold Improvements - General	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
(10)	39100 Office Furniture and Fixtures	\$ 2,628,986.20	\$ 2,628,986	\$ 944,744	\$ 499,110	\$ 623,888	\$ 561,244	
(11)	39110 Office Furniture and Fixtures	\$ 20,255.00	\$ 20,255	\$ 7,279	\$ 3,845	\$ 4,807	\$ 4,324	
(12)	39700 Communication Equipment - General	\$ 559,367.57	\$ 559,368				\$ 559,368	
(13)	39710 Communication Equipment - General	\$ 520,715.55	\$ 520,716				\$ 520,716	
(14)	39801 Computer Hardware - General	\$ 1,504,847.60	\$ 1,504,848				\$ 1,504,848	
(15)	39803 Computer Software - General	\$ 425,031.75	\$ 425,032				\$ 425,032	
(16)	Total	\$ 117,185,168.74	\$ 117,185,169	\$ 55,385,085	\$ 28,851,278	\$ 10,142,315	\$ 7,029,747	

100.00%

Depreciation Calculation

Rate (yrs)		Allocated Dollars	Ann. Depreciation
(17)	5 Leasehold Improvements - Transmission	\$ 523,325.32	\$ 104,665
(18)	7 Computer Hardware - Transmission	\$ 13,012,919.71	\$ 1,858,989
(19)	7 Computer Software - Transmission	\$ 61,172,915.29	\$ 8,738,988
(20)	5 Telecommunications Equipment	\$ 8,165,925.41	\$ 1,633,185
(21)	7 Computer Hardware - Transmission	\$ 4,859,786.79	\$ 694,255
(22)	0 Land and Land Rights - General	\$ 1,800,000.00	\$ -
(23)	5 Leasehold Improvements - General	\$ 6,214,349.05	\$ 1,242,870
(24)	15 Buildings - General Leased	\$ 15,776,743.50	\$ -
(25)	5 Leasehold Improvements - General	\$ -	\$ -
(26)	5 Office Furniture and Fixtures	\$ 2,628,986.20	\$ 525,797
(27)	5 Office Furniture and Fixtures	\$ 20,255.00	\$ 4,051
(28)	5 Communication Equipment - General	\$ 559,367.57	\$ 111,874
(29)	5 Communication Equipment - General	\$ 520,715.55	\$ 104,143
(30)	5 Computer Hardware - General	\$ 1,504,847.60	\$ 300,970
(31)	3 Computer Software - General	\$ 425,031.75	\$ 141,677
(32)		\$ 117,185,169	\$ 15,461,463

MISO Headcount
December 31, 2002

(1) Admin/Exec	2
(2) Finance/Shared Services	27
(3) Operations	108
(4) Planning	20
(5) IT	54
(6) Legal/Reg	13
(7) Market Ops	<u>3</u>
	227
Less:	
(8) Market Ops	3
(9) Transmission Planning	
(10) MAPP FTE's	<u>37</u>
(11) Day 1 Headcount	<u><u>187</u></u>

MISO Annual Operating Expense

	(A)	(B)	(C)	(D)	
	<u>Dec-02</u>	<u>Annualized</u>	<u>2002 Form 1</u>	<u>"Day 1"</u>	(Basis)
(1) Salaries/benefits	\$ 2,216,413	\$ 26,596,956	\$ 24,530,838	\$ 26,596,956	Annualized
(2) Outside services	\$ 977,323	\$ 11,727,876	\$ 8,910,654	\$ 8,910,654	Actual
(3) Occupancy	\$ 296,001	\$ 3,552,012	\$ 3,214,346	\$ 3,552,012	Annualized
(4) Insurance	\$ 276,336	\$ 3,316,032	\$ 2,982,254	\$ 2,982,254	Actual
(5) Supplies/other	\$ 1,054,251	\$ 12,651,012	\$ 9,487,711	\$ 9,487,711	Actual
(6) <u>Taxes</u>	<u>\$ 64,586</u>	<u>\$ 775,032</u>	<u>\$ 1,248,418</u>	<u>\$ 1,248,418</u>	Actual
(7) Sub-total	\$ 4,884,910	\$ 58,618,920	\$ 50,374,221	\$ 52,778,005	
(8) Depreciation	\$ 1,323,916	\$ 15,886,992	\$ 14,300,334	\$ 15,886,992	Annualized
(9) Amortization	\$ 818,252	\$ 9,819,024	\$ 9,819,026	\$ 9,819,026	Actual
(10) <u>Interest Expense</u>	<u>\$ 592,389</u>	<u>\$ 7,108,668</u>	<u>\$ 9,399,340</u>	<u>\$ 9,399,340</u>	Actual
(11) Sub-total	\$ 2,734,557	\$ 32,814,684	\$ 33,518,700	\$ 35,105,358	
(12) TOTAL	<u>\$ 7,619,467</u>	<u>\$ 91,433,604</u>	<u>\$ 83,892,921</u>	<u>\$ 87,883,363</u>	
Less:					
(13) Market Ops	\$ 79,777	\$ 945,582		\$ 945,582	
(14) Transmission Planning	\$ 260,580	\$ 3,126,960		\$ 3,126,960	
(15) MAPPCOR Contract Expense		\$ 6,054,995		<u>\$ 6,054,995</u>	
(16) Total MISO Day 1 Expenses				<u>\$ 77,755,826</u>	
(17) Load - MWh of peak demand				569,642,179	
(18) Cost/MWh of peak demand				\$ 0.1365	
(19) Load - MWh of energy				343,816,582	
(20) Cost/MWh of energy				\$ 0.2262	

ERCOT Summary

RTO Investment Cost

(1)	Transmission Service Provider	\$ 59,740,106
(2)	Transmission Support	\$ 18,034,749
(3)	Reliability	\$ 4,508,687
(4)	Management	\$ 1,011,331
(5)	Building	\$ 30,655,674
(6)	Total	\$ 113,950,547

References

Page 11 - ERCOT Assets 2002: Column (C), Line (7)
 Page 11 - ERCOT Assets 2002: Column (D), Line (7)
 Page 11 - ERCOT Assets 2002: Column (E), Line (7)
 Page 11 - ERCOT Assets 2002: Column (F), Line (7)
 Page 11 - ERCOT Assets 2002: Column (G), Line (2)
 Sum Lines (1) through (5)

(7) Number of Employees 188 Page 12 - ERCOT 2002 FTEs: Column (E), Line (30)

Estimated Annual Operating Expense

(8)	Est. Labor Cost(Avg. Ann. Sal.) <u>1/</u>	\$ 17,870,915	Page 13 - ERCOT Op Expense, Column (D), Line (6) divided by 296, times Line (7), above
(9)	Depreciation <u>2/</u>	\$ 18,671,120	Page 11 - ERCOT Assets 2002: Column (H), Line (6)
(10)	O&M <u>3/</u>	\$ 7,378,749	Page 13 - ERCOT Op Expense, Column (D), Line (10) divided by 296, times Line (7) above, plus ERCOT Op Expense, Column (D), Line (11)
(11)	Other Expenses <u>4/</u>	\$ 12,954,043	Page 13 - ERCOT Op Expense, Column (D), sum of Line (8) and Line (9), times allocated labor ratio (188/296)
(12)	Interest Expense <u>5/</u>	\$ 7,323,049	Line (6) multiplied by 2 less Line (9), divided by 2, multiplied by 7%.
(13)	Total	\$ 64,197,876	Sum Lines (8) through (12)

ERCOT Capital Assets by Function - 2002

(A) Asset	(B) EOY 2002	(C) TSP	(D) TSP Support	(E) Reliability	(F) Management	(G) Total (C) - (F)	Depr. Rate	(H) Depreciation
(1) Computer Equipment and software	\$ 124,576,000	\$ 57,560,110	\$ 17,376,637	\$ 4,344,159	\$ 410,000		5	\$ 15,938,181
(2) Buildings and leasehold	\$ 48,170,000	\$ 18,543,249	\$ 5,597,962	\$ 1,399,490	\$ 5,114,973	\$ 30,655,674	15	\$ 2,043,712
(3) Furniture and fixtures	\$ 5,286,000	\$ 2,034,868	\$ 614,300	\$ 153,575	\$ 561,298		5	\$ 672,808
(4) Land and improvements	\$ 248,000	\$ 95,469	\$ 28,821	\$ 7,205	\$ 26,334		0	
(5) Vehicles	\$ 129,000	\$ 49,659	\$ 14,991	\$ 3,748	\$ 13,698		5	\$ 16,419
(6) Total	\$ 178,409,000	\$ 78,283,355	\$ 23,632,711	\$ 5,908,178	\$ 6,126,303	\$ 113,950,547		\$ 18,671,120
(7)		\$ 59,740,106	\$ 18,034,749	\$ 4,508,687	\$ 1,011,331			
(8) Depreciation and amortization	\$ (43,207,000)							
(9)	\$ 135,202,000							
(10) CWIP	\$ 85,000							
(11) Systems under development	\$ 11,799,000							
	\$ 147,086,000							

**ERCOT Staffing Summary by Division and Department
FY 2002**

	(A)	(B)	(C)	(D)	(E)	(F)
Corporate Administration				System Operations		
(1)	101 Executive Organization	7		201 Chief Operating Officer Administration	0	
(2)	110 Finance	10		400 COO Administration	0	
(3)	120 General Counsel	4		401 Technical Operations Administration	1	
(4)	130 Human Resources	3		410 Market Operations Support	12	
(5)	140 NERC Compliance	4		420 Operations Support	59	
(6)	150 Stakeholder Services	3		425 System Operations	0	
(7)	160 Corporate Communications	2		430 System Planning	11	
(8)	170 Market Rules	2		440 Resource Planning	0	
(9)	TOTAL	35		TOTAL	83	
Information Technology				Market Operations		
(10)	300 CIO Administration	0		500 CMO Administration	0	0
(11)	301 Technology Services Administrat	2		501 Settlements Administration	4	
(12)	310 System Engineering & Administr	43	15	505 Galvin PM	0	
(13)	320 EMS	11		510 Customer Solutions Support	4 *	
(14)	321 IT Operations	0		520 Registration	17	4
(15)	325 Facilities	0		530 Settlement Metering	18	
(16)	330 Network	22	8	540 Load Profiling and Data Aggregation	6	
(17)	340 Commercial Applications	14		550 Settlements and Billing	14	
(18)	345 EMMS Development	0		560 Client Relations	17	
(19)	350 Project Management	2		570 REP/ESI-ID of Record	0	
(20)	353 Market Technology Service	0		580 Renewables and TCR	4	
(21)	354 Data Warehousing	0		605 Gruber PM	0	
(22)	355 Development & Architecture	0		630 Retail Documentation and Reporting	0 *	
(23)	356 Transaction Services	0		640 Retail Testing and Quality Control	0 *	
(24)	357 Corporate Applications	0		650 Retail Client Services	0 *	
(25)	358 Web and Data Services	0		660 Wholesale Client Services	0 *	
(26)	359 Settlement and Billing	0		TOTAL	84	
(27)	360 Data Management	0	0			
(28)	370 Cyber Security	0		ERCOT TOTAL	296	Avg. Ann. Sal. \$ 94,868
(29)	371 Physical Security	0		ERCOT Day One	188	
(30)	385 IT Delivery	0				
(31)	390 IT Operations 2	0				
(32)	395 EMMS Production	0				
(33)	TOTAL	94				

0.64

Direct Day One Labor	101	34%	Allocated Day 1 Labor			188	64%	188
TSP	53	29%	6	54	=	114	38%	60%
TSP Support	16	9%	2	16	=	34	12%	18%
Reliability	4	2%	0	4	=	9	3%	5%
Management	28	15%	3		=	31	11%	17%
Allocated to ALL	22							
Allocated TSP/Supp/Rel. portion			75					

Electric Reliability Council of Texas, Inc.
Statements of Activity
(in 000's)

(A)	(B) 12/31/2000 Actual	(C) 12/31/2001 Actual	(D) 12/31/2002 Actual	(E) 12/31/2003 Actual-Unaudited
(1) Operating Revenues:				
(2) Transaction Fees	\$ 42,167	\$ 59,958	\$ 61,456	\$ 93,991
(3) Membership Fees and other	\$ 1,681	\$ 5,507	\$ 3,630	\$ 3,252
(4) Total Operating Revenue	<u>\$ 43,848</u>	<u>\$ 65,465</u>	<u>\$ 65,086</u>	<u>\$ 97,243</u>
(5) Operating Expenses				
(6) Salaries and Related Benefits	\$ 7,702	\$ 21,382	\$ 28,081	\$ 35,920
(7) Depreciation and Amortization	\$ 289	\$ 11,242	\$ 31,480	\$ 38,091
(8) Facility and Equipment Costs	\$ 2,005	\$ 7,170	\$ 6,347	\$ 8,175
(9) Consulting and Legal Services	\$ 4,459	\$ 6,886	\$ 14,008	\$ 12,089
(10) Administrative and Other	\$ 2,944	\$ 7,056	\$ 4,811	\$ 5,392
(11) IT Maintenance and Licensing	\$ 1,042	\$ 428	\$ 4,317	\$ 5,383
(12) Total Operating Expenses	<u>\$ 18,441</u>	<u>\$ 54,164</u>	<u>\$ 89,044</u>	<u>\$ 105,050</u>
(13) Income From Operations	<u>\$ 25,407</u>	<u>\$ 11,301</u>	<u>\$ (23,958)</u>	<u>\$ (7,807)</u>
(14) Other Income				
(15) Interest Income	\$ 331	\$ 370	\$ 1,208	\$ 433
(16) Interest Expense	\$ -	\$ (1,471)	\$ (5,448)	\$ (8,533)
(17) Change in unrestricted net assets	<u>\$ 25,738</u>	<u>\$ 10,200</u>	<u>\$ (28,198)</u>	<u>\$ (15,907)</u>
(18) Full Time Employees	134	267	296	380

SPP Summary

RTO Investment Cost

(1)	Transmission Service Provider	\$ 22,307,139
(2)	Transmission Support	\$ 3,040,533
(3)	Reliability	\$ 5,670,751
(4)	Management	\$ 2,256,707
(5)	Building	\$ 5,059,774
(6)	Total	\$ 38,334,905

References

Page 15 - SPP Fixed Assets: sum Col. (C) Line (16), Col. (C) Line (24) and Col. (F) Line (16)
 Page 15 - SPP Fixed Assets: sum Col. (G) Line (16) and Col. (D) Line (24)
 Page 15 - SPP Fixed Assets: sum Col. (D) Line (16), Col. (H) Line (16) and Col. (F) Line (24)
 Page 15 - SPP Fixed Assets: sum Col. (B) Line (16) and Col. (E) Line (24)
 Page 16 - SPP Building Costs: Column (E) Line (16)
 Sum Lines (1) through (5)

(7) Number of Employees 140 Page 19 - SPP Op Budget: Column (H) Line (117)

Estimated Annual Operating Expense

(8)	Est. Labor Cost(Avg. Ann. Sal.) <u>1/</u>	\$ 19,291,633
(9)	Depreciation <u>2/</u>	\$ 6,992,344
(10)	O&M <u>3/</u>	\$ 5,037,724
(11)	Other Expenses <u>4/</u>	\$ 1,536,570
(12)	Interest Expense <u>5/</u>	\$ 2,438,711
(13)	Total	\$ 35,296,983

Page 19 - SPP Op Budget: Column (H) Line (116)
 Sum Lines (1) through (4), divided by 5 years, plus Line (5) divided by 15 years
 Page 19 - SPP Op Budget: Sum Column (J) Line (116) and Column (K) Line (116)
 Line (8) times 7.65%, plus Line (7) times \$7,000 times 6.2%
 Line (6) multiplied by 2 less Line (9), divided by 2, multiplied by 7%.
 Sum Lines (8) through (12)

SPP (non-market) Summary

RTO Investment Cost

(14)	Transmission Service Provider	\$ 1,466,682
(15)	Transmission Support	\$ 3,040,533
(16)	Reliability	\$ 5,670,751
(17)	Management	\$ 2,256,707
(18)	Building	\$ 5,059,774
(19)	Total	\$ 17,494,447

References

Page 15 - SPP Fixed Assets: sum Col. (C) Line (24) and Col. (F) Line (16)
 Page 15 - SPP Fixed Assets: sum Col. (G) Line (16) and Col. (D) Line (24)
 Page 15 - SPP Fixed Assets: sum Col. (D) Line (16), Col. (H) Line (16) and Col. (F) Line (24)
 Page 15 - SPP Fixed Assets: sum Col. (B) Line (16) and Col. (E) Line (24)
 Page 16 - SPP Building Costs: Column (E) Line (16)
 Sum Lines (1) through (5)

(20) Number of Employees 109 Page 19 - SPP Op Budget: Column (H) Line (118)

Estimated Annual Operating Expense

(21)	Est. Labor Cost(Avg. Ann. Sal.) <u>1/</u>	\$ 15,061,253
(22)	Depreciation <u>2/</u>	\$ 2,824,253
(23)	O&M <u>3/</u>	\$ 2,943,063
(24)	Other Expenses <u>4/</u>	\$ 1,199,492
(25)	Interest Expense <u>5/</u>	\$ 1,125,762
(26)	Total	\$ 23,153,824

Page 19 - SPP Op Budget: Column (H) Line (122)
 Sum Lines (14) through (17), divided by 5 years, plus Line (18) divided by 15 years
 Page 19 - SPP Op Budget: Sum Column (J) Line (119) and Column (K) Line (119)
 Line (21) times 7.65%, plus Line (20) times \$7,000 times 6.2%
 Line (19) multiplied by 2 less Line (22), divided by 2, multiplied by 7.0%.
 Sum Lines (21) through (25)

**Southwest Power Pool - 2003
Investment Cost**

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
Sum of 12/31/2003 Ending Cost	Function								
Project	Management	Market	Reliability	Split	Transmission Service Provision	Transmission Support	Regional Reliability	Total	
(1) Administration	\$1,035,567.98							\$29,463.24	\$1,065,031.22
(2) AEP Project						\$44,095.00			\$44,095.00
(3) Business Continuity			\$259,690.27						\$259,690.27
(4) Business Systems	\$168,171.56								\$168,171.56
(5) Computer Room Expansion				\$1,246,447.20					\$1,246,447.20
(6) Control Room Infrastructure		\$26,200.00		\$631,476.35			\$42,666.00		\$700,342.35
(7) EMS Enhancements			\$1,621,434.78	\$444,803.38					\$2,066,238.16
(8) EMS Implementation			\$2,692,652.00	\$36,500.00					\$2,729,152.00
(9) Enhance Energy Scheduling							\$2,727,441.62		\$2,727,441.62
(10) Enterprise Security	\$39,841.00			\$273,106.12		\$55,031.00			\$367,978.12
(11) IT Architecture				\$196,139.06					\$196,139.06
(12) Market Systems		\$20,814,257.75							\$20,814,257.75
(13) OASIS						\$637,794.32			\$637,794.32
(14) Operating Reserve Sharing			\$85,402.00						\$85,402.00
(15) Transmission Planning			\$166,950.00						\$166,950.00
(16) Total	\$1,243,580.54	\$20,840,457.75	\$4,826,129.05	\$2,828,472.11	\$736,920.32	\$2,770,107.62	\$29,463.24	\$33,275,130.63	

	Split Items	TSP	Support	Management	Reliability
(17) Computer Room Expansion	\$1,246,447.20	\$ 321,590	\$ 119,171	\$ 446,463	\$ 359,223
(18) Control Room Infrastructure	\$631,476.35	\$ 162,924	\$ 60,374	\$ 226,188	\$ 181,990
(19) EMS Enhancements	\$444,803.38	\$ 114,762	\$ 42,527	\$ 159,323	\$ 128,191
(20) EMS Implementation	\$36,500.00	\$ 9,417	\$ 3,490	\$ 13,074	\$ 10,519
(21)	\$ -	\$ -	\$ -	\$ -	\$ -
(22) Enterprise Security	\$273,106.12	\$ 70,463	\$ 26,111	\$ 97,823	\$ 78,709
(23) IT Architecture	\$196,139.06	\$ 50,605	\$ 18,753	\$ 70,255	\$ 56,527
(24) TOTAL	\$2,828,472.11	\$ 729,761	\$ 270,426	\$ 1,013,126	\$ 815,159

37.37%

SPP Lease Data

	(A) Period	(B) Prior Rent per Month	(C) Scheduled Rate Increase	(D) Current Rent Rate	(E) Total Rent for the Period	(F) Annual Cost per Sq. Ft.
(1)	Jan - Sept. 2003	\$ 47,625	-	\$	\$ 428,629	\$ 15.13
(2)	Oct. 2003 - Oct. 2004	\$ 47,625	3%	\$ 49,054	\$ 588,651	\$ 15.58
(3)	Oct. 2004 - Oct. 2005	\$ 49,054	3%	\$ 50,526	\$ 606,311	\$ 16.05
(4)	Oct. 2005 - Oct. 2006	\$ 50,526	3%	\$ 52,042	\$ 624,500	\$ 16.53
(5)	Oct. 2006 - Oct. 2007	\$ 52,042	3%	\$ 53,603	\$ 643,235	\$ 17.03
(6)	Oct. 2007 - Oct. 2008	\$ 53,603	3%	\$ 55,211	\$ 662,532	\$ 17.54
(7)	Oct. 2008 - Oct. 2009	\$ 55,211	3%	\$ 56,867	\$ 682,408	\$ 18.07
(8)	Oct. 2009 - Oct. 2010	\$ 56,867	3%	\$ 58,573	\$ 702,880	\$ 18.61
(9)	Oct. 2010 - Oct. 2011	\$ 58,573	3%	\$ 60,331	\$ 723,967	\$ 19.17
(10)	2012	\$ 60,331	3%	\$ 62,140	\$ 745,686	\$ 19.74
(11)	2013	\$ 62,140	3%	\$ 64,005	\$ 768,056	\$ 20.33
(12)	2014	\$ 64,005	3%	\$ 65,925	\$ 791,098	\$ 20.94
(13)	2015	\$ 65,925	3%	\$ 67,903	\$ 814,831	\$ 21.57
(14)	2016	\$ 67,903	3%	\$ 69,940	\$ 839,276	\$ 22.22
(15)	2017	\$ 69,940	3%	\$ 72,038	\$ 864,454	\$ 22.89
(16)		Net Present Value =		\$421,647.86	\$5,059,774.27	10%
(17)		(A) Total Rent for the REMAINING Life of the Lease		\$	6,408,798	Sum of Rents from 1/2003 to 1/2012
(18)		(B) Average MONTHLY Rent for the REMAINING Life of		\$	61,036	(A) divided by 105 months
(19)		(C) Square Footage Occupied		\$	37,773	
(20)		(D) Average ANNUAL Cost per Square Foot		\$	19.39	((B)*12)/(C)

	A	B	C	D	E	F	G	H
1								
2								
3	Sum of FTEs	Corporate Function						
4	Departmental Function	Management	Markets	Regional Reliability	Reliability	Transmission Service Provider	Transmission Support	Grand Total
5	ADMINISTRATIVE	7.85						7.85
6	BUSINESS APPLICATIONS	0.2				1		1.2
7	BUSINESS ARCHITECTURE & STRATEGY	1.1						1.1
8	BUSINESS INFRASTRUCTURE	6.1						6.1
9	BUSINESS PROJECT MANAGEMENT	0.2						0.2
10	CHANGE MANAGEMENT	1.5						1.5
11	COMPLIANCE			1				1
12	CORPORATE AFFAIRS	0.25						0.25
13	CUSTOMER RELATIONS	0.7						0.7
14	EMS APPLICATIONS				4	0.5		4.5
15	ENGINEERING MANAGEMENT	1.75			0.5			2.25
16	FINANCE & ACCOUNTING	4.55						4.55
17	FINANCIAL ANALYSIS & PROCESS IMPROVEMENT	1						1
18	GOVERNMENT RELATIONS	0.5						0.5
19	HUMAN RESOURCES	2						2
20	INTERCONNECTION ENGINEERING					2		2
21	IT MANAGEMENT	2.2						2.2
22	LEGAL	1.5						1.5
23	MARKET ANALYSIS		4					4
24	MARKET MANAGEMENT		2.25					2.25
25	MARKET OPERATIONS		7.75					7.75
26	MARKET SUPPORT		13.2					13.2
27	MEMBER RELATIONS	0.3						0.3
28	NETWORK MODELS				2.5	0.5		3
29	OFFICE & FACILITIES	2.5						2.5
30	OPERATIONS ENGINEERING			0.25	2.95	2		5.2
31	OPERATIONS MANAGEMENT	0.35						0.35
32	REGIONAL SUPPORT & SCHEDULING			0.5				0.5
33	RELIABILITY AUTHORITY			0.25	8.05			8.3
34	RELIABILITY ENGINEERING			2				2
35	SCHEDULING			1			9.45	10.45
36	SETTLEMENTS		3			2.85		5.85
37	TARIFF ADMINISTRATION	2		0.25		11.85		14.1
38	TECH SUPPORT				1.75	0.5	1	3.25
39	TRAINING	0.5	0.5					1
40	TRANSMISSION ENGINEERING					4		4
41	TRANSMISSION PLANNING				6.5			6.5
42	TRANSMISSION POLICY	2				3		5
43	TREASURY	0.1						0.1
44	Grand Total	39.15	30.7	5.25	26.25	28.2	10.45	140
45								
47					Mgmt FTEs		39.15	36%
48					TSP FTEs		28.2	26%
49					Reliability FTEs		31.5	29%
50					Transmission Support FTEs		10.45	10%
51					Total Non-market FTEs		109.3	
52					Markets FTEs		30.7	

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	SPP Budget							Salary, Travel, Meetings, Comm	NERC	Admin	L&M	Services		
2	Personnel	Corporate Function	Departmental Function	Op Budget	FTEs			19,291,638	800,000	492,647	1,148,389	7,573,680		
3	Accounting	Management	ADMINISTRATIVE	149,519	1	0.71%	137,797			3,519	8,203			
4	Carl Monroe	Management	ADMINISTRATIVE	37,380	0.25	0.18%	34,449			880	2,051			
5	Cheryl Robertson	Management	ADMINISTRATIVE	149,519	1	0.71%	137,797			3,519	8,203			
6	Customer Service	Management	ADMINISTRATIVE	14,952	0.1	0.07%	13,780			352	820			
7	HR	Management	ADMINISTRATIVE	528,137	3	2.14%	413,392			10,557	24,608	79,580		
8	Karen Thomas	Management	ADMINISTRATIVE	112,139	0.75	0.54%	103,348			2,639	6,152			
9	Keith Dover	Management	ADMINISTRATIVE	74,759	0.5	0.36%	68,899			1,759	4,101			
10	Nick Brown	Management	ADMINISTRATIVE	989,839	0.75	0.54%	103,348			780,339	6,152	100,000		
11	Stacy Duckett	Management	ADMINISTRATIVE	37,380	0.25	0.18%	34,449			880	2,051			
12	Tom Dunn	Management	ADMINISTRATIVE	37,380	0.25	0.18%	34,449			880	2,051			
13	Accounting	Transmission Service Provider	BUSINESS APPLICATIONS	149,519	1	0.71%	137,797			3,519	8,203			
14	Kevin Perry	Management	BUSINESS APPLICATIONS	29,904	0.2	0.14%	27,559			704	1,641			
15	Kevin Perry	Management	BUSINESS ARCHITECTURE & S	44,856	0.3	0.21%	41,339			1,056	2,461			
16	Security	Management	BUSINESS ARCHITECTURE & S	119,615	0.8	0.57%	110,238			2,815	6,562			
17	Infrastructure	Management	BUSINESS INFRASTRUCTURE	619,702	4	2.86%	551,190			14,076	32,811	21,625		
18	Kevin Perry	Management	BUSINESS INFRASTRUCTURE	14,952	0.1	0.07%	13,780			352	820			
19	Security	Management	BUSINESS INFRASTRUCTURE	304,039	2	1.43%	275,595			7,038	16,406	5,000		
20	Kevin Perry	Management	BUSINESS PROJECT MANAGEN	29,904	0.2	0.14%	27,559			704	1,641			
21	Keith Dover	Management	CHANGE MANAGEMENT	74,759	0.5	0.36%	68,899			1,759	4,101			
22	Tech Developer	Management	CHANGE MANAGEMENT	149,519	1	0.71%	137,797			3,519	8,203			
23	Ron Ciesiel	Regional Reliability	COMPLIANCE	359,519	1	0.71%	137,797			3,519	8,203	210,000		
24	Stacy Duckett	Management	CORPORATE AFFAIRS	59,380	0.25	0.18%	34,449			880	2,051	22,000		
25	RJ Robertson	Management	CUSTOMER RELATIONS	104,663	0.7	0.50%	96,458			2,463	5,742			
26	Applications	Reliability	EMS APPLICATIONS	448,557	3	2.14%	413,392			10,557	24,608			
27	Applications	Transmission Service Provider	EMS APPLICATIONS	608,248	0.5	0.36%	68,899			1,759	537,590			
28	Ops Engineering	Reliability	EMS APPLICATIONS	149,519	1	0.71%	137,797			3,519	8,203			
29	Bruce Rew	Management	ENGINEERING MANAGEMENT	74,759	0.5	0.36%	68,899			1,759	4,101			
30	Les Dillahunty	Management	ENGINEERING MANAGEMENT	37,380	0.25	0.18%	34,449			880	2,051			
31	Planning	Reliability	ENGINEERING MANAGEMENT	74,759	0.5	0.36%	68,899			1,759	4,101			
32	Sherry Jensen	Management	ENGINEERING MANAGEMENT	149,519	1	0.71%	137,797			3,519	8,203			
33	Accounting	Management	FINANCE & ACCOUNTING	598,077	4	2.86%	551,190			14,076	32,811			
34	Tom Dunn	Management	FINANCE & ACCOUNTING	82,236	0.55	0.39%	75,789			1,935	4,512			
35	Accounting	Management	FINANCIAL ANALYSIS & PROCE	149,519	1	0.71%	137,797			3,519	8,203			
36	Les Dillahunty	Management	GOVERNMENT RELATIONS	37,380	0.25	0.18%	34,449			880	2,051			
37	Nick Brown	Management	GOVERNMENT RELATIONS	37,380	0.25	0.18%	34,449			880	2,051			
38	HR	Management	HUMAN RESOURCES	323,039	2	1.43%	275,595			7,038	16,406	24,000		
39	Tariff Studies	Transmission Service Provider	INTERCONNECTION ENGINEER	299,039	2	1.43%	275,595			7,038	16,406			
40	Applications	Management	IT MANAGEMENT	149,519	1	0.71%	137,797			3,519	8,203			
41	Carl Monroe	Management	IT MANAGEMENT	37,380	0.25	0.18%	34,449			880	2,051			
42	Infrastructure	Management	IT MANAGEMENT	96,384	0.5	0.36%	68,899			1,759	4,101	21,625		
43	Kevin Perry	Management	IT MANAGEMENT	29,904	0.2	0.14%	27,559			704	1,641			
44	Tech Developer	Management	IT MANAGEMENT	37,380	0.25	0.18%	34,449			880	2,051			
45	Laurie Guinn	Management	LEGAL	149,519	1	0.71%	137,797			3,519	8,203			
46	Stacy Duckett	Management	LEGAL	134,759	0.5	0.36%	68,899			1,759	4,101	60,000		
47	Market Dev and A	Markets	MARKET ANALYSIS	898,077	4	2.86%	551,190			14,076	32,811	300,000		
48	Market Dev and A	Markets	MARKET MANAGEMENT	74,759	0.5	0.36%	68,899			1,759	4,101			
49	Richard Dillon	Markets	MARKET MANAGEMENT	149,519	1	0.71%	137,797			3,519	8,203			
50	Tech Developer	Markets	MARKET MANAGEMENT	112,139	0.75	0.54%	103,348			2,639	6,152			
51	Carl Monroe	Markets	MARKET OPERATIONS	37,380	0.25	0.18%	34,449			880	2,051			
52	Market Dev and A	Markets	MARKET OPERATIONS	6,420,591	0.5	0.36%	68,899			1,759	1,779,933	4,570,000		
53	Market Operations	Markets	MARKET OPERATIONS	1,046,633	7	5.00%	964,582			24,632	57,419			
54	Applications	Markets	MARKET SUPPORT	373,798	2.5	1.79%	344,494			8,797	20,507			
55	Customer Service	Markets	MARKET SUPPORT	254,183	1.7	1.21%	234,256			5,982	13,945			
56	Infrastructure	Markets	MARKET SUPPORT	208,524	1.25	0.89%	172,247			4,399	10,253	21,625		
57	Karen Thomas	Markets	MARKET SUPPORT	37,380	0.25	0.18%	34,449			880	2,051			
58	Market Dev and A	Markets	MARKET SUPPORT	149,519	1	0.71%	137,797			3,519	8,203			
59	Tech Developer	Markets	MARKET SUPPORT	747,596	5	3.57%	688,987			17,595	41,014			
60	Training	Markets	MARKET SUPPORT	224,278	1.5	1.07%	206,696			5,278	12,304			

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
61	RJ Robertson	Management	MEMBER RELATIONS	44,856	0.3	0.21%		41,339		1,056	2,461			
62	Applications	Reliability	NETWORK MODELS	734,759	0.5	0.36%		68,899		1,759	4,101	660,000		
63	Applications	Transmission Service Provider	NETWORK MODELS	74,759	0.5	0.36%		68,899		1,759	4,101			
64	Ops Engineering	Reliability	NETWORK MODELS	299,039	2	1.43%		275,595		7,038	16,406			
65	Security	Management	OFFICE & FACILITIES	154,519	1	0.71%		137,797		3,519	8,203	5,000		
66	Telecomm	Management	OFFICE & FACILITIES	224,278	1.5	1.07%		206,696		5,278	12,304			
67	Lanny Nickell	Reliability	OPERATIONS ENGINEERING	29,904	0.2	0.14%		27,559		704	1,641			
68	Ops Engineering	Regional Reliability	OPERATIONS ENGINEERING	37,380	0.25	0.18%		34,449		880	2,051			
69	Ops Engineering	Reliability	OPERATIONS ENGINEERING	411,178	2.75	1.96%		378,943		9,677	22,558			
70	Ops Engineering	Transmission Service Provider	OPERATIONS ENGINEERING	299,039	2	1.43%		275,595		7,038	16,406			
71	Carl Monroe	Management	OPERATIONS MANAGEMENT	37,380	0.25	0.18%		34,449		880	2,051			
72	Lanny Nickell	Management	OPERATIONS MANAGEMENT	14,952	0.1	0.07%		13,780		352	820			
73	Lanny Nickell	Regional Reliability	REGIONAL SUPPORT & SCHED	44,856	0.3	0.21%		41,339		1,056	2,461			
74	Security	Regional Reliability	REGIONAL SUPPORT & SCHED	29,904	0.2	0.14%		27,559		704	1,641			
75	Customer Service	Reliability	RELIABILITY AUTHORITY	14,952	0.1	0.07%		13,780		352	820			
76	Lanny Nickell	Reliability	RELIABILITY AUTHORITY	829,904	0.2	0.14%		27,559	800,000	704	1,641			
77	Reliability Coor	Regional Reliability	RELIABILITY AUTHORITY	37,380	0.25	0.18%		34,449		880	2,051			
78	Reliability Coor	Reliability	RELIABILITY AUTHORITY	1,009,255	6.75	4.82%		930,133		23,753	55,369			
79	Training	Reliability	RELIABILITY AUTHORITY	149,519	1	0.71%		137,797		3,519	8,203			
80	Planning	Regional Reliability	RELIABILITY ENGINEERING	299,039	2	1.43%		275,595		7,038	16,406			
81	Applications	TSP Support	SCHEDULING	299,039	2	1.43%		275,595		7,038	16,406			
82	Customer Service	TSP Support	SCHEDULING	14,952	0.1	0.07%		13,780		352	820			
83	Lanny Nickell	TSP Support	SCHEDULING	14,952	0.1	0.07%		13,780		352	820			
84	Scheduling	Regional Reliability	SCHEDULING	149,519	1	0.71%		137,797		3,519	8,203			
85	Scheduling	TSP Support	SCHEDULING	1,426,633	7	5.00%		964,582		24,632	57,419	380,000		
86	Training	TSP Support	SCHEDULING	37,380	0.25	0.18%		34,449		880	2,051			
87	Accounting	Markets	SETTLEMENTS	550,557	3	2.14%		413,392		10,557	126,608			
88	Accounting	Transmission Service Provider	SETTLEMENTS	299,039	2	1.43%		275,595		7,038	16,406			
89	Applications	Transmission Service Provider	SETTLEMENTS	74,759	0.5	0.36%		68,899		1,759	4,101			
90	Infrastructure	Transmission Service Provider	SETTLEMENTS	59,005	0.25	0.18%		34,449		880	2,051	21,625		
91	Tom Dunn	Transmission Service Provider	SETTLEMENTS	14,952	0.1	0.07%		13,780		352	820			
92	AEP Project	Management	TARIFF ADMINISTRATION	299,039	2	1.43%		275,595		7,038	16,406			
93	Applications	Transmission Service Provider	TARIFF ADMINISTRATION	373,798	2.5	1.79%		344,494		8,797	20,507			
94	Customer Service	Transmission Service Provider	TARIFF ADMINISTRATION	299,039	2	1.43%		275,595		7,038	16,406			
95	Infrastructure	Transmission Service Provider	TARIFF ADMINISTRATION	59,005	0.25	0.18%		34,449		880	2,051	21,625		
96	Lanny Nickell	Transmission Service Provider	TARIFF ADMINISTRATION	14,952	0.1	0.07%		13,780		352	820			
97	Tariff Administrati	Regional Reliability	TARIFF ADMINISTRATION	50,080	0.25	0.18%		34,449		880	2,051	12,700		
98	Tariff Administrati	Transmission Service Provider	TARIFF ADMINISTRATION	1,009,255	6.75	4.82%		930,133		23,753	55,369			
99	Training	Transmission Service Provider	TARIFF ADMINISTRATION	37,380	0.25	0.18%		34,449		880	2,051			
100	Infrastructure	Reliability	TECH SUPPORT	208,524	1.25	0.89%		172,247		4,399	10,253	21,625		
101	Infrastructure	TSP Support	TECH SUPPORT	96,409	0.5	0.36%		68,899		1,759	4,101	21,650		
102	Telecomm	Reliability	TECH SUPPORT	74,759	0.5	0.36%		68,899		1,759	4,101			
103	Telecomm	Transmission Service Provider	TECH SUPPORT	74,759	0.5	0.36%		68,899		1,759	4,101			
104	Telecomm	TSP Support	TECH SUPPORT	74,759	0.5	0.36%		68,899		1,759	4,101			
105	Katie Duncan	Management	TRAINING	74,759	0.5	0.36%		68,899		1,759	4,101			
106	Katie Duncan	Markets	TRAINING	74,759	0.5	0.36%		68,899		1,759	4,101			
107	Tariff Studies	Transmission Service Provider	TRANSMISSION ENGINEERING	598,077	4	2.86%		551,190		14,076	32,811			
108	Planning	Reliability	TRANSMISSION PLANNING	1,179,532	6.5	4.64%		895,683		22,873	260,976			
109	Bruce Rew	Management	TRANSMISSION POLICY	518,759	0.5	0.36%		68,899		1,759	4,101	444,000		
110	Jeff Price	Transmission Service Provider	TRANSMISSION POLICY	699,519	1	0.71%		137,797		3,519	8,203	550,000		
111	Les Dillahunty	Management	TRANSMISSION POLICY	74,759	0.5	0.36%		68,899		1,759	4,101			
112	Pat Bourne	Management	TRANSMISSION POLICY	149,519	1	0.71%		137,797		3,519	8,203			
113	Roy Sundman	Transmission Service Provider	TRANSMISSION POLICY	149,519	1	0.71%		137,797		3,519	8,203			
114	Tariff Studies	Transmission Service Provider	TRANSMISSION POLICY	149,519	1	0.71%		137,797		3,519	8,203			
115	Tom Dunn	Management	TREASURY	14,952	0.1	0.07%		13,780		352	820			
116				32,703,037	140	100.00%		19,291,633	800,000	1,270,351	3,767,373	7,573,680		
117								SPP Heavy Staff						
118								SPP lite Staff					Mkts	
119										95,714	1,998,947			
120										1,174,637	1,768,426			SPP Lite O&M
121														
122								Lite Staffing \$'s						

	(Ann. Peak in MW)			
	(A) <u>2001</u>	(B) <u>2002</u>	(C) <u>2003</u>	(D)=Avg. (A),(B),(C) <u>3 year Avg. **</u>
CAISO	38,975	42,352	42,581	41,303
PJM	54,014	63,762	61,499	59,758
MISO *		71,600		71,600
SPP	36,563	36,249	38,321	37,044
ERCOT	55,719	56,246	59,993	57,319
			High	71,600
			Low	37,044

* Load data has not been obtained for MISO for the 3 year period. While MISO began RTO operation in 2001, it did not fully record through public information the RTO load as compared to individual loads of the participating utilities.

** A three year average of the peak RTO loads was used in order to smooth any anomalous years.

	Net Energy		
	Load in kWhs	Ann. Expenses	\$/MWh
	(E)	(F)	(G) = ((E)/(F))*1000
PJM	349,000,000,000	\$ 77,801,693	\$ 0.223
MISO	343,816,582,000	\$ 72,856,407	\$ 0.212
SPP-H <u>1/</u>	217,420,601,200	\$ 35,296,983	\$ 0.162
SPP-L <u>1/</u>	217,420,601,200	\$ 23,153,824	\$ 0.106
ERCOT <u>2/</u>	286,206,895,200	\$ 64,197,876	\$ 0.224

1/ SPP Calculated at 67% load factor

2/ Estimate ERCOT 2003 Energy per 2003 Annual Report

Retail Costs and RTO Impact

(in cents per kWh)	2000		2001		2005 (Fcst)		Average
Production	4.20	62%	4.10	62%	3.90	60%	61%
Transmission	0.50	7%	0.50	8%	0.60	9%	8%
Distribution	2.10	31%	2.00	30%	2.00	31%	31%
Avg. End-use Prices	6.80	100%	6.60	100%	6.50	100%	100%

Source: EIA/Annual Energy Outlook 2003, page 131 - Prices by Service Category

Region State	Retail Sales of Electricity		Avg Revenue from Retail				Avg Revenue from Retail			
	EOY 2002	Avg. RTO Exp.	(Million Dollars)			Cents/kWh				
	GWh's (A)	\$ 62,538,240 Avg. RTE Exp. (B) 1/	Total (C)	Production (D)=(C)*61%	Transmission (E)=(C)*8%	Distribution (F)=(C)*31%	Total (G)=(A)/(C)	Production (H)=(A)/(D)	Transmission (I)=(A)/(E)	Distribution (J)=(A)/(F)
New England	116,614	\$ 0.0005	\$ 11,845	\$ 7,260	\$ 954	\$ 3,631	\$ 0.1016	\$ 0.0623	\$ 0.0082	\$ 0.0311
Connecticut	30,906	\$ 0.0020	3,007	\$ 1,843	\$ 242	\$ 922	\$ 0.0973	\$ 0.0596	\$ 0.0078	\$ 0.0298
Maine	9,636	\$ 0.0065	1,095	\$ 671	\$ 88	\$ 336	\$ 0.1136	\$ 0.0696	\$ 0.0091	\$ 0.0348
Massachusetts	52,410	\$ 0.0012	5,338	\$ 3,272	\$ 430	\$ 1,636	\$ 0.1018	\$ 0.0624	\$ 0.0082	\$ 0.0312
New Hampshire	10,490	\$ 0.0060	1,100	\$ 674	\$ 89	\$ 337	\$ 0.1049	\$ 0.0643	\$ 0.0084	\$ 0.0321
Rhode Island	7,544	\$ 0.0083	693	\$ 425	\$ 56	\$ 213	\$ 0.0919	\$ 0.0563	\$ 0.0074	\$ 0.0282
Vermont	5,629	\$ 0.0111	612	\$ 375	\$ 49	\$ 188	\$ 0.1087	\$ 0.0666	\$ 0.0088	\$ 0.0333
Middle Atlantic	358,811	\$ 0.0002	\$ 34,414	\$ 21,094	\$ 2,771	\$ 10,548	\$ 0.0959	\$ 0.0588	\$ 0.0077	\$ 0.0294
New Jersey	74,460	\$ 0.0008	6,930	\$ 4,248	\$ 558	\$ 2,124	\$ 0.0931	\$ 0.0571	\$ 0.0075	\$ 0.0285
New York	143,564	\$ 0.0004	16,208	\$ 9,935	\$ 1,305	\$ 4,968	\$ 0.1129	\$ 0.0692	\$ 0.0091	\$ 0.0346
Pennsylvania	140,787	\$ 0.0004	11,276	\$ 6,912	\$ 908	\$ 3,456	\$ 0.0801	\$ 0.0491	\$ 0.0065	\$ 0.0245
East North Central	569,403	\$ 0.0001	\$ 37,032	\$ 22,699	\$ 2,982	\$ 11,351	\$ 0.0650	\$ 0.0399	\$ 0.0052	\$ 0.0199
Illinois	137,666	\$ 0.0005	9,597	\$ 5,883	\$ 773	\$ 2,942	\$ 0.0697	\$ 0.0427	\$ 0.0056	\$ 0.0214
Indiana	101,429	\$ 0.0006	5,420	\$ 3,322	\$ 436	\$ 1,661	\$ 0.0534	\$ 0.0328	\$ 0.0043	\$ 0.0164
Michigan	107,311	\$ 0.0006	7,423	\$ 4,550	\$ 598	\$ 2,275	\$ 0.0692	\$ 0.0424	\$ 0.0056	\$ 0.0212
Ohio	155,999	\$ 0.0004	10,383	\$ 6,364	\$ 836	\$ 3,182	\$ 0.0666	\$ 0.0408	\$ 0.0054	\$ 0.0204
Wisconsin	66,999	\$ 0.0009	4,209	\$ 2,580	\$ 339	\$ 1,290	\$ 0.0628	\$ 0.0385	\$ 0.0051	\$ 0.0193
West North Central	259,591	\$ 0.0002	\$ 15,509	\$ 9,506	\$ 1,249	\$ 4,754	\$ 0.0597	\$ 0.0366	\$ 0.0048	\$ 0.0183
Iowa	40,898	\$ 0.0015	2,458	\$ 1,507	\$ 198	\$ 754	\$ 0.0601	\$ 0.0368	\$ 0.0048	\$ 0.0184
Kansas	36,714	\$ 0.0017	2,315	\$ 1,419	\$ 186	\$ 710	\$ 0.0631	\$ 0.0387	\$ 0.0051	\$ 0.0193
Minnesota	62,162	\$ 0.0010	3,630	\$ 2,225	\$ 292	\$ 1,113	\$ 0.0584	\$ 0.0358	\$ 0.0047	\$ 0.0179
Missouri	75,001	\$ 0.0008	4,565	\$ 2,798	\$ 368	\$ 1,399	\$ 0.0609	\$ 0.0373	\$ 0.0049	\$ 0.0187
Nebraska	25,661	\$ 0.0024	1,424	\$ 873	\$ 115	\$ 436	\$ 0.0555	\$ 0.0340	\$ 0.0045	\$ 0.0170
North Dakota	10,219	\$ 0.0061	557	\$ 341	\$ 45	\$ 171	\$ 0.0545	\$ 0.0334	\$ 0.0044	\$ 0.0167
South Dakota	8,937	\$ 0.0070	560	\$ 343	\$ 45	\$ 172	\$ 0.0626	\$ 0.0384	\$ 0.0050	\$ 0.0192
South Atlantic	753,324	\$ 0.0001	\$ 49,424	\$ 30,294	\$ 3,980	\$ 15,149	\$ 0.0656	\$ 0.0402	\$ 0.0053	\$ 0.0201
Delaware	11,557	\$ 0.0054	815	\$ 499	\$ 66	\$ 250	\$ 0.0705	\$ 0.0432	\$ 0.0057	\$ 0.0216
D.C.	11,066	\$ 0.0057	815	\$ 500	\$ 66	\$ 250	\$ 0.0737	\$ 0.0452	\$ 0.0059	\$ 0.0226
Florida	210,474	\$ 0.0003	15,394	\$ 9,436	\$ 1,240	\$ 4,718	\$ 0.0731	\$ 0.0448	\$ 0.0059	\$ 0.0224
Georgia	123,789	\$ 0.0005	7,726	\$ 4,735	\$ 622	\$ 2,368	\$ 0.0624	\$ 0.0383	\$ 0.0050	\$ 0.0191
Maryland	66,928	\$ 0.0009	4,158	\$ 2,548	\$ 335	\$ 1,274	\$ 0.0621	\$ 0.0381	\$ 0.0050	\$ 0.0190
North Carolina	122,686	\$ 0.0005	8,263	\$ 5,065	\$ 665	\$ 2,533	\$ 0.0674	\$ 0.0413	\$ 0.0054	\$ 0.0206
South Carolina	77,819	\$ 0.0008	4,537	\$ 2,781	\$ 365	\$ 1,391	\$ 0.0583	\$ 0.0357	\$ 0.0047	\$ 0.0179
Virginia	100,541	\$ 0.0006	6,262	\$ 3,838	\$ 504	\$ 1,919	\$ 0.0623	\$ 0.0382	\$ 0.0050	\$ 0.0191
West Virginia	28,463	\$ 0.0022	1,455	\$ 892	\$ 117	\$ 446	\$ 0.0511	\$ 0.0313	\$ 0.0041	\$ 0.0157
East South Central	314,019	\$ 0.0002	\$ 16,917	\$ 10,369	\$ 1,362	\$ 5,185	\$ 0.0539	\$ 0.0330	\$ 0.0043	\$ 0.0165
Alabama	83,067	\$ 0.0008	4,745	\$ 2,908	\$ 382	\$ 1,454	\$ 0.0571	\$ 0.0350	\$ 0.0046	\$ 0.0175
Kentucky	87,267	\$ 0.0007	3,721	\$ 2,281	\$ 300	\$ 1,141	\$ 0.0426	\$ 0.0261	\$ 0.0034	\$ 0.0131
Mississippi	45,452	\$ 0.0014	2,835	\$ 1,738	\$ 228	\$ 869	\$ 0.0624	\$ 0.0382	\$ 0.0050	\$ 0.0191
Tennessee	98,233	\$ 0.0006	5,616	\$ 3,442	\$ 452	\$ 1,721	\$ 0.0572	\$ 0.0350	\$ 0.0046	\$ 0.0175
West South Central	492,042	\$ 0.0001	\$ 31,142	\$ 19,088	\$ 2,508	\$ 9,545	\$ 0.0633	\$ 0.0388	\$ 0.0051	\$ 0.0194
Arkansas	42,450	\$ 0.0015	2,380	\$ 1,459	\$ 192	\$ 729	\$ 0.0561	\$ 0.0344	\$ 0.0045	\$ 0.0172
Louisiana	79,261	\$ 0.0008	4,746	\$ 2,909	\$ 382	\$ 1,455	\$ 0.0599	\$ 0.0367	\$ 0.0048	\$ 0.0184
Oklahoma	49,485	\$ 0.0013	2,765	\$ 1,695	\$ 223	\$ 847	\$ 0.0559	\$ 0.0342	\$ 0.0045	\$ 0.0171
Texas	320,846	\$ 0.0002	21,251	\$ 13,026	\$ 1,711	\$ 6,514	\$ 0.0662	\$ 0.0406	\$ 0.0053	\$ 0.0203
Mountain	226,364	\$ 0.0003	\$ 14,760	\$ 9,047	\$ 1,189	\$ 4,524	\$ 0.0652	\$ 0.0400	\$ 0.0053	\$ 0.0200
Arizona	62,601	\$ 0.0010	4,514	\$ 2,767	\$ 364	\$ 1,384	\$ 0.0721	\$ 0.0442	\$ 0.0058	\$ 0.0221
Colorado	45,937	\$ 0.0014	2,758	\$ 1,691	\$ 222	\$ 845	\$ 0.0600	\$ 0.0368	\$ 0.0048	\$ 0.0184
Idaho	20,700	\$ 0.0030	1,156	\$ 708	\$ 93	\$ 354	\$ 0.0558	\$ 0.0342	\$ 0.0045	\$ 0.0171
Montana	12,575	\$ 0.0050	724	\$ 444	\$ 58	\$ 222	\$ 0.0575	\$ 0.0353	\$ 0.0046	\$ 0.0176
Nevada	29,204	\$ 0.0021	2,460	\$ 1,508	\$ 198	\$ 754	\$ 0.0842	\$ 0.0516	\$ 0.0068	\$ 0.0258
New Mexico	19,207	\$ 0.0033	1,292	\$ 792	\$ 104	\$ 396	\$ 0.0673	\$ 0.0412	\$ 0.0054	\$ 0.0206
Utah	23,267	\$ 0.0027	1,255	\$ 769	\$ 101	\$ 385	\$ 0.0539	\$ 0.0330	\$ 0.0043	\$ 0.0165
Wyoming	12,874	\$ 0.0049	602	\$ 369	\$ 49	\$ 185	\$ 0.0468	\$ 0.0287	\$ 0.0038	\$ 0.0143
Pacific Contiguous	356,996	\$ 0.0002	\$ 36,690	\$ 22,489	\$ 2,955	\$ 11,246	\$ 0.1028	\$ 0.0630	\$ 0.0083	\$ 0.0315
California	235,249	\$ 0.0003	29,398	\$ 18,019	\$ 2,367	\$ 9,011	\$ 0.1250	\$ 0.0766	\$ 0.0101	\$ 0.0383
Oregon	45,255	\$ 0.0014	2,859	\$ 1,753	\$ 230	\$ 876	\$ 0.0632	\$ 0.0387	\$ 0.0051	\$ 0.0194
Washington	76,492	\$ 0.0008	4,433	\$ 2,717	\$ 357	\$ 1,359	\$ 0.0580	\$ 0.0355	\$ 0.0047	\$ 0.0178
Avg. Contiguous 48	383,018	\$ 0.000214	27,526	\$ 16,872	\$ 2,217	\$ 8,437	\$ 0.0719	\$ 0.0441	\$ 0.0058	\$ 0.0220

1/ Average RTO Expense (\$62.5 million) divided by GWh Load (Column (A)).

Retail Costs and RTO Impact Summary

(in cents per kWh)	(A) <u>2000</u>	(B)	(C) <u>2001</u>	(D)	(E) <u>2005 (Fcst)</u>	(F)	(G) <u>Average</u>
Production	4.20	62%	4.10	62%	3.90	60%	61%
Transmission	0.50	7%	0.50	8%	0.60	9%	8%
Distribution	<u>2.10</u>	31%	<u>2.00</u>	30%	<u>2.00</u>	31%	31%
Avg. End-use Prices	6.80	100%	6.60	100%	6.50	100%	100%

Nationwide	\$/kWh	% of Retail Bill	
Production	\$ 0.0441	61.12%	
Transmission	\$ 0.0058	8.03%	
Distribution	\$ 0.0220	30.57%	
Average RTO	\$ 0.0002	0.29%	
Total	\$ 0.0721	100.00%	Totals from Page 22 - Average Contiguous 48 States

	GWh	Total Revenue (millions)
Arizona	62,601	\$ 4,514
Colorado	45,937	\$ 2,758
New Mexico	19,207	\$ 1,292
Desert Southwest	127,744	\$ 8,564

Desert Southwest	Total Revenue by Function = \$8564 * (G)	\$/kWh = TR / total GWh	% of Retail Bill
Production	\$ 5,249	\$ 0.0411	60.85%
Transmission	\$ 690	\$ 0.0054	7.99%
Distribution	\$ 2,625	\$ 0.0205	30.43%
Average RTO = (Avg RTO/1,000,000) / Total GWh		\$ 0.0005	0.72%
		<u>\$ 0.0675</u>	<u>100%</u>

Exhibit 4

PJM Interconnection, LLC

Estimated PJM Annual Day 1 Revenue Requirement

Footnote	Expense Type	2004 Estimate	2005 Estimate
1	Depreciation	15,400,709	15,400,709
2	Interest	4,936,447	4,936,447
3	Compensation	34,852,639	49,997,229
4	Hardware Lease Expense	3,149,064	4,844,601
4	Materials & Supplies	6,619,453	10,994,935
5	Other or Outside Services Correlated with Staff Levels	8,614,841	12,054,417
6	Other or Outside Services <i>NOT</i> Correlated with Staff Levels	<u>7,411,109</u>	<u>9,060,998</u>
	Total	<u>80,984,262</u>	<u>107,289,336</u>
7	Net Energy for Load Forecast	349,000,000	700,000,000
	Day 1 OpEx Rate Per Megawatt Hour	<u>\$ 0.2320</u>	<u>\$ 0.1533</u>

- 1 Calculated as 85% of Day 1 non-building, non-EMS investment depreciated over three-year software useful life plus 15% of Day 1 non-building, non-EMS investment depreciated over five-year hardware useful life plus Day 1 building investment depreciated over fifteen-year building useful life plus Day 1 EMS investment depreciated over seven-year EMS useful life.
- 2 Calculated as average unpaid Day 1 Capital Investment times estimated 7.00% interest rate.
- 3 Based on pro ration of PJM's total budgeted 2004 Compensation for PJM's System Operations staff plus pro rated management staff totaling 263 in 2004 and 328 in 2005.
- 4 Calculated as pro rated portion of 2004 budgeted expense associated with staff allocated to Day 1 Operations.
- 5 Calculated as pro rated portion of annual budgeted expenses for lodging, travel, meetings, meals, training, telecommunications, buildings maintenance and utilities associated with staff allocated to Day 1 Operations.
- 6 Represents annual budget for insurance, board expenses, annual member meeting, audit fees, property and school taxes, and bank fees that do not vary by staff number or customer transaction volumes.
- 7 Based on PJM's annual budget assumptions and volume forecasts on PJM Finance Committee page of web site.

Estimated PJM Day 1 Staff

Based on 2004 Annual Budget

	Directly Attributable to Day 1 Functions	Not Attributable to Day 1 Functions	Management / Support Functions	Total
System Operations	114			114
Transmission Planning		38		38
Market Services		52		52
Information Technology			129	129
Corporate Services			39	39
Finance			87	87
Market Monitoring		10		10
Office of the President			24	24
Subtotal	114	100	279	493
Management Allocation	149	130	(279)	0
Totals	263	230	0	493

Based on Proposed 2005 Annual Budget

	Directly Attributable to Day 1 Functions	Not Attributable to Day 1 Functions	Management / Support Functions	Total
System Operations	148			148
Transmission Planning		56		56
Market Services		72		72
Information Technology			169	169
Corporate Services			100	100
Finance			25	25
Market Monitoring		17		17
Office of the President			63	63
Subtotal	148	145	357	650
Management Allocation	180	177	(357)	0
Totals	328	322	0	650

Estimated PJM Day 1 Capital Investment

<i>Portion of System Investment Attributable to Each RTO Day 1 Function</i>	Transmission Service Provider	Transmission Support	Reliability	Management	Building	Total
ACES / TMS			106,417			106,417
Buildings					10,600,000	10,600,000
Business Continuity	5,772,673					5,772,673
Combined OASIS / EES Interface	672,678					672,678
Control Center Infrastructure					446,712	446,712
Data Publication Extension		272,509				272,509
Energy Management System	25,994,325	11,451,914				37,446,239
Enterprise Security				3,837,498		3,837,498
Grid Accounting		34,551				34,551
Independent Generator Communications			1,163,538			1,163,538
Internet Network Architecture				377,152		377,152
Network Infrastructure Upgrade				1,155,092		1,155,092
OASIS	748,027	1,496,050				2,244,077
Operator Training Simulator	128,219					128,219
PJM Information Warehouse	1,882,953	2,219,195		941,477		5,043,625
PJM Manuals				141,144		141,144
PJM Manuals Enhancements				232,037		232,037
Retail Choice		8,546,871				8,546,871
Totals	35,198,875	24,021,090	1,269,955	6,684,399	11,046,712	78,221,031

Estimated PJM Annual Day 2 Revenue Requirement

Expense Type	2004 Budget (1)	Proposed 2005 Budget (2)	
Compensation	53,895,755	82,345,000	
Pension and postretirement benefits	11,529,375	16,636,000	
Software licenses and fees	6,144,991	11,864,000	
Outside services	34,962,613	46,871,000	
Computer maintenance and office supplies	4,211,700	9,903,000	
Lease expenses	8,180,650	9,591,000	
Depreciation and amortization	53,030,193	82,107,000	
Other expenses	9,674,818	7,758,000	
Interest expense	8,369,905	9,925,000	
Total	<u>190,000,000</u>	<u>277,000,000</u>	46%
Net Energy for Load Forecast	349,000,000	700,000,000	
Day 1 OpEx Rate Per Megawatt Hour	<u>\$ 0.5444</u>	<u>\$ 0.3957</u>	-27%

- 1 Based on PJM's original 2004 budget assumptions and volume forecasts on PJM Finance Committee page of web site.
- 2 Based on PJM's proposed 2005 budget assumptions and volume forecasts recommended by PJM Finance Committee for Board of Managers consideration during September 2004. Includes ComEd, AEP, Dayton, Dominion and Duquesne.

Estimated PJM Day 2 Capital Investment

Non-Market Integration Capital Investment:

1	1997	0
1	1998	3,954,318
1	1999	1,532,000
1	2000	112,440,000
1	2001	31,459,000
1	2002	58,268,000
1	2003	35,020,000
2	2004	<u>47,000,000</u>
		289,673,318
Day 1 Capital Investment		<u>(78,221,031)</u>
Day 2 Capital Investment		<u><u>211,452,287</u></u>

- 1** Per PJM's respective year's audited financial statements.
- 2** Based on PJM's approved 2004 capital budget.

Electric Reliability Council of Texas (ERCOT)

ERCOT Operating Expense Summary by Division and Department FY 2004 Budget

Corporate Administration		System Operations	
101 Executive Organization	\$ 4,233,555	201 Chief Operating Officer Administration	\$ -
110 Finance	\$ 47,640,233	400 COO Administration	\$ 1,671,434
120 General Counsel	\$ 4,708,316	401 Technical Operations Administration	\$ -
130 Human Resources	\$ 814,284	410 Market Operations Support	\$ 2,806,732
140 NERC Compliance	\$ 702,443	420 Operations Support	\$ 3,242,271
150 Stakeholder Services	\$ 480,815	425 System Operations	\$ 5,319,483
160 Corporate Communications	\$ 869,410	430 System Planning	\$ 2,251,939
170 Market Rules	\$ 3,426,011	440 Resource Planning	\$ 949,109
<u>TOTAL</u>	<u>\$ 62,875,067</u>	<u>TOTAL</u>	<u>\$ 16,240,968</u>
Information Technology		Market Operations	
300 CIO Administration	\$ 1,624,526	500 CMO Administration	\$ 931,677
301 Technology Services Administration	\$ 8,187,242	501 Settlements Administration	\$ -
310 System Engineering & Administration	\$ 2,703,300	505 Galvin PM	\$ 535,590
320 EMS	\$ -	510 Customer Solutions Support	\$ -
321 IT Operations	\$ 784,389	520 Registration	\$ -
325 Facilities	\$ 4,160,094	530 Settlement Metering	\$ 1,044,270
330 Network	\$ 5,933,457	540 Load Profiling and Data Aggregation	\$ 1,895,437
340 Commercial Applications	\$ -	550 Settlements and Billing	\$ 1,478,590
345 EMMS Development	\$ 954,041	560 Client Relations	\$ -
350 Project Management	\$ 746,998	570 REP/ESI-ID of Record	\$ 1,975,084
353 Market Technology Service	\$ 267,135	580 Renewables and TCR	\$ 569,738
354 Data Warehousing	\$ 866,369	605 Gruber PM	\$ 1,082,678
355 Development & Architecture	\$ 585,973	630 Retail Documentation and Reporting	\$ 1,467,167
356 Transaction Services	\$ 1,249,670	640 Retail Testing and Quality Control	\$ 642,607
357 Corporate Applications	\$ 763,674	650 Retail Client Services	\$ 956,046
358 Web and Data Services	\$ 939,561	660 Wholesale Client Services	\$ 1,746,982
359 Settlement and Billing	\$ 620,921	<u>TOTAL</u>	<u>\$ 14,325,866</u>
360 Data Management	\$ 1,107,703		
370 Cyber Security	\$ 1,518,464	ERCOT TOTAL	<u>\$ 132,443,627</u>
371 Physical Security	\$ 1,201,707		
385 IT Delivery	\$ 805,899		
390 IT Operations 2	\$ 2,784,433		
395 EMMS Production	\$ 1,196,170		
<u>TOTAL</u>	<u>\$ 39,001,726</u>		

ERCOT Staffing Summary by Division and Department FY 2004 Budget

Corporate Administration		System Operations	
101 Executive Organization	9	201 Chief Operating Officer Administration	0
110 Finance	17	400 COO Administration	3
120 General Counsel	11	401 Technical Operations Administration	0
130 Human Resources	5	410 Market Operations Support	17
140 NERC Compliance	5	420 Operations Support	31
150 Stakeholder Services	4	425 System Operations	54
160 Corporate Communications	4	430 System Planning	18
170 Market Rules	8	440 Resource Planning	9
<u>TOTAL</u>	<u>63</u>	<u>TOTAL</u>	<u>132</u>
Information Technology		Market Operations	
300 CIO Administration	7	500 CMO Administration	5
301 Technology Services Administration	0	501 Settlements Administration	0
310 System Engineering & Administration	27	505 Galvin PM	10
320 EMS	0	510 Customer Solutions Support	0
321 IT Operations	10	520 Registration	0
325 Facilities	6	530 Settlement Metering	10
330 Network	17	540 Load Profiling and Data Aggregation	20
340 Commercial Applications	0	550 Settlements and Billing	18
345 EMMS Development	8	560 Client Relations	0
350 Project Management	7	570 REP/ESI-ID of Record	25
353 Market Technology Service	4	580 Renewables and TCR	6
354 Data Warehousing	6	605 Gruber PM	9
355 Development & Architecture	2	630 Retail Documentation and Reporting	4
356 Transaction Services	12	640 Retail Testing and Quality Control	19
357 Corporate Applications	6	650 Retail Client Services	10
358 Web and Data Services	6	660 Wholesale Client Services	15
359 Settlement and Billing	7	<u>TOTAL</u>	<u>151</u>
360 Data Management	10		
370 Cyber Security	9		
371 Physical Security	4		
385 IT Delivery	7		
390 IT Operations 2	20		
395 EMMS Production	9		
<u>TOTAL</u>	<u>184</u>		
		ERCOT TOTAL	<u>530</u>

ERCOT Capital Assets

Asset	EOY 2003
Computer equipment and software	\$ 157,215,000
Buildings and leasehold	\$ 48,890,000
Furniture and fixtures	\$ 5,912,000
Land and improvements	\$ 248,000
Vehicles	\$ 129,000
Total	\$ 212,394,000
Depreciation and amortization	\$ (79,800,000)
	\$ 132,594,000
Construction work in progress	\$ -
Systems under development	\$ 35,047,000
	\$ 167,641,000

ERCOT Capital Assets by Function - 2002

(A) Asset	(B) EOY 2002
Computer Equipment and software	\$ 124,576,000
Buildings and leasehold	\$ 48,170,000
Furniture and fixtures	\$ 5,286,000
Land and improvements	\$ 248,000
Vehicles	\$ 129,000
Total	\$ 178,409,000
Depreciation and amortization	\$ (43,207,000)
	\$ 135,202,000
CWIP	\$ 85,000
Systems under development	\$ 11,799,000
	\$ 147,086,000

**ERCOT Staffing Summary by Division and Department
FY 2002**

	(A)	(B)		(D)	(E)
Corporate Administration			System Operations		
(1)	101 Executive Organization	7		201 Chief Operating Officer Administration	0
(2)	110 Finance	10		400 COO Administration	0
(3)	120 General Counsel	4		401 Technical Operations Administration	1
(4)	130 Human Resources	3		410 Market Operations Support	12
(5)	140 NERC Compliance	4		420 Operations Support	59
(6)	150 Stakeholder Services	3		425 System Operations	0
(7)	160 Corporate Communications	2		430 System Planning	11
(8)	170 Market Rules	2		440 Resource Planning	0
(9)	<u>TOTAL</u>	<u>35</u>		<u>TOTAL</u>	<u>83</u>
Information Technology			Market Operations		
(10)	300 CIO Administration	0		500 CMO Administration	0
(11)	301 Technology Services Administrat	2		501 Settlements Administration	4
(12)	310 System Engineering & Administr	43		505 Galvin PM	0
(13)	320 EMS	11		510 Customer Solutions Support	4
(14)	321 IT Operations	0		520 Registration	17
(15)	325 Facilities	0		530 Settlement Metering	18
(16)	330 Network	22		540 Load Profiling and Data Aggregation	6
(17)	340 Commercial Applications	14		550 Settlements and Billing	14
(18)	345 EMMS Development	0		560 Client Relations	17
(19)	350 Project Management	2		570 REP/ESI-ID of Record	0
(20)	353 Market Technology Service	0		580 Renewables and TCR	4
(21)	354 Data Warehousing	0		605 Gruber PM	0
(22)	355 Development & Architecture	0		630 Retail Documentation and Reporting	0
(23)	356 Transaction Services	0		640 Retail Testing and Quality Control	0
(24)	357 Corporate Applications	0		650 Retail Client Services	0
(25)	358 Web and Data Services	0		660 Wholesale Client Services	0
(26)	359 Settlement and Billing	0		<u>TOTAL</u>	<u>84</u>
(27)	360 Data Management	0			
(28)	370 Cyber Security	0		ERCOT TOTAL	<u>296</u>
(29)	371 Physical Security	0			
(30)	385 IT Delivery	0			
(31)	390 IT Operations 2	0			
(32)	395 EMMS Production	0			
(33)	<u>TOTAL</u>	<u>94</u>			

Electric Reliability Council of Texas, Inc.
Statements of Activity
(in 000's)

(A)	(B) 12/31/2000 Actual	(C) 12/31/2001 Actual	(D) 12/31/2002 Actual	(E) 12/31/2003 Actual-Unaudited
(1) Operating Revenues:				
(2) Transaction Fees	\$ 42,167	\$ 59,958	\$ 61,456	\$ 93,991
(3) Membership Fees and other	\$ 1,681	\$ 5,507	\$ 3,630	\$ 3,252
(4) Total Operating Revenue	<u>\$ 43,848</u>	<u>\$ 65,465</u>	<u>\$ 65,086</u>	<u>\$ 97,243</u>
(5) Operating Expenses				
(6) Salaries and Related Benefits	\$ 7,702	\$ 21,382	\$ 28,081	\$ 35,920
(7) Depreciation and Amortization	\$ 289	\$ 11,242	\$ 31,480	\$ 38,091
(8) Facility and Equipment Costs	\$ 2,005	\$ 7,170	\$ 6,347	\$ 8,175
(9) Consulting and Legal Services	\$ 4,459	\$ 6,886	\$ 14,008	\$ 12,089
(10) Administrative and Other	\$ 2,944	\$ 7,056	\$ 4,811	\$ 5,392
(11) IT Maintenance and Licensing	\$ 1,042	\$ 428	\$ 4,317	\$ 5,383
(12) Total Operating Expenses	<u>\$ 18,441</u>	<u>\$ 54,164</u>	<u>\$ 89,044</u>	<u>\$ 105,050</u>
(13) Income From Operations	<u>\$ 25,407</u>	<u>\$ 11,301</u>	<u>\$ (23,958)</u>	<u>\$ (7,807)</u>
(14) Other Income				
(15) Interest Income	\$ 331	\$ 370	\$ 1,208	\$ 433
(16) Interest Expense	\$ -	\$ (1,471)	\$ (5,448)	\$ (8,533)
(17) Change in unrestricted net assets	<u>\$ 25,738</u>	<u>\$ 10,200</u>	<u>\$ (28,198)</u>	<u>\$ (15,907)</u>
(18) Full Time Employees	134	267	296	380

1996/97 ERCOT BUDGET

	1995/96 Budget	1995/96 Estimated Expenditures	1996/97 ERCOT Office Budget (12 Mos.)
NERC Dues	217190	217264	233967
Engineering Studies	271000	281000	300000
Equipment Rent & Maintenance	3655	4466	5085
Furniture & Equipment Purchases	12900	21741	15000
Meetings & Seminars	8000	6000	8000
Other Expenses	7877	8549	11591
Salaries	311632	305934	326557
Payroll Taxes	18669	18303	19376
Benefits	78538	90312	97123
Postage/Shipping	8000	8400	8400
Printing/Media	5500	4220	8500
Rent/Insurance/Property Taxes	32676	32581	60000
Supplies	6300	5000	5500
Telephone	7500	8050	9000
Travel	29500	29500	29500
	<hr/>	<hr/>	<hr/>
TOTAL FOR ERCOT OFFICE	\$ 1,018,937	\$ 1,041,320	\$ 1,137,599
ISO FACILITY			\$ 3,442,000
			<hr/>
TOTAL			\$ 4,579,599

**Midwest Independent Transmission System Operator
(Midwest ISO)**

	MwH Peak Demand Demand	MwH Peak Demand Demand Annualized*	FERC 582 Energy	Est System Load Factor
2002	552,761,642	569,642,179	343,816,582	62.20%
2003	644,301,697	740,389,562	427,998,509	66.43%
2004	811,950,762	833,165,948		

*METC joined 5/1/02

*FE/NIPSCO joined 10/1/03

*Ameren joined 5/1/04

Annual Operating Expense

	<u>Dec-02</u>	<u>Annualized</u>	<u>2002 Form 1</u>	<u>"Day 1"</u>	(Basis)
Salaries/benefits	\$ 2,216,413	\$ 26,596,956	\$ 24,530,838	\$ 26,596,956	Annualized
Outside services	\$ 977,323	\$ 11,727,876	\$ 8,910,654	\$ 8,910,654	Actual
Occupancy	\$ 296,001	\$ 3,552,012	\$ 3,214,346	\$ 3,552,012	Annualized
Insurance	\$ 276,336	\$ 3,316,032	\$ 2,982,254	\$ 2,982,254	Actual
Supplies/other	\$ 1,054,251	\$ 12,651,012	\$ 9,487,711	\$ 9,487,711	Actual
Taxes	\$ 64,586	\$ 775,032	\$ 1,248,418	\$ 1,248,418	Actual
	\$ 4,884,910	\$ 58,618,920	\$ 50,374,221	\$ 52,778,005	
Depreciation	\$ 1,323,916	\$ 15,886,992	\$ 14,300,334	\$ 15,886,992	Annualized
Amortization	\$ 818,252	\$ 9,819,024	\$ 9,819,026	\$ 9,819,026	Actual
Interest Expense	\$ 592,389	\$ 7,108,668	\$ 9,399,340	\$ 9,399,340	Actual
	\$ 2,734,557	\$ 32,814,684	\$ 33,518,700	\$ 35,105,358	
TOTAL	<u>\$ 7,619,467</u>	<u>\$ 91,433,604</u>	<u>\$ 83,892,921</u>	<u>\$ 87,883,363</u>	

Less:

Market Ops	\$ 79,777	\$ 945,582	\$ 945,582
Transmission Planning	\$ 260,580	\$ 3,126,960	\$ 3,126,960
MAPPCOR Contract Expense		\$ 6,054,995	\$ 6,054,995

Total MISO Day 1 Expenses \$ 77,755,826

Load - MWh of peak demand 569,642,179

Cost/MWh of peak demand \$ 0.1365

Load - MWh of energy 343,816,582

Cost/MWh of energy \$ 0.2262

Headcount
December 31, 2002

Admin/Exec	2
Finance/Shared Services	27
Operations	108
Planning	20
IT	54
Legal/Reg	13
Market Ops	3
	<hr/>
	227

Less:

Market Ops	3
Transmission Planning	20
MAPP FTE's	37
	<hr/>

Day 1 Headcount	<hr/> <hr/>
	167

Operational Estimate

Fixed Assets January 2002

Operational Date for Day 1 was February 1, 2002

	<u>Balance as of January 31, 2002</u>
Land	\$ 1,952,457
Buildings and Improvements	22,050,603
Furniture and Fixtures	2,281,957
Computer Hardware	12,220,990
Computer Software	43,546,144
Telecommunications Equipment	<u>5,794,169</u>
Total Assets	87,846,320
Deferred Regulatory Asset	<u>58,914,154</u>
Total Start-up Costs	<u><u>\$ 146,760,474</u></u>

FINAL 12/31/02 MISO TRIAL BALANCE

D:\Documents and Settings\catmt13\My Documents\MyFiles\Outreach Prog\ISO Startup Costs[Exhibit 4(v2).xls]WESTCONNECT RAW DATA

<u>Account</u>	<u>Description</u>	<u>12/31/2001</u>	<u>Activity</u>	<u>12/31/2002</u>	<u>Form 1</u> <u>Page</u>	<u>Form 1</u> <u>Line</u>
10700	Construction in Process-Tranm	57,251,795.54	(37,731,631.92)	19,520,163.62	110	3
10850	Accumulated provision for dep	-	(11,838,294.75)	(11,838,294.75)	110	5
10860	Accumulated provision for dep	-	(134,994.08)	(134,994.08)	110	5
10870	Accumulated provision for dep	(1,652,842.26)	(818,018.43)	(2,470,860.69)	110	5
10880	Accumulated provision for dep	-	(1,509,026.42)	(1,509,026.42)	110	5
12410	One Group Investment	33,670,072.42	(13,102,777.24)	20,567,295.18	110	27
12420	SERP Investment	-	224,038.87	224,038.87	110	21
12421	Plan 457 Investment	-	57,279.14	57,279.14	110	21
13110	Petty Cash	529.11	148.08	677.19	110	24
13120	Bank One Checking	2,223,250.55	(3,936,511.24)	(1,713,260.69)	110	24
13125	Cash Deposits for Engineering	-	3,008,887.02	3,008,887.02	110	24
13150	Flex Account	(1,242.98)	(3,370.82)	(4,613.80)	110	24
13170	Restricted Cash (Credit Depos	17,017,476.66	(7,575,456.44)	9,442,020.22	110	25
13400	Deposits	705.54	310,322.75	39,028.29	110	25
14200	Customer accounts receivable	3,310,388.48	1,236,614.62	1,575,003.10	110	29
14310	Employee receivable	457,787.30	(451,540.79)	6,246.51	110	30
14320	Sales tax receivable	5,362.07	948,169.23	953,531.30	110	30
14330	Other accounts receivable	-	443,505.64	443,505.64	110	30
16510	Prepaid Insurance	2,454,063.53	(1,404,526.93)	1,049,536.60	110	46
16520	Other Prepayments	663,862.43	505,770.91	1,169,633.34	110	46
17300	Accrued utility revenue	-	5,722,524.00	5,722,524.00	110	50
18100	Unamortized debt expense - 20	585,937.50	(56,250.00)	529,687.50	111	56
18230	Deferred regulatory asset - C	58,914,154.28	(57,579,257.50)	1,334,896.78	111	59
18235	Deferred regulatory asset - P	-	58,296,781.90	58,296,781.90	111	59
18236	Deferred regulatory asset - A	-	(9,819,025.68)	(9,819,025.68)	111	59
22100	Bonds - 2012	(100,000,000.00)	-	(100,000,000.00)	112	17
22400	Other long-term debt	(261,495.26)	261,495.26	-	112	20
22410	IDFA Note - long term	(944,443.74)	80,074.54	(864,369.20)	112	20
22600	Unamortized discount on long-	412,319.00	(39,588.00)	372,731.00	112	22
22700	Obligations under capital lea	(15,292,331.14)	(6,666,507.51)	(21,958,838.65)	112	25
22800	Deferred revenue	(61,161,829.33)	493,723.80	(60,668,105.53)		
	10A Settlement	(60,000,000.00)	197,641.47	(59,802,358.53)	113	54
	Other	(1,161,829.33)	296,082.33	(865,747.00)	113	53
23110	IDFA Note - short term	(32,959.93)	(35,745.87)	(68,705.80)	112	33
23120	NCSC - short term	(500,895.84)	239,400.58	(261,495.26)	112	33
23200	Accounts Payable	(20,631,030.93)	(4,452,678.02)	(6,516,508.95)	112	34
23510	Customer deposits - generatio	-	(1,893,495.84)	(1,893,495.84)	112	37
23520	Customer deposits - facility	-	(1,115,391.18)	(1,115,391.18)	112	37
23610	Property tax accrual	-	(286,608.00)	(286,608.00)	112	38

LATER MOVED TO 224 FOR FILING

23650 Accrued State Sales Tax	(897.57)	(19,885.90)	(20,783.47)	112	38
23655 Accrued Local Sales Tax	(69.05)	(1,632.85)	(1,701.90)	112	38
23700 Interest accrued	(746,649.66)	(103,022.19)	(849,671.85)	112	39
24220 Accrued Payroll	(3,684.04)	3,684.04	-	112	44
24225 Accrued Bonus	(1,817,756.60)	(1,039,016.52)	(2,656,773.12)	112	44
24230 Accrued Vacation and Holiday	(530,455.03)	(13,348.61)	(543,803.64)	112	44
24250 Other Current and Accrued Lia	(3,206,860.24)	15,621,035.38	(1,644,024.86)	112	44
24260 Withholdings - taxes	(0.02)	-	(0.02)	112	44
24265 Flex account withholdings	(16,676.12)	(13,464.90)	(30,141.02)	112	44
24270 Accrued liabilities-benefits	(93,123.00)	19,278.37	(73,844.63)	112	44
24275 SERP Liability	(143,664.04)	(80,374.85)	(224,038.89)	112	28
24276 Plan 457 Liability	-	(57,279.14)	(57,279.14)	112	28
24280 401k withholdings	302.55	(511.65)	(209.10)	112	44
24290 401k match	0.04	(0.05)	(0.01)	112	44
24295 Garnishments	(288.00)	288.00	-	112	44
24300 Obligations under capital lea	(3,371,037.12)	(2,505,704.36)	(2,843,541.48)	112	45
25305 Customer deposits - long term	(23,811.00)	-	(23,811.00)	112	37
25310 Customer deposits - credit as	(17,000,000.00)	7,678,484.64	(9,321,515.36)	112	37
25320 Deferred rent	(4,678.22)	(56,162.64)	(60,840.86)	113	53
25330 Deferred compensation - direc	-	(79,401.00)	(79,401.00)	113	53
25340 Reserve for disputed amounts	-	(1,942,570.07)	(1,942,570.07)	113	54
35203 Leasehold Improvements-Transm	-	523,235.32	523,235.32	110	2
35301 Computer Hardware-Transmissio	2,745,218.87	10,267,700.84	13,012,919.71	110	2
35303 Computer Software-Transmissio	1,499,438.48	59,673,476.81	61,172,915.29	110	2
35307 Telecommunications Equipment-	-	8,165,925.41	8,165,925.41	110	2
35311 Computer Hardware-Transmissio	-	4,859,786.79	4,859,786.79	110	2

35399 MAPP Deferred Credit - Pensio	(419,906.50)	419,906.50	-	110	2		
38900 Land and Land Rights - Genera	1,952,457.48	(152,457.48)	1,800,000.00	110	2		
39003 Leasehold Improvements-Genera	4,293,721.17	1,920,627.88	6,214,349.05	110	2		
39011 Buildings-General Leased	15,822,128.50	(45,385.00)	15,776,743.50	110	2		
39013 Leasehold Improvements-Genera	1,682,463.60	(1,682,463.60)	-	110	2		
39100 Office Furniture and Fixtures	2,226,756.18	401,230.02	2,627,986.20	110	2		
39110 Office Furniture and Fixtures	20,255.00	-	20,255.00	110	2		
39700 Communciation Equipment - Gen	77,044.32	482,323.25	559,367.57	110	2		
39710 Communication Equipment - Gen	-	520,715.55	520,715.55	110	2		
39801 Computer Hardware-General	1,138,594.34	366,253.26	1,504,847.60	110	2		
39803 Computer Software-General	2,103,427.13	141,604.62	425,031.75	110	2		
39815 Network Equipment-General Lea	520,715.55	(520,715.55)	-	110	2		
40350 Depreciation Expense - Transm	-	11,973,288.83	11,973,288.83	114	6		
40370 Depreciation Expense - Genera	-	2,327,044.85	2,327,044.85	114	6		
40730 Regulatory debits	-	9,819,025.68	9,819,025.68	114	11		
40740 Regulatory credits	-	(1,334,896.78)	(1,334,896.78)	114	12		
40810 Taxes - property	-	385,961.70	385,961.70	114	13		
40820 Taxes - FICA, Unemployment	-	861,455.72	861,455.72	114	13		
40855 Taxes - MN State Sales Tax	-	879.62	879.62	114	13		
40856 Taxes - ST PL Local Sales Tax	-	120.96	120.96	114	13		
41910 Interest Income - Checking	-	(44,276.41)	(44,276.41)	117	35		
41920 Interest Income - Sweep	-	(2,613.41)	(2,613.41)	117	35		
41930 Interest Income - One Investm	-	(568,320.01)	(568,320.01)	117	35		
41940 Interest Income - Tax Refund	-	(63,855.89)	(63,855.89)	117	35		
42110 Gain on disposition of proper	-	(3,300.00)	(3,300.00)	117	38		
42710 Interest on long-term debt -	-	8,109,615.90	8,109,615.90	117	56		
42720 Interest on long-term debt -	-	40,573.97	40,573.97	117	56		
42800 Amortization of debt discount	-	95,838.00	95,838.00	117	57		
43120 Interest expense - Capital Le	-	1,347,269.35	1,347,269.35	117	62		
43130 Interest expense - other	-	488,408.36	488,408.36	117	62		
45110 MAPP Reliability - DBMR	-	(933,912.00)	(933,912.00)	114	2		
45120 MAPP Reliability - Admin	-	(65,868.00)	(65,868.00)	114	2		
45130 MAPP Reliability - Sublease	-	(410,736.00)	(410,736.00)	114	2		
45610 Membership	-	(180,000.00)	(180,000.00)	114	2		
45620 Dues	-	(54,000.00)	(54,000.00)	114	2		
45630 Schedule 10	-	(73,783,270.85)	(73,783,270.85)	114	2		
45635 Scheduel 10A	-	(197,641.46)	(197,641.46)	114	2		
45640 Miscellaneous Income	-	(18,266.67)	(18,266.67)	114	2		
45645 Engineering Studies Income	-	(435,040.98)	(435,040.98)	114	2		
45650 Training Income	-	(125,711.64)	(125,711.64)	114	2		
45670 MAPP Transmission - AL (alloc	-	(3,244,716.00)	(3,244,716.00)	114	2		
45680 MAPP Transmission - Sched F	-	(2,184,024.00)	(2,184,024.00)	114	2		
45685 MAPP MCN Income	-	(924,835.99)	(924,835.99)	114	2		
						EXPENSES	Revised
						OP a/c Dollars	Diff = 920
							Account

= show in diff
a/c on Form 1

90810 Member Training	-	155,685.72	155,685.72	114	4	155,685.72	90810
91000 Miscellaneous Customer Servic	-	5,109.17	5,109.17	114	4	5,109.17	91000
92010 Salaries and Wages	-	16,705,871.56	16,705,871.56	114	4	16,705,871.56	92010
92020 Annual Bonus	-	3,172,161.79	3,172,161.79	114	4	3,172,161.79	92020
92022 Other Bonuses	-	55,099.75	55,099.75	114	4	55,099.75	92022
92025 Signing Bonus	-	129,950.00	129,950.00	114	4	129,950.00	92025
92030 Relocation Expense - Taxable	-	890,169.33	890,169.33	114	4	890,169.33	92030
92040 Relocation Expense - Non Taxa	-	167,418.70	167,418.70	114	4	167,418.70	92040
92060 Severance	-	(10,627.23)	(10,627.23)	114	4	(10,627.23)	92060
92110 Office Supplies	-	249,558.73	249,558.73	114	4	249,558.73	92110
92111 Postage	-	(2,363.17)	(2,363.17)	114	4	(2,363.17)	92111
92112	-	-	-			-	92112
92113	-	-	-			-	92113
93030 Bank Charges	-	248,723.87	248,723.87	114	4	248,723.87	92115
92120 Telephone	-	280,206.19	280,206.19	114	4	280,206.19	92120
92121 Long Distance	-	46,215.39	46,215.39	114	4	46,215.39	92121
92130 Subscriptions/Literature	-	76,832.84	76,832.84	114	4	76,832.84	92130
92140 Meals & Entertainment-Travel	-	117,262.34	117,262.34	114	4	117,262.34	92140
92142 Meals & Entertainment-Busines	-	165,651.46	165,651.46	114	4	165,651.46	92142
92144 Meals & Entertainment-Recruit	-	163.94	163.94	114	4	163.94	92144
92146 Mileage-IDOC Limit	-	4.75	4.75	114	4	4.75	92146
92149 Mileage	-	557.90	557.90	114	4	557.90	92149
92150 Travel-Air, Lodging, Auto	-	1,179,745.85	1,179,745.85	114	4	1,179,745.85	92150
92154 Lodging	-	1,473.14	1,473.14	114	4	1,473.14	92154
92156 Taxi, Car Rental, Parking, To	-	751.89	751.89	114	4	751.89	92156
92157 Travel-IDOC Per Diem Meals-Fu	-	156.35	156.35	114	4	156.35	92157
92168 Small Tools & Equipment	-	13,661.53	13,661.53	114	4	13,661.53	92168
92170 Memberships/Dues	-	40,094.99	40,094.99	114	4	40,094.99	92170
92179 NERC	-	41,476.42	41,476.42	114	4	41,476.42	92179
92180 Printing	-	16,399.90	16,399.90	114	4	16,399.90	92180
92187 Voice Circuits (AT&T)	-	12,210.14	12,210.14	114	4	12,210.14	92187
92190 Computer Maintenance	-	1,064,750.27	1,064,750.27	114	4	1,064,750.27	92190
92191 Telecommunications - ICCS	-	4,402,692.10	4,402,692.10	114	4	4,402,692.10	92191
92192 MCN	-	624,363.55	624,363.55	114	4	624,363.55	92192
92193 VPN	-	33,469.45	33,469.45	114	4	33,469.45	92193
92195 Telcom Maintenance	-	1,895.93	1,895.93	114	4	1,895.93	92195
92196 Internet	-	47,094.96	47,094.96	114	4	47,094.96	92196
92197 Cable/Satellite	-	9,202.97	9,202.97	114	4	9,202.97	92197
92198 Telecommunications - On Call	-	903.10	903.10	114	4	903.10	92198
92310 Outside Services	-	2,698,416.55	2,698,416.55	114	4	2,698,416.55	92310
92320 Legal Fees	-	2,024,829.46	2,024,829.46	114	4	2,024,829.46	92320
92340 Executive Search	-	68,692.00	68,692.00	114	4	68,692.00	92340
92345 Hiring/Retention Costs	-	148,832.11	148,832.11	114	4	148,832.11	92345

92360 Management Consultants	-	2,659,006.41	2,659,006.41	114	4	2,659,006.41	92360
92365 Management Consultants Exp -	-	13,760.85	13,760.85	114	4	13,760.85	92365
92375 Temporary Help	-	737,228.59	737,228.59	114	4	737,228.59	92375
92380 Security	-	208,705.23	208,705.23	114	4	208,705.23	92380
92385 Payroll Service	-	20,793.70	20,793.70	114	4	20,793.70	92385
92395 Contractor	-	330,388.95	330,388.95	114	4	330,388.95	92395
92405 Property Insurance	-	141,425.25	141,425.25	114	4	141,425.25	92405
92410 General Liability/Reps and Wa	-	1,878,888.29	1,878,888.29	114	4	1,878,888.29	92410
92440 Automotive	-	553.36	553.36	114	4	553.36	92440
92450 Directors & Officers Liabilit	-	165,810.00	165,810.00	114	4	165,810.00	92450
92460 Workman's Compensation	-	41,504.90	41,504.90	114	4	41,504.90	92460
92470 Excess Liability	-	740,807.85	740,807.85	114	4	740,807.85	92470
92480 IN Surplus Lines Tax	-	9,733.72	9,733.72	114	4	9,733.72	92480
92490 Insurance - Crime Coverage	-	3,048.28	3,048.28	114	4	3,048.28	92490
92500 Injuries and Damages	-	482.52	482.52	114	4	482.52	92500
92610 Employee Benefits	-	1,403,254.95	1,403,254.95	114	4	1,403,254.95	92610
92615 Employee Benefits - SERP	-	166,488.25	166,488.25	114	4	166,488.25	92615
92620 401k	-	1,607,919.92	1,607,919.92	114	4	1,607,919.92	92620
92630 Officer Flex Spending	-	35,357.99	35,357.99	114	4	35,357.99	92630
92640 Education Assistance/Outside	-	190,212.61	190,212.61	114	4	190,212.61	92640
92650 Materials/Books	-	1,247.48	1,247.48	114	4	1,247.48	92650
93016 Conventions and seminars	-	16,312.75	16,312.75	114	4	16,312.75	92670
91300 Marketing, PR Expense	-	84,251.58	84,251.58	114	4	84,251.58	93015
93015 General Advertising Expenses	-	470.25	470.25	114	4	470.25	93015
91300 Marketing, PR Expense	-	15,359.00	15,359.00	114	4	15,359.00	93021
93035 Directors Fees	-	450,062.50	450,062.50	114	4	450,062.50	93022
92145 Meals & Entertainment-Directo	-	1,579.88	1,579.88	114	4	1,579.88	93023
92159 Travel-Directors	-	81,903.73	81,903.73	114	4	81,903.73	93024
93025 Miscellaneous General Expense	-	3,420.30	3,420.30	114	4	3,420.30	93025
92170 Memberships/Dues	-	16,712.00	16,712.00	114	4	16,712.00	93026
93110 Operating Lease-Building	-	1,863,772.33	1,863,772.33	114	4	1,863,772.33	93110
93130 Operating Lease-Furniture	-	2,626.18	2,626.18	114	4	2,626.18	93130
93140 Operating Lease-Computers	-	46,516.84	46,516.84	114	4	46,516.84	93140
93150 Operating Lease-Copier	-	136,793.86	136,793.86	114	4	136,793.86	93150
93510 Services for building	-	118,499.61	118,499.61	114	5	118,499.61	93510
93520 Utilities	-	444,018.73	444,018.73	114	5	444,018.73	93520
93530 General Maintenance	-	602,118.82	602,118.82	114	5	602,118.82	93530

Southwest Power Pool (SPP)

Southwest Power Pool, Inc.

Fixed Assets and Depreciation as of 12/31/2003

Date Acquired	ID Number	C/F/S	Location	Description	Life (Yrs)	12/31/2003 Ending Cost	Function	Project
31-Dec-01		S	Computer Room	Market Settlement Software	5	15,932,379	Market	Market Systems
28-Dec-00		S	Computer Room	Software - Market Settlement	3	3,040,800	Market	Market Systems
01-Oct-97	10052	S	Computer Room	EMS Software	3	1,983,505	Reliability	EMS Implementation
29-Jun-01		S	Scheduling agent	Hardware/Software	3	1,715,754	TSP Support	Enhance Energy Scheduling
13-Dec-01		S	Scheduling agent	MOS Project	3	1,251,550	Market	Market Systems
22-Aug-01		S	Computer Room	ESCA - EMP Project	3	596,130	Reliability	EMS Enhancements
17-Dec-01		C	Scheduling agent	Hardware	3	586,400	TSP Support	Enhance Energy Scheduling
01-Jan-01		F	Security Center	New Chillers	5	480,876	Split	Computer Room Expansion
01-Jan-01		F	Security Center	renovate security center	5	338,842	Split	Control Room Infrastructure
31-Dec-03		MS		Market Settlement Software	5	298,000	Market	Market Systems
17-Dec-01		S	Computer Room	ESCA - EMP Project	3	221,641	Reliability	EMS Enhancements
21-Nov-00		S	Computer Room	OATI	3	200,000	TSP Support	Enhance Energy Scheduling
04-Mar-98		S	C. Monroe	ESCA Software	3	177,599	Reliability	EMS Implementation
24-Aug-98		S	C. Monroe	TrakR Software	3	166,250	Reliability	EMS Implementation
01-Oct-96	10526	C	Computer Room	OASIS	3	164,041	Transmission Se	OASIS
01-Mar-98	10446	C	Security Center	Video Display Hardware	3	162,371	Reliability	EMS Implementation
22-Aug-01		S	Computer Room	ESCA - Compaq Project	3	154,208	Reliability	EMS Enhancements
17-Dec-01		C	Scheduling agent	Hardware	3	146,600	TSP Support	Enhance Energy Scheduling
23-May-01	11086	S	Computer Room	Microsoft Licenses	3	134,322	Management	Business Systems
31-Dec-02	11385	C	Backup Site- AREC	Redundant Network Router	3	122,314	Reliability	Business Continuity
18-Sep-03	11892	C	Telecomm Room	Core Switch	3	117,130	Split	EMS Enhancements
24-Apr-01	11079	F	7th Floor	Modular Furniture for Offices	5	108,425	Management	Administration
25-Feb-02	11808	S	EMS Project	Cutover Project	3	105,400	Reliability	EMS Enhancements
18-Apr-02	n/a	F	Computer Room	2 chillers, handlers and data mates	5	103,315	Split	Computer Room Expansion
01-Jan-92	10231	S	J. Chamberlin	PTI Software	3	100,000	Reliability	Transmission Planning
15-Aug-02	n/a	S	Computer Room	5 Sequel Server Licenses 2000 Editio	3	92,022	Split	EMS Enhancements
25-Jun-98		S	C. Monroe	TrakR Software	3	85,241	Reliability	EMS Implementation
5-Mar-02		F	New Cubicles on 9	Deposit on Cubicles	5	83,630	Management	Administration
27-May-98		S	C. Monroe	Tagging software	3	82,686	Reliability	EMS Implementation
01-Sep-99		S	Computer Room	Oasis Automation	3	78,063	Transmission Se	OASIS
10-Apr-99		S	B. Gibson	JTAG Software	3	77,150	Reliability	EMS Enhancements
10-Aug-01	21202	F	9th Floor	Modular Furniture	5	68,798	Management	Administration
01-Jan-97	10095	C	Computer Room	Lan Server (SPPALPHA)	3	63,962	Management	Administration
01-May-99		S	Computer Room	Oasis Automation	3	61,843	Transmission Se	OASIS
24-Oct-01		S	Software	Firewall Software	3	60,358	Split	Enterprise Security
30-Dec-02	1376-1138	C	Computer Room	Firewall Servers (4) 11376-11380	3	57,287	Split	Enterprise Security
01-Dec-00		S	Computer Room	GENESYS Subsystem	3	55,743	Reliability	EMS Enhancements
01-Oct-96	10528	C	Computer Room	OASIS Firewall	3	55,031	Transmission Se	Enterprise Security
26-Apr-99		S	Computer Room	Oasis Automation	3	51,451	Transmission Se	OASIS
01-Mar-01	11020	C	Scheduling Agent	UPS	3	50,372	Split	EMS Enhancements
28-Mar-02	11259	C	Operations	OASIS replacement server/peripheral	3	47,703	Transmission Se	OASIS

Southwest Power Pool, Inc.

Fixed Assets and Depreciation as of 12/31/2003

Date Acquired	ID Number	C/F/S	Location	Description	Life (Yrs)	12/31/2003 Ending Cost	Function	Project
04-Jun-98		S	C. Monroe	TrakR Software	3	45,920	Reliability	EMS Enhancements
20-Nov-03	11932	C	ESCA Office	PowerEdge 6650 2.5 G Server	3	44,809	Reliability	EMS Enhancements
20-Nov-03	11933	C	ESCA Office	PowerEdge 6650 2.5 G Server	3	44,808	Reliability	EMS Enhancements
20-Nov-03	11951	C	ESCA Office	PowerEdge 6650 2.5 G Server	3	44,808	Reliability	EMS Enhancements
31-May-02	n/a	F	8th Floor Furniture	Balance on cubes for 8th floor	5	43,333	Management	Administration
19-Jun-03	11869	C	6th Floor - Training	Audio System	5	41,265	Management	Administration
18-Sep-01	11204	C	Door Control System	HID Door Reader System	3	41,097	Management	Administration
24-Mar-97		C	Security Center	A/C Units in Comp. Room	3	41,051	Split	Computer Room Expansion
01-Jan-97	10192	C	Computer Room	Telephone System	3	40,841	Split	Control Room Infrastructure
31-Jul-97	10388	F	Security Center	Consoles for Sec. Center	5	40,836	Split	Control Room Infrastructure
09-Jul-01	11128	C	Computer Room	Digital Voice Recorder	3	40,155	Split	Control Room Infrastructure
8-May-03	11762	C	Back-Up Site-AREC	Nokie Firewall for Backup Site	3	39,714	Reliability	Business Continuity
18-Apr-02	n/a	F	8th Floor Furniture	deposit on 8th floor cubicles	5	39,270	Management	Administration
01-Jun-00		S	Computer Room	Sequel Server Software	3	37,995	Split	EMS Enhancements
30-Oct-97	10325	C	Computer Room	UPS	3	36,500	Split	EMS Implementation
19-Aug-02	11316	C	Telecom Room	Back Up Site Route at AREC & Maint	3	35,417	Reliability	Business Continuity
30-Mar-98		S	C. Monroe	ESCA Software	3	35,000	Reliability	EMS Implementation
2/14/2003	11397	C	IT	Dell PowerVault 220S Server	3	34,039	Management	Administration
06-Aug-98		S	C. Monroe	Free Flow Software	3	33,550	Reliability	EMS Enhancements
20-Nov-03	11931	C	ESCA Office	Dell EMC DAE2 Disk array Encl.	3	32,524	Market	Market Systems
20-Nov-03	11930	C	ESCA Office	Dell EMC DAE2 Disk array Encl.	3	32,524	Market	Market Systems
23-Apr-01	11051	C	Telecom Room	SPPNET Replacement Router	3	32,301	Split	EMS Enhancements
01-May-00		S	9th Floor	Forecasting Program-Engineering	3	31,000	Reliability	Transmission Planning
23-Apr-01	11052	C	Telecom Room	INET Routers	3	30,138	Reliability	EMS Enhancements
23-Apr-01	11053	C	BackUp Site - AREC	INET router	3	30,138	Reliability	EMS Enhancements
14-Oct-98		S	C. Monroe	Tagging Software	3	29,889	Reliability	EMS Enhancements
27-Feb-96	10358	C	A. Rodriquez	HP Network Analyzer-Advisor	3	29,765	Split	Computer Room Expansion
15-Mar-02		C	RTTOSS system	Compaq-runs setup/integra.	3	29,000	TSP Support	Enhance Energy Scheduling
22-Oct-03	11917	C	Computer Room	Drive Array	3	28,790	Split	EMS Enhancements
29-Nov-99	10786	F	9th Floor	Office Panels	5	27,488	Management	Administration
01-Sep-01	11177	C	COSMOS Project	Compaq Testing System CPU	3	27,374	Market	Market Systems
11-Apr-01		F	Security Center	raised floor/carpeting for comp room	5	26,987	Split	Control Room Infrastructure
29-Jun-99		S	Computer Room	Oasis Automation	3	26,831	Transmission Se	OASIS
25-Sep-02	n/a	F	Security Center	2 consoles - Market Ops	5	26,200	Market	Control Room Infrastructure
01-Apr-00	10876	C	Ohio Office	Stancil Voice Logger	3	26,107	Transmission Se	AEP Project
20-Nov-03	11945	C	ESCA Office	Dell EMC SAN Array	3	25,366	Market	Market Systems
20-Nov-03	11944	C	ESCA Office	Dell EMC SAN Array	3	25,366	Market	Market Systems
01-Oct-98	10190	C	Computer Room	Corporate Server	3	24,985	Management	Administration
01-Feb-97	10033	C	Computer Room	A/C Units in Comp. Room	3	24,917	Split	Computer Room Expansion
24-Apr-01	11075	F	7th Floor	Fire Detection System	5	24,495	Split	Computer Room Expansion
01-Dec-00	10974	F	Scheduling Agent	Consoles	5	23,965	TSP Support	Control Room Infrastructure

Southwest Power Pool, Inc.

Fixed Assets and Depreciation as of 12/31/2003

Date Acquired	ID Number	C/F/S	Location	Description	Life (Yrs)	12/31/2003 Ending Cost	Function	Project
3-Jun-02	11282-86	C	Computer Room	5 PowerEdge 1650 Srvrs (11282-286)	3	22,775	Split	EMS Enhancements
1/16/2003	11382	C	Computer Room	New Tape Backup System & Tapes	3	22,350	Split	EMS Enhancements
20-Nov-03	11948	S	ESCA Office	Software/Accessories	3	22,327	Market	Market Systems
07-Apr-99	10369	C	Computer Room	Operating Reserve Servers	3	22,248	Reliability	Operating Reserve Sharing
07-Apr-99	10370	C	Computer Room	Operating Reserve Servers	3	22,248	Reliability	Operating Reserve Sharing
20-Jul-01	11141	C	EMS Upgrade Computer	ES40	3	22,093	Reliability	EMS Enhancements
24-Jul-01		S	Software	MUST Licenses	3	21,400	Reliability	Transmission Planning
24-Oct-01		S	Software	OASIS Enhancements	3	21,063	Transmission Se	OASIS
01-Jun-99		S	Computer Room	Nostradamus Software	3	21,000	Reliability	EMS Enhancements
26-Apr-02	n/a	F	Computer Room	Balance on chillers, handlers, etc.	5	20,938	Split	Computer Room Expansion
22-May-02	1272-1127	C	Computer Room	2-Cisco Pix Firewalls(11272& 11273)	3	20,881	Split	Enterprise Security
22-Oct-03	11918	C	Computer Room	Tape Backup System	3	20,858	Split	EMS Enhancements
01-Mar-99		S	Computer Room	OASIS Software	3	20,610	Transmission Se	OASIS
9-Apr-02	n/a	S	Operations	150 user license ACE server software	3	20,596	Reliability	EMS Enhancements
01-Feb-96	10620	C	R. Wheeler	SUN Workstation	3	20,453	Reliability	Operating Reserve Sharing
01-Feb-96	10621	C	Computer Room	SUN Workstation	3	20,453	Reliability	Operating Reserve Sharing
31-Dec-02	11383	C	Computer Room	Dial Up Router (repl. MCI RLN)	3	20,210	Split	EMS Enhancements
01-Jul-97	10374	C	Computer Room	Control Center Phone System	3	20,206	Split	Control Room Infrastructure
10-Apr-02	11261-65	F	Telecom Equip.	SPP video conference phone equip.	5	19,228	Management	Administration
10-Apr-99	10355	C	B. Gibson	JTAG Workstation	3	18,888	TSP Support	Enhance Energy Scheduling
14-Feb-02		F	Sch. Agent	Comfort Systems	5	18,701	TSP Support	Control Room Infrastructure
22-Apr-02	11266-68	C	Computer Room	3 servers (11266;11267;11268)	3	17,885	Split	Computer Room Expansion
27-Dec-02	n/a	F	12th Floor Office	Door Access Control System	5	17,726	Split	Enterprise Security
01-Jul-01	11140	F	Scheduling Agent	Raised Flooring	5	17,718	Split	Computer Room Expansion
1-Oct-03	11895	C	Computer Room	PowerEdge 2650 Server - Acctng.	3	16,925	Management	Business Systems
1-Oct-03	11896	C	Computer Room	PowerEdge 2650 Server - FTP	3	16,925	Management	Business Systems
01-Dec-00	10973	F	Scheduling Agent	Raised Floor	5	16,916	Split	Computer Room Expansion
18-Dec-02	n/a	F	12th Floor Office	Bal. On 12th floor furnishings (8 sets)	5	16,738	Management	Administration
20-Mar-01	11039	F	6th Floor	Cubical Offices	5	16,527	Management	Administration
01-Jun-91	10092	C	Security Center	harris rf/ssb radio	3	16,154	Split	Control Room Infrastructure
15-Nov-02	n/a	F	12th Floor Office	Dep. On 8 sets of furniture	5	15,148	Management	Administration
01-Sep-99		S	Computer Room	MUST Licenses - Engineer	3	15,000	Transmission Se	OASIS
31-Dec-02		S	Computer Room	Cold Fusion Software & Licenses	3	14,643	Split	Computer Room Expansion
1/9/2003		S	Computer Room	Cold Fusion Server & licenses	3	14,643	Split	Computer Room Expansion
07-Aug-01	11172	C	Computer Room	Data Base Server	3	14,429	Split	Computer Room Expansion
07-Aug-01	11173	C	Computer Room	Data Base Server	3	14,429	Split	Computer Room Expansion
01-Feb-97	10076	F	Computer Room	Fire Suppression System	5	14,418	Split	Computer Room Expansion
22-May-02	n/a	S	R. Turner	LAN Mgmt. Sys. - CiscoWorks	3	14,273	Split	Computer Room Expansion
09-Nov-01		F	9th Floor	Conference Room Chairs	5	14,166	Management	Administration
31-Dec-99	10783	C	Computer Room	JTAG Redundant Server	3	14,056	TSP Support	Enhance Energy Scheduling
01-Jan-93	10525	C	Xerox Room	Router	3	14,000	Management	Administration

Southwest Power Pool, Inc.

Fixed Assets and Depreciation as of 12/31/2003

Date Acquired	ID Number	C/F/S	Location	Description	Life (Yrs)	12/31/2003 Ending Cost	Function	Project
01-Jul-00		S	Computer Room	Cold Fusion Software	3	13,663	Split	Computer Room Expansion
09-Mar-01	11041	C	AREC Redundancy Proj.	Server & Peripherals	3	13,625	Reliability	Business Continuity
5-Jun-02	1274-1127	C	Computer Room	5 Cisco Switches(11274-11278)	3	13,594	Split	Computer Room Expansion
01-Feb-97	10546	C	S. Venable - home	Workstation	3	13,594	Management	Administration
01-Feb-97	10616	C	K. Bates	Workstation	3	13,594	Transmission Se	OASIS
01-Feb-97	10618	C	A. Rodriguez	Workstation	3	13,594	Split	IT Architecture
22-Oct-03	11915	C	Computer Room	Seq. Database Cluster Server	3	13,515	Split	Computer Room Expansion
22-Oct-03	11916	C	Computer Room	Seq. Database Cluster Server	3	13,515	Split	Computer Room Expansion
17-Aug-01	11203	C	COSMOS Project	Oracle Server (20 seat)	3	13,499	Market	Market Systems
5-Mar-02		F	Security	Camera Equip.	5	13,096	Split	Enterprise Security
30-Mar-98		S	C. Monroe	ESCA Software	3	13,066	Split	Computer Room Expansion
24-Jun-03	11861	C	HR-Server	PowerEdge 2650 Server	3	12,974	Management	Administration
24-Jun-03	11863	C	Computer Room	Dell PowerEdge 2650 Server-Hope	3	12,820	Split	Computer Room Expansion
24-Jun-03	11864	C	Computer Room	Dell PowerEdge 1650 Server-Hope	3	12,820	Split	Computer Room Expansion
24-Apr-03		S	Computer Room	Software for Load Balancers	3	12,634	Market	Market Systems
06-Nov-01		F	BackUp Site - AREC	Raised Flooring	5	12,054	Reliability	Business Continuity
9-Oct-03	11907	C	OATI-Plymouth, MN	Redundant Router for OATI system	3	11,968	TSP Support	Enhance Energy Scheduling
09-Nov-01		F	7th Floor	Office Panels	5	11,758	Management	Administration
1-Jan-02		S	Software	Veritas Net Backup Sys.	3	11,520	Split	Computer Room Expansion
31-Dec-02		C	Computer Room	Tape Backup Sys. & Tapes	3	11,175	Split	Computer Room Expansion
01-Apr-97	10617	C	T. Mallinger	Workstation	3	11,142	Split	Control Room Infrastructure
01-Feb-97	10544	C	K. McArthur	Workstation	3	11,142	Management	Administration
01-Apr-97	10215	C	Backup Site - AREC	Workstation	3	11,131	Reliability	Business Continuity
01-Jun-98	10111	C	Computer Room	4.3 GB UW Drive	3	11,000	Split	Computer Room Expansion
18-Sep-02	11320&21	C	Computer Room	Two SPP Routers	3	10,993	Split	Computer Room Expansion
06-Nov-01		S	Software	Mailsweeper	3	10,974	Management	Enterprise Security
01-Jun-01	11087	S	Computer Room	Firewall - Gateway	3	10,888	Split	Enterprise Security
14-Nov-02	n/a	F	6th Floor	Balance on 28 Tables & Carts	5	10,704	Management	Administration
01-Aug-01		S	Software	Verisign OnSite Certs & Seats (322)	3	10,660	Split	Enterprise Security
24-Jun-03	11865	C	Computer Room	Dell Power Vault 220S Server-Hope	3	10,609	Split	Computer Room Expansion
1/22/2003		S	Computer Room	Software for New BackUp System	3	10,603	Split	Computer Room Expansion
22-Dec-03	11961	C	Computer Room	Dell PowerEdge 1750 Server	3	10,305	Market	Market Systems
22-Dec-03	11962	C	Computer Room	Dell PowerEdge 1750 Server	3	10,304	Market	Market Systems
3-Jun-02	n/a	S	Software	3 Roguewave Soft. Licenses	3	10,260	Split	Enterprise Security
11-Apr-01		F	Computer Room	Raised Floor	5	10,000	Split	Computer Room Expansion
14-Mar-01		S	Computer Room	VSAT Software	3	10,000	Reliability	Transmission Planning
09-Oct-01	11206	C	Computer Room	Dell PowerVault 20XS	3	9,962	Split	Computer Room Expansion
18-Sep-02	n/a	S	Computer Room	DreamWeaver & Cold Fusion SW & L	3	9,809	Split	Computer Room Expansion
01-Apr-00	10875	C	Ohio Office	Voice Gate Voice Mail System	3	9,739	Transmission Se	AEP Project
18-Sep-02	n/a	C	Computer Room	Two SPP Spare Router	3	9,718	Split	Computer Room Expansion
18-Sep-02	n/a	F	6th Floor	Deposit on 28 tables & 2 carts	5	9,675	Management	Administration

Southwest Power Pool, Inc.

Fixed Assets and Depreciation as of 12/31/2003

Date Acquired	ID Number	C/F/S	Location	Description	Life (Yrs)	12/31/2003 Ending Cost	Function	Project
14-Nov-02	n/a	F	6th Floor	Balance on Chairs (60)	5	9,621	Management	Administration
25-Jul-02	n/a	S	Software	25 Visio Pro 2002 copies	3	9,357	Management	Administration
30-Dec-02		C	A/C & TelCom Room on 7	RCM 8 Monitor for Sec. Ctr. & TelCon	3	9,298	Split	Control Room Infrastructure
20-Jun-02	11281	C	Computer Room	1 PowerEdge 2250 Srvr (Intrusion De	3	9,276	Split	Enterprise Security
9-Oct-03	11897	C	Computer Room	SPPList Server Replacement	3	9,255	Management	Administration
20-Mar-01		C	Computer Room	Voice System Upgrade	3	9,228	Management	Administration
22-Dec-97	10418	C	S. Skipper	Color Scanner	3	8,923	Management	Administration
15-May-03	11820	C	Computer Room	Dell Power Edge 2650 Server	3	8,919	Split	Control Room Infrastructure
31-Oct-97	10435	C	R. Turner	Workstation	3	8,792	Split	IT Architecture
16-Sep-02	n/a	F	6th Floor	Deposit on 60 chairs for training ctr.	5	8,693	Management	Administration
01-Jan-97	10229	C	B. Phillips	Laptop	3	8,640	Management	Administration
01-Dec-00		S	Computer Room	EMS Upgrade Support Software	3	8,421	Reliability	EMS Enhancements
1-Apr-03	11748	F	Security Center	True Time Device	5	8,295	Split	Control Room Infrastructure
01-Jul-97	10196	C	Computer Room	Laptop - Workstation HP	3	8,257	Split	Computer Room Expansion
01-May-00	10913	F	Ohio Office	Ricoh 350 Copier	5	8,249	Transmission Se	AEP Project
25-Jun-01		S	Software	HR Software - Employees Self Servic	3	8,248	Management	Administration
15-Aug-01		F	Security Center	Raised floor in computer room	5	8,148	Split	Computer Room Expansion
31-Jul-97	10385	C	Security Center	Workstation	3	8,100	Split	Control Room Infrastructure
11-Jul-01	11130	C	Telecom Room	Vendor Net Router	3	7,955	Split	Computer Room Expansion
25-Jan-01	10981	C	J. Chamberlin	Workstation	3	7,952	Transmission Se	OASIS
25-Jan-01	10983	C	K. Tynes	Workstation	3	7,952	Transmission Se	OASIS
25-Jan-01	10985	C	C. Jamieson	Workstation	3	7,952	Transmission Se	OASIS
25-Jan-01	10987	C	J. Boshears	Workstation	3	7,952	Transmission Se	OASIS
16-Mar-99	10289	F	9th Floor	Office Panels	5	7,919	Management	Administration
3-Apr-03		F	9th Floor	Bal. On Cubes & Chairs	5	7,912	Management	Administration
14-Aug-01		S	Software	Norton AntiVirus Software	3	7,710	Management	Enterprise Security
17-Apr-03		C	IT Infrastructure	CSI Essential SoftWare for Nokia	3	7,692	Split	Computer Room Expansion
01-Jul-97	10375	C	Security Center	Closed Circuit TV System	3	7,674	Split	Enterprise Security
26-Nov-97	10419	C	9th Floor	Color printer	3	7,608	Management	Administration
01-Apr-99	10277	C	Telecom Room	Laptop	3	7,546	Split	Computer Room Expansion
27-Mar-02		S	Software	VM Workstation 3.0	3	7,541	Transmission Se	OASIS
01-Apr-00	10842	C	R. Ciesiel	Workstation	3	7,456	Regional Reliabil	Administration
27-Nov-02	11361	C	8th Floor Reception	ScanXtender Scanner	3	7,395	Management	Administration
15-Apr-97		F	Security Center	Carpet in Security Room	5	7,387	Split	Control Room Infrastructure
01-Sep-00	10923	C	Computer Room	ICCP Machine-Redundant	3	7,366	Reliability	EMS Enhancements
01-Sep-00	10924	C	Computer Room	ICCP Machine-Redundant	3	7,366	Reliability	EMS Enhancements
01-Sep-00	10925	C	Computer Room	ICCP Machine-Development	3	7,366	Reliability	EMS Enhancements
23-Feb-01	11005	C	Computer Room	Hi-Speed Backup Sytem (Veritas SW	3	7,356	Split	Computer Room Expansion
02-Dec-99		S	Corporate Services - 4th Floor	Imaging Software	3	7,349	Management	Administration
20-Jul-01	11129	C	Computer Room	Cisco Router & Smartnet	3	7,286	Split	Computer Room Expansion
11-Jul-02	11292-94	C	8th Floor Printers	2-Laser Jet 8150; 1-Laser Jet 1200N	3	7,285	Management	Administration

Southwest Power Pool, Inc.

Fixed Assets and Depreciation as of 12/31/2003

Date Acquired	ID Number	C/F/S	Location	Description	Life (Yrs)	12/31/2003 Ending Cost	Function	Project
29-Aug-01	11198	C	Computer Room	73 Gigabyte Hard Drives	3	7,229	Split	Computer Room Expansion
01-Feb-97	10077	F	Computer Room	Raised Floor	5	7,225	Split	Computer Room Expansion
29-Dec-97	10420	C	Security Center	Frequency Recorder	3	7,200	Split	Control Room Infrastructure
17-Feb-99		S	K. Perry	DEC Server Licenses	3	7,179	Split	Computer Room Expansion
2/14/2003		F	9th Floor	Additional Cubes Setup	5	7,143	Management	Administration
01-Jun-00	10895	C	Computer Room	Workstation	3	7,129	Split	Computer Room Expansion
01-Jun-00	10898	C	A. Blacklaw	Workstation	3	7,129	Transmission Se	OASIS
01-Jun-00	10917	C	J. Smith	Workstation	3	7,129	Transmission Se	OASIS
01-Apr-00	10893	C	C. Ordaz	Workstation	3	7,129	Transmission Se	OASIS
01-Jan-00	10818	C	R. Rhodes	Laptop	3	7,071	Split	Control Room Infrastructure
01-Mar-00	10840	C	R. Ciesiel	Laptop	3	7,008	Regional Reliabil	Administration
01-Feb-96	10342	C	6th Floor	Laser 5SI-REC	3	6,850	Management	Administration
20-Dec-99	10807	C	T. Mallinger	Laptop computer	3	6,815	Split	Control Room Infrastructure
01-Nov-00	10971	C	Engineering	Plotter-36" DesignJet 750C Plus	3	6,728	Transmission Se	OASIS
19-Jun-01		S	Software	WordPerfect Office; Corel; Acrobat	3	6,676	Management	Administration
01-Dec-00		S	Computer Room	MMS EASE & Exceed & DCE	3	6,613	Split	Computer Room Expansion
01-Jan-97		C	Computer Room	Network	3	6,598	Split	Computer Room Expansion
01-Feb-00	10800	C	4th Floor	Server	3	6,536	Management	Administration
15-Feb-96	10541	C	C. Monroe	Laptop	3	6,521	Management	Administration
15-Feb-96	10542	C	M. Sidor	Laptop	3	6,521	Management	Administration
1-Dec-03		S	Telecomm Room	Software to upgrade Sec. Ctr. Phone	3	6,474	Split	Control Room Infrastructure
31-Oct-97	10430	F	Computer Room	LanScape 3000 Rack System	5	6,473	Split	Computer Room Expansion
01-Jan-00	10781	C	Computer Room	Web Server	3	6,458	Split	Computer Room Expansion
01-Jan-00	10782	C	Computer Room	Web Server	3	6,458	Split	Computer Room Expansion
9-Oct-03	11902	C	Computer Room	EMS Redundant Server	3	6,448	Reliability	EMS Enhancements
9-Oct-03	11901	C	Computer Room	EMS Redundant Server	3	6,447	Reliability	EMS Enhancements
01-Jun-00	10909	C	D. Martin	Workstation	3	6,441	Split	IT Architecture
22-May-02	n/a	S	Computer Room	36GB Ultra SCSI 10 K RPM Disk Driv	3	6,434	Split	Computer Room Expansion
20-Jul-01	11134	C	Firewall	BorderGuard 3000	3	6,387	Split	Enterprise Security
20-Jul-01	11135	C	Firewall	BorderGuard 3000	3	6,387	Split	Enterprise Security
24-Apr-03		S	IT & EMS group	15 copies of Visual Sourcesafe	3	6,360	Split	Computer Room Expansion
01-Apr-00	10843	C	M. Crosby	Laptop	3	6,303	Split	IT Architecture
14-Nov-02	n/a	F	8th Floor	Extra Cubicles	5	6,301	Management	Administration
20-Nov-03	11956	C	Computer Room	PowerEdge 650 2.4GH Server	3	6,298	Market	Market Systems
20-Nov-03	11957	C	Computer Room	PowerEdge 650 2.4GH Server	3	6,298	Market	Market Systems
20-Nov-03	11955	C	Computer Room	PowerEdge 650 2.4GH Server	3	6,298	Market	Market Systems
02-Jul-01		S	Software	VeriSign OnSite Global Server Admin	3	6,255	Split	Enterprise Security
2/6/2003	11393	C	A. Kloster	Dell Latitude C840 workstation	3	6,160	Split	Enterprise Security
18-Dec-97	10424	C	8 - IT Lab	Infocus LP420 Video Projector	3	6,141	Management	Administration
01-Jan-97	10078	C	Library	Laser Printer - 5SI - ENG	3	6,119	Management	Administration
01-Jan-97	10622	C	9th Floor	Laser Printer - 5SI - OPS	3	6,119	Management	Administration

Southwest Power Pool, Inc.

Fixed Assets and Depreciation as of 12/31/2003

Date Acquired	ID Number	C/F/S	Location	Description	Life (Yrs)	12/31/2003 Ending Cost	Function	Project
29-Sep-03	11894	C	Security Center	HP LaserJet 5100 DTN Printer	3	6,109	Split	Control Room Infrastructure
23-Oct-02	n/a	S	Software	Authorware & VLO Corp Studio Mix	3	6,082	Split	Computer Room Expansion
1-Apr-02	11254	C	Computer Room	Server	3	6,064	Split	Computer Room Expansion
1-Apr-02	11255	C	Computer Room	Server	3	6,064	Split	Computer Room Expansion
25-Mar-99	10351	C	Computer Room	Docking Station	3	6,052	Split	Computer Room Expansion
3-Jun-02	n/a	C	Computer Room	Cisco Routers (Spares)	3	5,988	Split	Computer Room Expansion
13-Nov-01		F	4th Floor	Security System for 465	5	5,984	Split	Enterprise Security
01-Jul-98	10172	C	Computer Room	Workstation	3	5,974	Split	Computer Room Expansion
13-Nov-03	11949	C	ESCA Office	PIX Firewall - 515E	3	5,957	Split	Enterprise Security
01-Sep-00	10964	C	J. Wilson	Workstation	3	5,937	Transmission Se	OASIS
18-Dec-03	11958	C	J. Keaton	Latitude D800 Laptop & Docking	3	5,911	Split	IT Architecture
01-Dec-98	10327	C	Computer Room	Workstation	3	5,897	Split	Computer Room Expansion
01-Feb-97	10545	C	Backup Site - AREC	Laptop	3	5,896	Reliability	Business Continuity
01-Dec-00	10979	C	J. Marschewski	Laptop	3	5,869	Management	Administration
2/6/2003	11388	C	Security Center	HP LaserJet 5100 DTN Printer	3	5,846	Split	Control Room Infrastructure
01-Aug-99	10533	S	8-IT Lab	Portable Projector	3	5,791	Management	Administration
01-Jul-00	10922	C	B. Gibson	Workstation	3	5,789	Split	IT Architecture
6-Nov-03	11931	C	ESCA Office	Dell PowerEdge 4210 Cabinet	3	5,780	Market	Market Systems
6-Nov-03	11930	C	ESCA Office	Dell PowerEdge 4210 Cabinet	3	5,779	Market	Market Systems
18-Dec-02	n/a	F	12th Floor Office	Bal. On 12th floor conf. Table & chairs	5	5,712	Management	Administration
16-Feb-95	10278	C	8th Floor	Laserjet 4Si - ENG	3	5,695	Management	Administration
01-Sep-00		S	Computer Room	McAfee License Scans	3	5,661	Management	Enterprise Security
27-Feb-95	10248	C	Security Center	Dell 575/XL w/ 17" monitor	3	5,655	Split	Control Room Infrastructure
01-Jan-97	10228	C	R. Ciesiel	Laptop	3	5,636	Regional Reliabil	Administration
20-Aug-01	11194	C	J. Woods	Dell Precision 330 Workstation	3	5,633	Transmission Se	OASIS
10-Sep-03	11889	C	T. Thompson	Dell C400 Latitude Laptop	3	5,589	Split	IT Architecture
02-Dec-99	10794	F	Corporate Services - 4th Floor	Scanner	5	5,539	Management	Administration
26-Jun-01	11119	C	S. Pilgrim	Dell P4 Precision Workstation	3	5,522	Split	IT Architecture
01-Jun-01	11089	C	J. Holland	Dell P4 Precision Wkstn	3	5,522	Transmission Se	OASIS
01-Jun-01	11103	C	B. Walkup	Dell P4 Precision Workstation	3	5,522	Transmission Se	OASIS
31-Mar-03		F	9th Floor	Bal. On Cubes & Chairs	5	5,509	Management	Administration
02-Jul-01		S	Software	PGP Personal Security Software	3	5,504	Management	Enterprise Security
5-Mar-02		F	Office Chairs	Deposit on chairs	5	5,468	Management	Administration
23-Apr-01	11080	F	7th Floor	Generator Switch	5	5,464	Reliability	Business Continuity
22-Nov-99	10602	C	A. Rodriguez	laptop computer	3	5,428	Split	IT Architecture
01-Sep-01	11178	C	H. Ho	Dell Precision 330 MiniTower	3	5,418	Split	IT Architecture
01-Dec-98	10201	C	7-Telecom Room	DELL Laptop - Network Analyzer	3	5,395	Split	IT Architecture
01-Dec-98	10268	C	C. Monroe	DELL Laptop	3	5,395	Split	IT Architecture
01-Aug-99	10434	C	C. Mamandur	Laptop	3	5,379	Transmission Se	OASIS
20-Nov-03	11935	C	ESCA Office	Fiber Switch	3	5,328	Market	Market Systems
20-Nov-03	11934	C	ESCA Office	Fiber Switch	3	5,328	Market	Market Systems

Southwest Power Pool, Inc.

Fixed Assets and Depreciation as of 12/31/2003

Date Acquired	ID Number	C/F/S	Location	Description	Life (Yrs)	12/31/2003 Ending Cost	Function	Project
15-May-03	11799	C	B. Sugg	Dell Latitude C840 laptop	3	5,306	Split	IT Architecture
15-May-03	11802	C	J. Holland	Dell Latitude C840 laptop	3	5,306	Transmission Se	OASIS
20-Jul-01	11131	S	Computer Room	PowerEdge 1550-Web Server	3	5,278	Split	IT Architecture
20-Jul-01	11132	S	Computer Room	PowerEdge 1550-Web Server	3	5,278	Split	IT Architecture
20-Jul-01	11133	S	Computer Room	PowerEdge 1550-Web Server	3	5,278	Split	IT Architecture
27-Feb-95	10247	C	R. Wheeler - Home	Workstation	3	5,255	Split	IT Architecture
27-Feb-95	10252	C	B. Rew - Home	Workstation	3	5,255	Transmission Se	OASIS
01-Sep-98	10174	C	J. Keaton	Laptop	3	5,239	Split	IT Architecture
20-Nov-03	11939	C	ESCA Office	Fiber Switch	3	5,195	Market	Market Systems
20-Nov-03	11940	C	ESCA Office	Fiber Switch	3	5,194	Market	Market Systems
15-Nov-02	n/a	F	12th Floor Office	dep. On Conf. Table w/chairs	5	5,181	Management	Administration
13-Nov-01		S	Software	TOAD (7 copies)	3	5,174	Market	Market Systems
12-Sep-02	n/a	F	8th Floor	Furn. For reception, MTS, interview rc	5	5,153	Management	Administration
31-Dec-99	10784	C	Compter Room	Web Redundant Server	3	5,148	Split	IT Architecture
31-Dec-99	10785	C	Computer Room	Web Redundant Server	3	5,148	Split	IT Architecture
28-Mar-01	11044	C	6th Floor	Projector for Training Room	3	5,142	Management	Administration
16-Feb-01	11001	C	S. Austin	Workstation	3	5,116	Split	IT Architecture
01-Feb-97	10202	C	B. Rew	Laptop	3	5,096	Transmission Se	OASIS
31-Aug-01	11199	C	Computer Room	Mail Sweeper Server	3	5,087	Management	Enterprise Security
2/27/2003	11398	C	R. Ciesiel	Dell Latitude C640 Laptop	3	5,056	Regional Reliabil	Administration
10-Apr-03	11753	C	RJ Robertson	Dell Latitude C640 Laptop	3	5,029	Management	Administration
10-Apr-03	11756	C	E. Davis	Dell Latitude C640 Laptop	3	5,029	Market	Market Systems
21-Feb-02	11240	C	Computer Room	Fluke Network Analyzer	3	5,014	Split	IT Architecture
09-Jul-01	11106	C	BackUp Site - AREC	Remote Backup Site Equipment	3	5,000	Reliability	Business Continuity
01-Jul-01	11144	C	AREC Redundancy Proj.	Cisco Router	3	4,985	Reliability	Business Continuity
01-Jul-01	11145	C	Telecom Room	Cisco Router	3	4,985	Split	Control Room Infrastructure
01-Jun-99	10389	C	A. Sabb	Work Station	3	4,967	Split	IT Architecture
2/20/2003		F	9th Floor	Galli & RJ Furn; 10 Chairs;Cubes	5	4,963	Management	Administration
9-May-02	11271	C	Telecom Room	Security Badge Printer System	3	4,905	Management	Enterprise Security
03-Mar-00	10822	C	6-Training Ctr.	Redundant Compaq Machine	3	4,884	Management	Administration
03-Mar-00	10824	C	6-Training Ctr.	Redundant Compaq Machine	3	4,884	Management	Administration
03-Mar-00	10826	C	6-Training Ctr.	Redundant Compaq Machine	3	4,884	Management	Administration
03-Mar-00	10828	C	6-Training Ctr.	Redundant Compaq Machine	3	4,884	Management	Administration
9-Oct-03	11898	C	T. Avery	Dell Latitude C840 laptop	3	4,860	Split	IT Architecture
9-Oct-03	11903	C	J. Kelly	Dell Latitude C840 laptop	3	4,860	Split	IT Architecture
21-Aug-03	11886	C	J. Wilson	Dell Latitude C840 laptop	3	4,860	Transmission Se	OASIS
19-Aug-02	n/a	S	Computer Room	Exch. Serv. Licenses (2yr)E-Mail Syst	3	4,847	Split	IT Architecture
29-Aug-01	11169	C	Computer Room	PowerEdge 2550, Pentium III	3	4,814	Split	IT Architecture
29-Aug-01	11170	C	Computer Room	PowerEdge 2550, Pentium III	3	4,814	Split	IT Architecture
29-Aug-01	11171	C	Computer Room	PowerEdge 2550, Pentium III	3	4,814	Split	IT Architecture
01-Jul-00	10912	C	12th Floor	Color Printer	3	4,806	Management	Administration

Southwest Power Pool, Inc.

Fixed Assets and Depreciation as of 12/31/2003

Date Acquired	ID Number	C/F/S	Location	Description	Life (Yrs)	12/31/2003 Ending Cost	Function	Project
24-Jun-03	11867	C	K. Tynes	Dell Latitude C840 laptop	3	4,802	Transmission Se	OASIS
07-Mar-01	11019	C	Scheduling Agent	CISCO Switch-OATI (off site)	3	4,776	TSP Support	Enhance Energy Scheduling
01-Dec-00	10972	C	8-IT Lab	Laptop	3	4,738	Split	IT Architecture
01-Mar-97	10282	C	K. Moran	Laptop -Dell Latitude 166	3	4,664	Split	IT Architecture
24-Mar-97		F	Computer Room	Carpet	5	4,627	Split	Computer Room Expansion
01-May-01	11077	C	Training Center	Projector	3	4,622	Management	Administration
28-Aug-03	11890	C	Computer Room	PowerEdge 2650 Server	3	4,617	Market	Market Systems
28-Aug-03	11891	C	Computer Room	PowerEdge 2650 Server	3	4,616	Market	Market Systems
15-Dec-00		S	Engineering	U. S. AutoCad	3	4,550	Reliability	Transmission Planning
16-May-01		S	Remote Site	Firewall Software	3	4,514	Split	Enterprise Security
01-Jun-98	10164	C	7-Telecom Room	Telephone System Upgrade	3	4,512	Management	Administration
31-Aug-01	11195	C	Computer Room	Firewall Servers	3	4,452	Split	Enterprise Security
31-Aug-01	11196	C	Computer Room	Firewall Servers	3	4,452	Split	Enterprise Security
31-Aug-01	11197	C	Computer Room	Firewall Servers	3	4,452	Split	Enterprise Security
25-Jan-01	10975	C	R. Dillon	Workstation	3	4,358	Market	Market Systems
25-Jan-01	10977	C	A. Ralls	Workstation	3	4,358	Split	IT Architecture
01-Sep-00	10966	C	N. Brown	Laptop	3	4,334	Management	Administration
01-Aug-99	10561	C	Computer Room	ARS Test Machine	3	4,307	Regional Reliabil	Administration
01-Apr-98	10152	C	Computer Room	Tape Drive	3	4,305	Split	IT Architecture
01-Feb-91	10079	C	Training Center	proxima versacolor	3	4,305	Management	Administration
22-Oct-03	11909	C	J. Rooker	Dell 2.4GB MiniTower	3	4,297	Transmission Se	OASIS
22-Oct-03	11912	C	B. Lux	Dell 2.4GB MiniTower	3	4,297	Transmission Se	OASIS
23-May-01		F	Computer Room	Hardware boards	5	4,280	Split	IT Architecture
2/6/2003	11395	C	J. Mills	Dell Precision 350 Workstation	3	4,208	Transmission Se	OASIS
03-Sep-97	10378	C	Security Center	Raised Flooring for Sec. Ctr. Lease #:	3	4,160	Split	Control Room Infrastructure
01-Aug-01	11146	C	Computer Room	Cabinet - 4100 M Series	3	4,145	Split	Computer Room Expansion
14-Jan-94	10142	C	J. Keaton	Dell 450/lbase	3	4,100	Split	IT Architecture
08-Dec-99	10603	C	9th Floor	HP Printer	3	4,096	Management	Administration
23-Jul-03	11870	F	Outside Generator	Steps & Platform to Gen. Door	5	4,090	Reliability	Business Continuity
27-Feb-95	10251	C	R. Turner	Dell 575/XL w/ 17" monitor	3	4,080	Split	IT Architecture
16-Jan-01		F	Computer Room	Raised Floor	5	4,066	Split	Computer Room Expansion
30-Jan-02	11241	C	Kevin Goolsby	PC	3	4,017	Transmission Se	OASIS
6-Nov-03	11950	C	Training Room	Dell 3200 MP Projector	3	4,016	Market	Market Systems
				Assets < 4,000		1,261,768		
						33,275,131		

Sum of 12/31/2003 Ending Cost	Function							
Project	Management	Market	Reliability	Split	Transmission Service Provision	TSP Support	Regional Reliability	Grand Total
Administration	\$1,035,567.98						\$29,463.24	\$1,065,031.22
AEP Project					\$44,095.00			\$44,095.00
Business Continuity			\$259,690.27					\$259,690.27
Business Systems	\$168,171.56							\$168,171.56
Computer Room Expansion				\$1,246,447.20				\$1,246,447.20
Control Room Infrastructure		\$26,200.00		\$631,476.35		\$42,666.00		\$700,342.35
EMS Enhancements			\$1,621,434.78	\$444,803.38				\$2,066,238.16
EMS Implementation			\$2,692,652.00	\$36,500.00				\$2,729,152.00
Enhance Energy Scheduling						\$2,727,441.62		\$2,727,441.62
Enterprise Security	\$39,841.00			\$273,106.12	\$55,031.00			\$367,978.12
IT Architecture				\$196,139.06				\$196,139.06
Market Systems		\$20,814,257.75						\$20,814,257.75
OASIS					\$637,794.32			\$637,794.32
Operating Reserve Sharing			\$85,402.00					\$85,402.00
Transmission Planning			\$166,950.00					\$166,950.00
Grand Total	\$1,243,580.54	\$20,840,457.75	\$4,826,129.05	\$2,828,472.11	\$736,920.32	\$2,770,107.62	\$29,463.24	\$33,275,130.63

Sum of 2004 Budget	Function							
Project2	Management	Market	Reliability	Split	Transmission Service Provision	TSP Support	Regional Reliability	Grand Total
Administration	\$1,297,438.00						\$9,000.00	\$1,306,438.00
Business Continuity			\$804,125.00					\$804,125.00
Computer Room Expansion				\$308,040.00				\$308,040.00
EMS Enhancements			\$218,000.00					\$218,000.00
Enhance Energy Scheduling						\$7,500.00		\$7,500.00
Enterprise Security	\$49,085.00			\$71,976.00				\$121,061.00
Market Systems		\$12,859,320.00						\$12,859,320.00
OASIS					\$211,775.00			\$211,775.00
Transmission Planning			\$53,000.00					\$53,000.00
Grand Total	\$1,346,523.00	\$12,859,320.00	\$1,075,125.00	\$380,016.00	\$211,775.00	\$7,500.00	\$9,000.00	\$15,889,259.00

Period	Prior Rent per Month	Scheduled Rate Increase	Current Rent Rate	Total Rent for the Period	Annual Cost per Sq. Ft.
Jan-Sept. 2003	47,625	-		428,629	\$ 15.13
Oct 2003-Oct. 2004	47,625	3%	49,054	588,651	\$ 15.58
Oct 2004-Oct. 2005	49,054	3%	50,526	606,311	\$ 16.05
Oct. 2005 - Oct. 2006	50,526	3%	52,042	624,500	\$ 16.53
Oct. 2006-Oct. 2007	52,042	3%	53,603	643,235	\$ 17.03
Oct. 2007-Oct. 2008	53,603	3%	55,211	662,532	\$ 17.54
Oct. 2008 - Oct. 2009	55,211	3%	56,867	682,408	\$ 18.07
Oct. 2009 - Oct 2010	56,867	3%	58,573	702,880	\$ 18.61
Oct 2010 - Oct. 2011	58,573	3%	60,331	723,967	\$ 19.17
Total Rent for the REMAINING Life of the Lease				5,663,113	
Average MONTHLY Rent for the REMAINING Life of the Lease				53,934	
Square Footage Occupied				37,773	
Average ANNUAL Cost per Square Foot				\$ 17.13	

Sum of Op Budget	Corporate Function						
Departmental Function	Management	Markets	Regional Reliability	Reliability	Transmission Service Provider	TSP Support	Grand Total
ADMINISTRATIVE	2,131,004						2,131,004
BUSINESS APPLICATIONS	29,904				149,519		179,423
BUSINESS ARCHITECTURE & STRATEGY	164,471						164,471
BUSINESS INFRASTRUCTURE	938,693						938,693
BUSINESS PROJECT MANAGEMENT	29,904						29,904
CHANGE MANAGEMENT	224,278						224,278
COMPLIANCE			359,519				359,519
CORPORATE AFFAIRS	59,380						59,380
CUSTOMER RELATIONS	104,663						104,663
EMS APPLICATIONS				598,076	608,248		1,206,324
ENGINEERING MANAGEMENT	261,658			74,759			336,417
FINANCE & ACCOUNTING	680,313						680,313
FINANCIAL ANALYSIS & PROCESS IMPROVEMENT	149,519						149,519
GOVERNMENT RELATIONS	74,760						74,760
HUMAN RESOURCES	323,039						323,039
INTERCONNECTION ENGINEERING					299,039		299,039
IT MANAGEMENT	350,567						350,567
LEGAL	284,278						284,278
MARKET ANALYSIS		898,077					898,077
MARKET MANAGEMENT		336,417					336,417
MARKET OPERATIONS		7,504,604					7,504,604
MARKET SUPPORT		1,995,278					1,995,278
MEMBER RELATIONS	44,856						44,856
NETWORK MODELS				1,033,798	74,759		1,108,557
OFFICE & FACILITIES	378,797						378,797
OPERATIONS ENGINEERING			37,380	441,082	299,039		777,501
OPERATIONS MANAGEMENT	52,332						52,332
REGIONAL SUPPORT & SCHEDULING			74,760				74,760
RELIABILITY AUTHORITY			37,380	2,003,630			2,041,010
RELIABILITY ENGINEERING			299,039				299,039
SCHEDULING			149,519			1,792,956	1,942,475
SETTLEMENTS		550,557			447,755		998,312
TARIFF ADMINISTRATION	299,039		50,080		1,793,429		2,142,548
TECH SUPPORT				283,283	74,759	171,168	529,210
TRAINING	74,759	74,759					149,518
TRANSMISSION ENGINEERING					598,077		598,077
TRANSMISSION PLANNING				1,179,532			1,179,532
TRANSMISSION POLICY	743,037				998,557		1,741,594
TREASURY	14,952						14,952
Grand Total	7,414,203	11,359,692	1,007,677	5,614,160	5,343,181	1,964,124	32,703,037

SPP Raw Operating Budget Data

Salary, Travel, Meetings, Comm NERC Admin L&M Services
 19,291,638 800,000 1,270,347 3,767,368 7,573,680

Personnel	Corporate Function	Departmental Function	Op Budget	FTEs		19,291,638	800,000	1,270,347	3,767,368	7,573,680
Accounting	Management	ADMINISTRATIVE	149,519	1	0.71%	137,797		3,519		8,203
Accounting	Management	FINANCE & ACCOUNTING	598,077	4	2.86%	551,190		14,076		32,811
Accounting	Management	FINANCIAL ANALYSIS & PROCESS IMPROVEMENT	149,519	1	0.71%	137,797		3,519		8,203
Accounting	Markets	SETTLEMENTS	550,557	3	2.14%	413,392		10,557		126,608
Accounting	Transmission Service Provider	BUSINESS APPLICATIONS	149,519	1	0.71%	137,797		3,519		8,203
Accounting	Transmission Service Provider	SETTLEMENTS	299,039	2	1.43%	275,595		7,038		16,406
AEP Project	Management	TARIFF ADMINISTRATION	299,039	2	1.43%	275,595		7,038		16,406
Applications	Management	IT MANAGEMENT	149,519	1	0.71%	137,797		3,519		8,203
Applications	Markets	MARKET SUPPORT	373,798	2.5	1.79%	344,494		8,797		20,507
Applications	Reliability	EMS APPLICATIONS	448,557	3	2.14%	413,392		10,557		24,608
Applications	Reliability	NETWORK MODELS	734,759	0.5	0.36%	68,899		1,759		4,101
Applications	Transmission Service Provider	EMS APPLICATIONS	608,248	0.5	0.36%	68,899		1,759		537,590
Applications	Transmission Service Provider	NETWORK MODELS	74,759	0.5	0.36%	68,899		1,759		4,101
Applications	Transmission Service Provider	SETTLEMENTS	74,759	0.5	0.36%	68,899		1,759		4,101
Applications	Transmission Service Provider	TARIFF ADMINISTRATION	373,798	2.5	1.79%	344,494		8,797		20,507
Applications	TSP Support	SCHEDULING	299,039	2	1.43%	275,595		7,038		16,406
Bruce Rew	Management	ENGINEERING MANAGEMENT	74,759	0.5	0.36%	68,899		1,759		4,101
Bruce Rew	Management	TRANSMISSION POLICY	518,759	0.5	0.36%	68,899		1,759		4,101
Carl Monroe	Management	ADMINISTRATIVE	37,380	0.25	0.18%	34,449		880		2,051
Carl Monroe	Management	IT MANAGEMENT	37,380	0.25	0.18%	34,449		880		2,051
Carl Monroe	Management	OPERATIONS MANAGEMENT	37,380	0.25	0.18%	34,449		880		2,051
Carl Monroe	Markets	MARKET OPERATIONS	37,380	0.25	0.18%	34,449		880		2,051
Cheryl Robertson	Management	ADMINISTRATIVE	149,519	1	0.71%	137,797		3,519		8,203
Customer Service	Management	ADMINISTRATIVE	14,952	0.1	0.07%	13,780		352		820
Customer Service	Markets	MARKET SUPPORT	254,183	1.7	1.21%	234,256		5,982		13,945
Customer Service	Reliability	RELIABILITY AUTHORITY	14,952	0.1	0.07%	13,780		352		820
Customer Service	Transmission Service Provider	TARIFF ADMINISTRATION	299,039	2	1.43%	275,595		7,038		16,406
Customer Service	TSP Support	SCHEDULING	14,952	0.1	0.07%	13,780		352		820
HR	Management	ADMINISTRATIVE	528,137	3	2.14%	413,392		10,557		24,608
HR	Management	HUMAN RESOURCES	323,039	2	1.43%	275,595		7,038		16,406
Infrastructure	Management	BUSINESS INFRASTRUCTURE	619,702	4	2.86%	551,190		14,076		32,811
Infrastructure	Management	IT MANAGEMENT	96,384	0.5	0.36%	68,899		1,759		4,101
Infrastructure	Markets	MARKET SUPPORT	208,524	1.25	0.89%	172,247		4,399		10,253
Infrastructure	Reliability	TECH SUPPORT	208,524	1.25	0.89%	172,247		4,399		10,253
Infrastructure	Transmission Service Provider	SETTLEMENTS	59,005	0.25	0.18%	34,449		880		2,051
Infrastructure	Transmission Service Provider	TARIFF ADMINISTRATION	59,005	0.25	0.18%	34,449		880		2,051
Infrastructure	TSP Support	TECH SUPPORT	96,409	0.5	0.36%	68,899		1,759		4,101
Jeff Price	Transmission Service Provider	TRANSMISSION POLICY	699,519	1	0.71%	137,797		3,519		8,203
Karen Thomas	Management	ADMINISTRATIVE	112,139	0.75	0.54%	103,348		2,639		6,152
Karen Thomas	Markets	MARKET SUPPORT	37,380	0.25	0.18%	34,449		880		2,051
Katie Duncan	Management	TRAINING	74,759	0.5	0.36%	68,899		1,759		4,101
Katie Duncan	Markets	TRAINING	74,759	0.5	0.36%	68,899		1,759		4,101
Keith Dover	Management	ADMINISTRATIVE	74,759	0.5	0.36%	68,899		1,759		4,101
Keith Dover	Management	CHANGE MANAGEMENT	74,759	0.5	0.36%	68,899		1,759		4,101
Kevin Perry	Management	BUSINESS APPLICATIONS	29,904	0.2	0.14%	27,559		704		1,641
Kevin Perry	Management	BUSINESS ARCHITECTURE & STRATEGY	44,856	0.3	0.21%	41,339		1,056		2,461
Kevin Perry	Management	BUSINESS INFRASTRUCTURE	14,952	0.1	0.07%	13,780		352		820
Kevin Perry	Management	BUSINESS PROJECT MANAGEMENT	29,904	0.2	0.14%	27,559		704		1,641
Kevin Perry	Management	IT MANAGEMENT	29,904	0.2	0.14%	27,559		704		1,641
Lanny Nickell	Management	OPERATIONS MANAGEMENT	14,952	0.1	0.07%	13,780		352		820
Lanny Nickell	Regional Reliability	REGIONAL SUPPORT & SCHEDULING	44,856	0.3	0.21%	41,339		1,056		2,461
Lanny Nickell	Reliability	OPERATIONS ENGINEERING	29,904	0.2	0.14%	27,559		704		1,641
Lanny Nickell	Reliability	RELIABILITY AUTHORITY	829,904	0.2	0.14%	27,559	800,000	704		1,641
Lanny Nickell	Transmission Service Provider	TARIFF ADMINISTRATION	14,952	0.1	0.07%	13,780		352		820
Lanny Nickell	TSP Support	SCHEDULING	14,952	0.1	0.07%	13,780		352		820
Laurie Guinn	Management	LEGAL	149,519	1	0.71%	137,797		3,519		8,203

SPP Raw Operating Budget Data

Salary, Travel, Meetings, Comm NERC Admin L&M Services
 19,291,638 800,000 1,270,347 3,767,368 7,573,680

Personnel	Corporate Function	Departmental Function	Op Budget	FTEs					
Les Dillahunty	Management	ENGINEERING MANAGEMENT	37,380	0.25	0.18%	34,449		880	2,051
Les Dillahunty	Management	GOVERNMENT RELATIONS	37,380	0.25	0.18%	34,449		880	2,051
Les Dillahunty	Management	TRANSMISSION POLICY	74,759	0.5	0.36%	68,899		1,759	4,101
Market Dev and Analysis	Markets	MARKET ANALYSIS	898,077	4	2.86%	551,190	14,076	32,811	300,000
Market Dev and Analysis	Markets	MARKET MANAGEMENT	74,759	0.5	0.36%	68,899		1,759	4,101
Market Dev and Analysis	Markets	MARKET OPERATIONS	6,420,591	0.5	0.36%	68,899		1,759	1,779,933
Market Dev and Analysis	Markets	MARKET SUPPORT	149,519	1	0.71%	137,797		3,519	8,203
Market Operations	Markets	MARKET OPERATIONS	1,046,633	7	5.00%	964,582	24,632	57,419	
Nick Brown	Management	ADMINISTRATIVE	989,839	0.75	0.54%	103,348	780,339		6,152
Nick Brown	Management	GOVERNMENT RELATIONS	37,380	0.25	0.18%	34,449		880	2,051
Ops Engineering	Regional Reliability	OPERATIONS ENGINEERING	37,380	0.25	0.18%	34,449		880	2,051
Ops Engineering	Reliability	OPERATIONS ENGINEERING	411,178	2.75	1.96%	378,943		9,677	22,558
Ops Engineering	Transmission Service Provider	OPERATIONS ENGINEERING	299,039	2	1.43%	275,595		7,038	16,406
Ops Engineering	Reliability	EMS APPLICATIONS	149,519	1	0.71%	137,797		3,519	8,203
Ops Engineering	Reliability	NETWORK MODELS	299,039	2	1.43%	275,595		7,038	16,406
Pat Bourne	Management	TRANSMISSION POLICY	149,519	1	0.71%	137,797		3,519	8,203
Planning	Regional Reliability	RELIABILITY ENGINEERING	299,039	2	1.43%	275,595		7,038	16,406
Planning	Reliability	ENGINEERING MANAGEMENT	74,759	0.5	0.36%	68,899		1,759	4,101
Planning	Reliability	TRANSMISSION PLANNING	1,179,532	6.5	4.64%	895,683	22,873	260,976	
Reliability Coor	Regional Reliability	RELIABILITY AUTHORITY	37,380	0.25	0.18%	34,449		880	2,051
Reliability Coor	Reliability	RELIABILITY AUTHORITY	1,009,255	6.75	4.82%	930,133	23,753	55,369	
Richard Dillon	Markets	MARKET MANAGEMENT	149,519	1	0.71%	137,797		3,519	8,203
RJ Robertson	Management	CUSTOMER RELATIONS	104,663	0.7	0.50%	96,458		2,463	5,742
RJ Robertson	Management	MEMBER RELATIONS	44,856	0.3	0.21%	41,339		1,056	2,461
Ron Ciesiel	Regional Reliability	COMPLIANCE	359,519	1	0.71%	137,797		3,519	8,203
Roy Sundman	Transmission Service Provider	TRANSMISSION POLICY	149,519	1	0.71%	137,797		3,519	8,203
Scheduling	Regional Reliability	SCHEDULING	149,519	1	0.71%	137,797		3,519	8,203
Scheduling	TSP Support	SCHEDULING	1,426,633	7	5.00%	964,582	24,632	57,419	380,000
Security	Management	BUSINESS ARCHITECTURE & STRATEGY	119,615	0.8	0.57%	110,238		2,815	6,562
Security	Management	BUSINESS INFRASTRUCTURE	304,039	2	1.43%	275,595		7,038	16,406
Security	Management	OFFICE & FACILITIES	154,519	1	0.71%	137,797		3,519	8,203
Security	Regional Reliability	REGIONAL SUPPORT & SCHEDULING	29,904	0.2	0.14%	27,559		704	1,641
Sherry Jensen	Management	ENGINEERING MANAGEMENT	149,519	1	0.71%	137,797		3,519	8,203
Stacy Duckett	Management	ADMINISTRATIVE	37,380	0.25	0.18%	34,449		880	2,051
Stacy Duckett	Management	CORPORATE AFFAIRS	59,380	0.25	0.18%	34,449		880	2,051
Stacy Duckett	Management	LEGAL	134,759	0.5	0.36%	68,899		1,759	4,101
Tariff Administration	Regional Reliability	TARIFF ADMINISTRATION	50,080	0.25	0.18%	34,449		880	2,051
Tariff Administration	Transmission Service Provider	TARIFF ADMINISTRATION	1,009,255	6.75	4.82%	930,133	23,753	55,369	12,700
Tariff Studies	Transmission Service Provider	INTERCONNECTION ENGINEERING	299,039	2	1.43%	275,595		7,038	16,406
Tariff Studies	Transmission Service Provider	TRANSMISSION ENGINEERING	598,077	4	2.86%	551,190	14,076	32,811	
Tariff Studies	Transmission Service Provider	TRANSMISSION POLICY	149,519	1	0.71%	137,797		3,519	8,203
Tech Development	Management	CHANGE MANAGEMENT	149,519	1	0.71%	137,797		3,519	8,203
Tech Development	Management	IT MANAGEMENT	37,380	0.25	0.18%	34,449		880	2,051
Tech Development	Markets	MARKET MANAGEMENT	112,139	0.75	0.54%	103,348		2,639	6,152
Tech Development	Markets	MARKET SUPPORT	747,596	5	3.57%	688,987	17,595	41,014	
Telecomm	Management	OFFICE & FACILITIES	224,278	1.5	1.07%	206,696		5,278	12,304
Telecomm	Reliability	TECH SUPPORT	74,759	0.5	0.36%	68,899		1,759	4,101
Telecomm	Transmission Service Provider	TECH SUPPORT	74,759	0.5	0.36%	68,899		1,759	4,101
Telecomm	TSP Support	TECH SUPPORT	74,759	0.5	0.36%	68,899		1,759	4,101
Tom Dunn	Management	ADMINISTRATIVE	37,380	0.25	0.18%	34,449		880	2,051
Tom Dunn	Management	FINANCE & ACCOUNTING	82,236	0.55	0.39%	75,789		1,935	4,512
Tom Dunn	Management	TREASURY	14,952	0.1	0.07%	13,780		352	820
Tom Dunn	Transmission Service Provider	SETTLEMENTS	14,952	0.1	0.07%	13,780		352	820
Training	Markets	MARKET SUPPORT	224,278	1.5	1.07%	206,696		5,278	12,304
Training	Reliability	RELIABILITY AUTHORITY	149,519	1	0.71%	137,797		3,519	8,203
Training	Transmission Service Provider	TARIFF ADMINISTRATION	37,380	0.25	0.18%	34,449		880	2,051

SPP Raw Operating Budget Data

Personnel	Corporate Function	Departmental Function	Op Budget	FTEs
Training	TSP Support	SCHEDULING	37,380	0.25

	Salary, Travel, Meetings, Comm	NERC	Admin 1,270,347	L&M 3,767,368	Services 7,573,680
0.18%	19,291,638 34,449	800,000	492,647	1,148,389	2,051

Sum of FTEs	Corporate Function							Grand Total
	Departmental Function	Management	Markets	Regional Reliability	Reliability	Transmission Service Provider	TSP Support	
ADMINISTRATIVE	7.85							7.85
BUSINESS APPLICATIONS	0.2					1		1.2
BUSINESS ARCHITECTURE & STRATEGY	1.1							1.1
BUSINESS INFRASTRUCTURE	6.1							6.1
BUSINESS PROJECT MANAGEMENT	0.2							0.2
CHANGE MANAGEMENT	1.5							1.5
COMPLIANCE				1				1
CORPORATE AFFAIRS	0.25							0.25
CUSTOMER RELATIONS	0.7							0.7
EMS APPLICATIONS					4	0.5		4.5
ENGINEERING MANAGEMENT	1.75				0.5			2.25
FINANCE & ACCOUNTING	4.55							4.55
FINANCIAL ANALYSIS & PROCESS IMPROVEMENT	1							1
GOVERNMENT RELATIONS	0.5							0.5
HUMAN RESOURCES	2							2
INTERCONNECTION ENGINEERING						2		2
IT MANAGEMENT	2.2							2.2
LEGAL	1.5							1.5
MARKET ANALYSIS			4					4
MARKET MANAGEMENT			2.25					2.25
MARKET OPERATIONS			7.75					7.75
MARKET SUPPORT			13.2					13.2
MEMBER RELATIONS	0.3							0.3
NETWORK MODELS					2.5	0.5		3
OFFICE & FACILITIES	2.5							2.5
OPERATIONS ENGINEERING				0.25	2.95	2		5.2
OPERATIONS MANAGEMENT	0.35							0.35
REGIONAL SUPPORT & SCHEDULING					0.5			0.5
RELIABILITY AUTHORITY				0.25	8.05			8.3
RELIABILITY ENGINEERING				2				2
SCHEDULING				1			9.45	10.45
SETTLEMENTS			3			2.85		5.85
TARIFF ADMINISTRATION	2			0.25		11.85		14.1
TECH SUPPORT					1.75	0.5	1	3.25
TRAINING	0.5	0.5						1
TRANSMISSION ENGINEERING						4		4
TRANSMISSION PLANNING					6.5			6.5
TRANSMISSION POLICY	2					3		5
TREASURY	0.1							0.1
Grand Total	39.15	30.7	5.25	26.25	28.2	10.45		140

WestConnect

	2003 Total	2004 Total	2005 Total	2006 Total	2007 Total	2008 Total	2009 Total	2010 Total	2011 Total	Total
Interim Committee Expenses										
Board Search Expenses	\$0	\$0	\$0	\$0	\$450,000	\$0	\$0	\$0	\$0	\$450,000
CEO/Executive Search Expenses	\$18,000	\$0	\$0	\$0	\$700,000	\$0	\$0	\$0	\$0	\$718,000
Office Space approx. 1000 sq. ft.	\$0	\$36,000	\$36,000	\$36,000	\$21,000	\$0	\$0	\$0	\$0	\$129,000
Administrative	\$12,000	\$24,000	\$24,000	\$24,000	\$9,000	\$0	\$0	\$0	\$0	\$93,000
Total Interim Committee Expenses	\$30,000	\$60,000	\$60,000	\$60,000	\$1,180,000	\$0	\$0	\$0	\$0	\$1,390,000
WestConnect Board Expenses										
Retention Fees	\$0	\$0	\$0	\$0	\$175,000	\$175,000	\$175,000	\$175,000	\$0	\$700,000
Meeting Fees	\$0	\$0	\$0	\$0	\$24,000	\$32,000	\$32,000	\$32,000	\$8,000	\$128,000
Meeting and Travel Expenses	\$0	\$0	\$0	\$0	\$39,000	\$52,000	\$52,000	\$52,000	\$13,000	\$208,000
D & O Insurance	\$0	\$0	\$0	\$0	\$225,000	\$300,000	\$300,000	\$300,000	\$75,000	\$1,200,000
Total Board Expenses	\$0	\$0	\$0	\$0	\$463,000	\$559,000	\$559,000	\$559,000	\$96,000	\$2,236,000
Tariff Filing										
Consultanting	\$100,000	\$280,000	\$100,000	\$100,000	\$90,000	\$0	\$0	\$0	\$0	\$670,000
Systems	\$0	\$0	\$60,000	\$60,000	\$100,000	\$0	\$0	\$0	\$0	\$220,000
RFP Process & Contract	\$0	\$0	\$0	\$0	\$240,000	\$0	\$0	\$0	\$0	\$240,000
SSG-WI Expenses	\$180,000	\$120,000	\$40,000	\$40,000	\$270,000	\$0	\$0	\$0	\$0	\$650,000
Website	\$4,800	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$36,800
Total Outside Consultant Expenses	\$284,800	\$404,000	\$204,000	\$204,000	\$704,000	\$4,000	\$4,000	\$4,000	\$4,000	\$1,816,800
WestConnect Building										
Lease (07 temp. facilities)	\$0	\$0	\$0	\$0	\$180,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$6,180,000
Prepare Facilities (Renovate/, I/C & U	\$0	\$0	\$0	\$0	\$0	\$13,500,000	\$456,000	\$456,000	\$114,000	\$14,526,000
On going Operating Expense	\$0	\$0	\$0	\$0	\$0	\$456,000	\$0	\$0	\$0	\$456,000
Furniture	\$0	\$0	\$0	\$0	\$60,000	\$0	\$0	\$0	\$0	\$60,000
Total Facility Expenses	\$0	\$0	\$0	\$0	\$240,000	\$15,456,000	\$1,956,000	\$1,956,000	\$1,614,000	\$21,222,000
WestConnect Operations										
Operations Software/Hardware	\$0	\$0	\$0	\$0	\$0	\$16,000,000	\$12,000,000	\$16,000,000	\$0	\$44,000,000
Communications between W/C and P	\$0	\$0	\$0	\$0	\$0	\$1,650,000	\$2,200,000	\$550,000	\$150,000	\$4,550,000
Total Operations Systems Expenses	\$0	\$0	\$0	\$0	\$0	\$17,650,000	\$14,200,000	\$16,550,000	\$150,000	\$48,550,000
Staff Expenses										
Project Manager Expenses	\$336,000	\$336,000	\$336,000	\$336,000	\$84,000	\$0	\$0	\$0	\$0	\$1,428,000
Staffing	\$0	\$0	\$0	\$0	\$1,204,000	\$3,408,000	\$3,929,000	\$17,545,000	\$7,194,000	\$33,280,000
Procurement Project Manager (1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Relocation	\$0	\$0	\$0	\$0	\$340,000	\$0	\$700,000	\$1,200,000	\$0	\$2,240,000
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Staff Expenses	\$336,000	\$336,000	\$336,000	\$336,000	\$1,628,000	\$3,408,000	\$4,629,000	\$18,745,000	\$7,194,000	\$36,948,000
Miscellaneous Expenses										
Legal	\$0	\$0	\$0	\$0	\$3,600,000	\$3,600,000	\$3,600,000	\$3,600,000	\$900,000	\$15,300,000
Corporation Financial Reserve	\$0	\$0	\$0	\$0	\$8,000,000	\$0	\$0	\$0	\$0	\$8,000,000
Project Contingency	\$0	\$0	\$0	\$0	\$10,000,000	\$0	\$0	\$0	\$0	\$10,000,000
Dues, licensing, insurance	\$0	\$0	\$0	\$0	\$4,000,000	\$4,000,000	\$4,000,000	\$4,000,000	\$0	\$16,000,000
Total Misc. Expenses	\$0	\$0	\$0	\$0	\$25,600,000	\$7,600,000	\$7,600,000	\$7,600,000	\$900,000	\$49,300,000
Total Expenses	\$650,800	\$800,000	\$600,000	\$600,000	\$29,815,000	\$44,677,000	\$28,948,000	\$45,414,000	\$9,958,000	\$161,462,800

Exhibit 5

**Debt Interest Rates
15 Year Average**

	Prime Rate	Five Year Treasury Notes	Seven Year Treasury Notes	Moody's Long-term Aaa Bond Rate
1989	10.87	8.50	8.52	9.26
1990	10.01	8.37	8.52	9.32
1991	8.46	7.37	7.68	8.77
1992	6.25	6.19	6.63	8.14
1993	6.00	5.14	5.54	7.22
1994	7.15	6.69	6.91	7.97
1995	8.83	6.38	6.50	7.59
1996	8.27	6.18	6.34	7.37
1997	8.44	6.22	6.33	7.27
1998	8.35	5.15	5.28	6.53
1999	8.00	5.55	5.79	7.05
2000	9.23	6.16	6.20	7.62
2001	6.91	4.56	4.88	7.08
2002	4.67	3.82	4.30	6.49
2003	4.12	2.97	3.52	5.66
15 Year Avg	7.70	5.95	6.20	7.56
Basis spread	0.00	1.75 (1)	1.75 (1)	0.00
Total	7.70	7.70	7.95	7.56

(1) In Docket No. ES02-53-000, Midwest Independent Transmission System Operator, Inc., application to issue securities the pricing of the interest rate was based on the market rate of comparable term U.S. Treasury on the date of pricing, plus a spread that of 150 to 200 basis points. Consequently, for the above calculation we picked the mid-range of 175 basis points.

Source: Federal Reserve Board

**Debt Interest Rates
10 Year Average**

	Prime Rate	Five Year Treasury Notes	Seven Year Treasury Notes	Moody's Long-term Aaa Bond Rate
1994	7.15	6.69	6.91	7.97
1995	8.83	6.38	6.50	7.59
1996	8.27	6.18	6.34	7.37
1997	8.44	6.22	6.33	7.27
1998	8.35	5.15	5.28	6.53
1999	8.00	5.55	5.79	7.05
2000	9.23	6.16	6.20	7.62
2001	6.91	4.56	4.88	7.08
2002	4.67	3.82	4.30	6.49
2003	4.12	2.97	3.52	5.66
10 Year Avg	7.40	5.37	5.61	7.06
Basis spread	0.00	1.75 (1)	1.75 (1)	0.00
Total	7.40	7.12	7.36	7.06

(1) In Docket No. ES02-53-000, Midwest Independent Transmission System Operator, Inc., application to issue securities the pricing of the interest rate was based on the market rate of comparable term U.S. Treasury on the date of pricing, plus a spread that of 150 to 200 basis points. Consequently, for the above calculation we picked the mid-range of 175 basis points.

Source: Federal Reserve Board

**Debt Interest Rates
5 Year Average**

	Prime Rate	Five Year Treasury Notes	Seven Year Treasury Notes	Moody's Long-term Aaa Bond Rate
1999	8.00	5.55	5.79	7.05
2000	9.23	6.16	6.20	7.62
2001	6.91	4.56	4.88	7.08
2002	4.67	3.82	4.30	6.49
2003	4.12	2.97	3.52	5.66
5 Year Avg	6.59	4.61	4.94	6.78
Basis spread	0.00	1.75 (1)	1.75 (1)	0.00
Total	6.59	6.36	6.69	6.78

(1) In Docket No. ES02-53-000, Midwest Independent Transmission System Operator, Inc., application to issue securities the pricing of the interest rate was based on the market rate of comparable term U.S. Treasury on the date of pricing, plus a spread that of 150 to 200 basis points. Consequently, for the above calculation we picked the mid-range of 175 basis points.

Source: Federal Reserve Board

**RTO Debt Outstanding
As of December 31, 2003**

PJM

	Outstanding 12/31/2003	Ratio	Rate	Weighted Average Rate
Short-term Debt	0	0.000	0	0
Long-Term Debt:				
Senior Notes	\$66,521,000	0.466	7.163	3.34
Project Development Facility - Variable Rate	76,129,000	0.534	3.200 (1)	1.71
	<u>\$142,650,000</u>	<u>1.000</u>		<u>5.05</u>

Midwest Independent Transmission System Operator, Inc.

	Outstanding 12/31/2003	Ratio	Rate	Weighted Average Rate
Short-term Debt	<u>\$5,000,000</u>	0.024	<u>1.670</u>	0.04
Long-Term Debt:				
8.75 % Series Senior Notes	\$99,667,000	0.485	8.750	4.24
4.69 % Series Senior Notes	100,000,000	0.486	4.690	2.28
National Cooperative Services Corp. Variable Rate	887,498	0.004	3.000 (1)	0.01
	<u>\$200,554,498</u>			6.52
Total Debt	<u>\$205,554,498</u>	<u>1.000</u>		<u>6.56</u>

(1) Variable rate debt - used rate on December 31, 2003 in the above calculations.

Exhibit 6

4 Other Quantified RTO Impacts - Benchmarking

This section describes the quantitative benchmarking analyses. TCA gathered information from industry sources in several areas:

- Startup and operating costs for RTOs,³⁸
- Startup and operating costs of exchanges,
- Costs of performing a schedule coordinator role, and
- Monetary valuation of impacts of unplanned outages (loss of load).

Each of these areas is addressed below.

4.1 Startup and Operating Costs for RTOs

The October 2000 "RTO West Potential Benefits and Costs" report estimated the RTO West expected startup costs at \$82 million and the annual operating costs at \$50 million. This estimate was based on the October 2000 study group's best estimate of the levels of staffing and startup costs anticipated.

TCA collected data related to costs to develop and maintain ISOs/RTOs in North America.³⁹ This effort was intended to provide insights into the *actual* operating costs of similar organizations in the United States and Canada. The cost data were collected from a variety of sources, primarily publications from the respective organizations.

Table 23 summarizes the data collected for each of the ISOs and RTOs in North America.⁴⁰ The table shows startup and annual operating costs where available. In all

³⁸ "RTO" is used in this Section and in Section 5 to represent the broad set of RTO organizations, including ISOs.

³⁹ Within this section the terms ISO and RTO are used interchangeably to represent, except where noted, functionality on the scale expected within the RTO West.

⁴⁰ Notes/Sources:

- A. All values in \$US.
- B. Direct comparisons across regions must be undertaken with care. Some shared regional functions and cost responsibilities are handled outside of ISO cost structure.
- C. Some start-up costs not reflected or associated with previous tight pool structure and cost recovery.
- D. Cost values actual or projected for 2000 or 2001, except where noted.
- E. New England annual depreciation and interest costs are accounted for outside of the NE-ISO tariff structure.
- F. Ontario, PJM, New England, and NY values from Ontario Independent Market Operator (IMO) Business Plan 2001-2003, November 2000.
- G. NY ISO transition costs were obtained from the NY ISO Annual Report, 2000.
- H. ERCOT values taken from Public Utility Commission of Texas Docket 23320 filings.
- I. Alberta values from Transmission Administrator (TA) and Power Pool of Alberta (PP) Annual Review / Report documents for 2000, and Cox Report (see note L), and as provided by EAL professionals.

cases, however, all-in per-megawatt-hour carrying costs (startup and operating costs) have been provided or derived for each ISO/RTO and are shown.

-
- J. Ontario start-up costs based on 1999 - 2001 capital expenditures from the IMO Business Plan 2001-2003, page 32 (\$CA 254 Million).
 - K. ERCOT start-up costs based on 2000 - 2001 capital expenditures as reported in the "Year 2001 ERCOT Fund Summary" in Docket 23320 filing.
 - L. California numbers are from 2001 and are from "Participant Charges at Electricity Exchanges, Pools and ISOs: Towards a Benchmarking Study," prepared for the Power Pool of Alberta by Paul Cox, December 29, 2000, and revised May 9, 2001.
 - M. PJM is represented in several configurations in the table, and all configurations are included in the weighted averages. Since the costs of these configurations span the range of other ISO costs, this factor is not expected to materially bias the average.

Table 23: Startup and Operating Costs of ISOs/RTOs

	Annual O&M Costs (\$ million)	Annual Amortized Depreciation and Interest Costs (\$ million)	Total Annual Revenue Requirement with Debt & Interest (\$ million)	Annual Energy (TWh)	Unit O&M Costs (\$/MWh)	Unit Revenue Requirement (\$/MWh)	Peak Demand 2000 (MW)	Transmission Miles	# FTE employees	Staffing FTE/TWh	Start-up Costs (\$ million)
PJM (2000)	70.2	31.6	101.8	256	0.27	0.40	49,417	8,000	384	1.50	140
PJM without PJM West (2002)			128.9	256		0.50		8,000			
PJM with PJM West (2002)			137.3	314		0.44		13,100			
New York	53.7	6.9	60.6	149	0.36	0.41	30,311	10,800	222	1.49	82
New England	55.7		55.7	122	0.46	0.46	23,300	7,000	323	2.65	55
Calif ISO			228.0	270		0.84	45,990	25,526	544	2.01	
ERCOT	44.6	77.4	122.1	281	0.16	0.44	57,606	37,000	250	0.89	137
Alberta TA and SC	6.3		21.4	54		0.40	7,785	10,540	76	1.41	
Ontario	57.6	28.4	86.0	150	0.39	0.58	23,428	18,000	417	2.79	172
Weighted Average \$/MWh RTO Carrying Cost						0.51					
Weighted Average \$/MWh RTO Carrying Cost, Without CA ISO						0.45					

Several items should be noted when applying these numbers to the relative net merits of RTO West.

- Numbers should be viewed as “ball park,” given, for example, the averaging of dollar values from different years.
- Application of these values to an RTO West valuation requires judgment about the comparable level of effort required for RTO West.
- Various attributes are not distinguished in the preceding table:
 - ISO costs may include upgrades that would have occurred with or without the RTO:
 - Regional upgrades
 - SCADA upgrades
 - Y2k upgrades
 - RTO West costs are direct costs, not adjusted for parallel savings by the TOs or CAOs.
 - RTO West costs do not include the costs of stakeholder participation in the development process.

However, the table shows that the carrying costs of an RTO generally group fairly tightly. With the exception of California, which is broadly believed to have encountered unusually high startup costs, the other RTOs are relatively tightly grouped in a range of \$0.40/MWh to \$0.58/MWh.⁴¹ The weighted average cost of the existing RTOs in North America is approximately \$0.45 to \$0.51, with the lower value representing the case in which California and Alberta are excluded from the mix.

Given the annual energy throughput expected for RTO West⁴² in 2004, per-unit costs such as these quoted above equate to approximately \$127 million to \$143 million per year, depending on whether California’s costs are included in the mix or not.

As RTOs mature and more such organizations become operational, parties can hope that experience will drive startup and operating costs down. The data from ERCOT and Ontario do not necessary demonstrate that RTOs have yet benefited from this learning curve. Conversely, however, the startup of Ontario and ERCOT do suggest that costs are being contained rather than significantly increasing, as the California ISO’s experience, taken alone, would have suggested. These data are therefore seen as solid benchmark for average ISO/RTO costs. To the extent that RTO West could “beat the averages” and start up and/or operate for less cost, the overall RTO West net benefits would increase.

⁴¹ Even the \$.58/MWh RTO, Ontario, is somewhat of an “outlier”, with the next most costly RTO at \$.46, and represents a relatively small service area.

⁴² From the Energy Impact Analysis TCA estimated approximately 280 TWh annual energy.

General Comment: With the exception of the SEARUC study, which looks at several benchmarks that could be drivers of actual costs, the studies summarized below do not break start-up RTO costs into their component costs. However, the four studies do provide useful upper and lower bounds of costs projected and experienced by other RTOs and therefore an indication of the range within which WestConnect's costs are likely to be discussed.

Northeast RTO Costs and Benefits Assessment, ISO New England and New York ISO, May 14, 2002.

Summary of Implementation Costs by Action Table ES-5, p.9

NERTO Actions	Cost (Millions \$)	Explanation
Costs of RTO formation and Organizational Integration	35 - 60	
Standardize Markets/Eliminate Seams	NA	Costs already committed independently of NERTO (SMD 1.0 in NE and SMD 2.0 in NYISO)
Eliminate Export Fees (Own: Not a startup cost)	NA	Estimated Transmission owner revenue losses of \$36 million in NY and \$14 million must be recovered elsewhere
Single Dispatch	85-100	Cost of single dispatch solution

The Benefits and Costs of Regional Transmission Organizations and Standard Market Design in the Southeast, Prepared for the Southeastern Association of Regulatory Utility Commissioners, Prepared by Charles River Associates (and GE Power Systems Energy Consulting), November 6, 2002.

Section II. B. Pgs. 22- 24.

Costs are based on estimates supplied by the RTOs.

- “Day 1” RTO start-up costs are implementation costs short of SMD implementation.
- “Day 2” Costs are those of implementing SMD

The cost breakdown for GridSouth and GridFlorida were based on more detailed costs provided by GridFlorida. The study assumes similar costs for GridSouth (which did not provide detailed costs) as for GridFlorida. Takes mid-point of range of potential costs provided by SeTrans (range for Day 1 costs of \$145 -170 million and Day 2 costs of \$55-60 million.

The studies assume no offsetting savings in transmission costs at the utilities as certain utilities estimated small savings from elimination of functions and others small incremental costs associated with additional interaction with the RTO.

The analysis also considered whether there would be different costs should one Combined RTO be established for the entire region. “Conservatively” it was assumed that start-up costs would be the same as if three separate RTOs were created, though O&M expenses would be lower for the combined RTO.

Table 1
RTO Start-up and Operating Costs (in \$mm of dollars, except as otherwise noted)

	GridSouth	GridFlorida	SeTrans	Total of 3 RTOs	1 Combined RTO
Without SMD					
1 Time Start-Up Costs	186	186	158	530	530
Annual O&M	46	46	58	150	95
2005 Revenue Required	89	89	95	274	217
\$/MWh of Load	0.43	0.45	0.22	0.32	0.26
With SMD					
1 Time Start-Up Costs	244	244	215	703	703
Annual O&M	60	60	75	195	123
2005 Revenue Required	118	118	127	362	289
\$/MWh of Load	0.55	0.58	0.28	0.42	0.33

RTO West Benefit/Cost Study: Final Report Presented to RTO West Filing Utilities, by Tabors Caramis & Associates.
March 11, 2002,

Section 4.1. p. 36.

The October 2000 “RTO West Potential Benefits and Costs” report estimated the RTO West **expected startup costs at \$82 million and the annual operating costs at \$50 million**. They also collected data on actual expenses of other RTOs in the US and Canada and that data is the table below: ¹

¹ All Values in \$,

Direct comparisons across regions must be undertaken with care. Some shared regional functions and cost responsibilities are handled outside of ISO cost structure.

Some of startup costs are not reflected or associated with previous tight pool structure and cost recovery

Cost values actual or projected for 2000 and 2001, except where noted

New England annual depreciation and interest costs are accounted for outside of the NE-ISO tariff structure

Ontario, PJM, New England and NY values from Ontario IMO Business Plan 2001-2003, No. 2000

NY ISO transition costs were obtained from the NY ISO Annual Report, 2000

ERCOT values taken from PUC of Texas Docket 23320 filings

Alberta values from Transmission Administrator and Power Pool of Alberta Annual Review/Report documents for 2000, and Cox Report and as provided by EAL professionals

Ontario startup costs based on 1999 – 2001 capital expenditures from the IMO Business Plan 2001 – 2003

ERCOT start-up costs based on 2000 - 2001 capital expenditures from “Year 2001 ERCOT Fund Summary” in Docket 23320 filings

California data from 2001 and from “Participant Charges at Electricity Exchanges. Pools and ISO” Prepared for the Power Pool of Alberta by Paul Cox (12/29/00) and revised (5/9/01)/

PJM represented in several configurations in table each of which used in weighted averages.

	Annual O&M Costs (\$ mm)	Annual Amortized Depreciation & Interest Costs (\$ mms)	Total Annual Revenue Requirement with Debt & Interest (\$ mm)	Annual Energy (TWh)	Unit O&M Costs (\$/MWh)	Unit Revenue Requirements (\$/MWh)	Peak Demand 2000	Trans. Miles	# FTE Employees	Staffing FTE/TWh	Start up Costs (\$ mm)
PJM (2000)	70.2	31.6	101.8	256	0.27	0.40	49,417	8,000	384	1.50	140
PJM without PJM West (2002)			128.9	256		0.50		8,000			
PJM with PJM West (2002)			137.3	314		0.44		13,100			
New York	53.7	6.9	60.6	149	0.36	0.41	30,311	10,800	222	1.49	82
New England	55.7		55.7	122	0.46	0.46	23,300	7,000	323	2.65	55
Calif ISO			228.0	270		.084	45,990	25,526	544	2.01	
ERCOT	44.6	77.4	122.1	281	0.16	0.44	57,606	37,000	250	0.89	137
Alberta TA and SC	6.3		21.4	54		0.40	7,785	10,540	76	1.41	
Ontario	57.6	28.4	86.0	150	0.39	0.58	23,728	18,000	417	2.79	1.72

Weighted average \$/MWh RTO Carrying Cost 0.51

Weighted average \$/MWh RTO Carrying Cost without CA ISA 0.45

- The RTO West study notes that judgment needed to apply resulting benchmarks to RTO West because:
 - Different base year data was used for each region
 - Certain attributes of different regions not noted, including that ISO costs may include upgrades that would have occurred with or without RTO formation, such as regional upgrades, SCADA upgrades and Y2k upgrades.
- The study assumes no parallel savings at any of the TOs or CAOs in the RTO.
- Costs do not include associated stakeholder participation costs.
- The study notes that CA is high in startup costs and that without CA that costs are relatively tightly grouped in a range.

While the study also looks at operations of secondary exchanges and schedule coordinate functions but this summary does not address these costs as it assumes they are not considered Day 1 functions.

Report to Congress: Impacts of the FERC’s Proposal for Standard Market Design (and Appendices). DOE. April 30, 2003.

Costs to implement SMD, including establishment and operation of RTOs (p.17) are exhibited on a consolidated basis in the DOE report and shown on an annual basis as an annual revenue requirement.

- While data is presented for each region of the country it is not broken out between start-up and ongoing costs and the estimates are drawn from other studies.

Summary table for RTO/SMD costs for 2005 in 2002 dollars

Table 3.2

Region	RTO Annual Revenue Requirement (\$MM)	Annual Generation (TWhs)	RTO/SMD Costs (\$ per MWh)
ISO New England	63	130	0.48
NY ISO	135	163	0.83
PJM	287	702	0.41
MISO	155	784	0.20
SPP	33	80	0.41
RTO West	116	284	0.41
WestConnect RTO	34	82	0.41
California RTO	234	278	0.84
Rocky Mountain	22	54	0.41
SeTrans	117	463	0.25
GridSouth	109	219	0.50
GridFlorida	109	208	0.52
TVA	45	177	0.25
Total	1,457	3,623	0.40
Other Benchmarks:			
Ontario IMO	85.3	154	0.55
ERCOT	121.9	292	0.42

Notes to table provided in study, page 18.