Southwest Power Pool (SPP)
Section 7 – SPP Performance Metrics and Other Information

Southwest Power Pool, Inc. (SPP) is a regional transmission organization (RTO) that coordinates the movement of electricity in a nine state region – Arkansas, Kansas, Louisiana, Mississippi, Missouri, Nebraska, New Mexico, Oklahoma and Texas.

Services provided by SPP include:

- **Compliance** - The SPP Regional Entity enforces compliance with federal and regional reliability standards for users, owners, and operators of the region's bulk power grid.

- **Market Operations** - In the Energy Imbalance Service (EIS) market (implemented February 1, 2007), participants buy and sell wholesale electricity in real-time. If a utility requires more energy than it scheduled, the market provides the utility another option to buy the "extra" energy at real-time prices to make up the difference and meet its demand. Participants can use the EIS market to get the least expensive available energy from other utilities. SPP's 2009 wholesale market transactions totaled $1.14 billion. SPP is currently planning for future energy markets.

- **Regional Scheduling** - SPP ensures that the amount of power sent is coordinated and matched with power received.

- **Reliability Coordination** - SPP monitors power flow throughout our footprint and coordinates regional response in emergency situations or blackouts.

- **Tariff Administration** - SPP provides "one stop shopping" for use of the region's transmission lines and independently administers an Open Access Transmission Tariff with consistent rates and terms. SPP's 2009 transmission market transactions totaled $486 million.

- **Training** - SPP offers continuing education for operations personnel at SPP and throughout the region. In 2009, the SPP training program awarded ~17,000 continuing education hours to 444 operators from 30 member organizations.

- **Transmission Expansion Planning** - SPP's planning processes seek to identify system limitations, develop transmission upgrade plans, and track project progress to ensure timely completion of system reinforcements.

- **Contract Services** - SPP provides reliability, tariff administration, and scheduling for non-members on a contract basis.

Southwest Power Pool dates to 1941, when 11 regional power companies joined to keep an Arkansas aluminum factory powered around the clock to meet critical defense needs. After the war, SPP's Executive Committee decided the organization should be retained to maintain electric reliability and coordination.

A. SPP Bulk Power System Reliability

As of December 31, 2009, SPP has not had any investigations or self-reports or audit findings result in violations of NERC or ERO standards that are public. However, SPP may have potential violations under review arising from circumstances prior to January 1, 2010.

The table below identifies which NERC Functional Model registrations SPP has submitted as effective as of the end of 2009. Additional the Regional Entity for SPP is noted at the end of the table with a link to the website for the specific reliability standards.

<table>
<thead>
<tr>
<th>NERC Functional Model Registration</th>
<th>SPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balancing Authority</td>
<td>☑</td>
</tr>
<tr>
<td>Interchange Authority</td>
<td>☑</td>
</tr>
<tr>
<td>Planning Authority</td>
<td>☑</td>
</tr>
<tr>
<td>Reliability Coordinator</td>
<td>☑</td>
</tr>
<tr>
<td>Resource Planner</td>
<td>☑</td>
</tr>
<tr>
<td>Transmission Operator</td>
<td>☑</td>
</tr>
<tr>
<td>Transmission Planner</td>
<td>☑</td>
</tr>
<tr>
<td>Transmission Service Provider</td>
<td>☑</td>
</tr>
</tbody>
</table>

Regional Entity: SPP

Standards that have been approved by the NERC Board of Trustees are available at: [http://www.nerc.com/page.php?cid=2|20](http://www.nerc.com/page.php?cid=2|20)

Additional standards approved by the SPP Board are available at: [http://www.spp.org/section.asp?pageID=98](http://www.spp.org/section.asp?pageID=98)
Dispatch Operations

SPP CPS-1 Compliance 2005-2009

Compliance with CPS-1 requires at least 100% throughout a 12-month period. SPP was in compliance with CPS-1 for each of the calendar years from 2005 through 2009.

SPP CPS-2 Compliance 2005-2009

Compliance with CPS-2 requires 90% for each month in a 12 month period. SPP was in compliance with CPS-2 for each of the calendar years from 2005 to 2009.
SPP data reflects number of Transmission Load Relief (TLR) events. SPP’s TLR events were comprised of primarily level 3 and 4 TLRs with 2%, 5%, 4%, 6% and 5% of level 5 TLRs in 2005 through 2009, respectively. The increase in SPP TLRs reflects an aspect of the Energy Imbalance Services (EIS) Market design. One of the objectives of the EIS Market is to utilize the existing transmission system by providing the most economical energy through the Tariff’s Schedule 4 Energy Imbalance Service. The Market System Scheduling & Pricing Dispatch engine increases flow on flowgate interfaces by dispatching more efficient resources up and reducing others down. The SPP Tariff and Market protocols currently require SPP issue a TLR in parallel with congestion management in the Market System. Loading flowgate interfaces provides more economical energy, however when the loading approaches the constraint operating limitation, a TLR must be issued, regardless if schedules/tags/external are in IDC impact the constraint being controlled. The increase in TLRs is a direct correlation to having issued TLR in order to begin the process of having the Market System redispach around a constraint.

Availability of the Energy Management System (EMS) is key to reliable monitoring of the electric transmission system in SPP. Since the implementation of the Energy Imbalance Service market in February 2007, the SPP EMS has been unavailable less than 0.5% of all hours in each year.
**Load Forecast Accuracy**

ISO/RTO | Load Forecasting Accuracy Reference Point
---|---
SPP | 6:00 a.m. prior day

**SPP Average Load Forecasting Accuracy 2005-2009 (1)**

(1) SPP began operation of an Energy Imbalance Service market on February 1, 2007.

**SPP Peak Load Forecasting Accuracy 2005-2009 (1)**

(1) SPP began operation of an Energy Imbalance Service market on February 1, 2007.
As stated in the introduction, since SPP does not currently have a day-ahead market, the prior day’s medium term load forecast (MTLF) is used as the load forecast accuracy reference point. Since SPP does not have a consolidated Balancing Authority, a forecast is calculated for each of the SPP BAs (15 at the end of 2009). Overall, the average load forecasting accuracy for SPP has been right around 97% for each of the past three years that data is available. Peak and valley forecasts see slightly higher error, which can be attributed to the number of forecasts that are required due to having multiple BAs.
Wind Forecasting Accuracy

SPP does not forecast wind. That function is completed by each Balancing Authority in the SPP Region.

During 2010 SPP is developing a system for RTO-wide wind forecasts.

Unscheduled Flows

Since SPP does not have a consolidated Balancing Authority and is currently (end of 2009) made up of 15 distinct Balancing Authorities, volume of unscheduled flows for SPP system-wide is unavailable. For informational purposes, the number of external interfaces and the main interfaces are listed above.
Transmission Outage Coordination

The SPP OATT does not outline specific timeframes and guidelines for Transmission Outages and Coordination. The OATT states that “the Transmission Provider will provide the projected status of transmission outage schedules above 230 kV over the next twelve (12) months or more if available. This data shall be updated no less than once daily for the full posting horizon and more often as required by system conditions. The data will include current, accurate and complete transmission facility maintenance schedules, including the “outage date” and “return date” of a transmission facility from a scheduled or forced outage. If the status of a particular transmission facility operating at voltages less than 230 kV is critical to the determination of TTC and ATC/AFC of the neighboring transmission provider, the status of this facility will also be provided,” and “consistent with the SPP Membership Agreement, Transmission Owners are required to coordinate with the Transmission Provider for all planned maintenance of Tariff Facilities. The Transmission Provider shall notify a Transmission Owner of the need to change previously reviewed planned maintenance outages.”

SPP Percentage of > 200kV planned outages of 5 days or more that are submitted to ISO/RTO at least 1 month prior to the outage commencement date 2005-2009

SPP Percentage of planned outages studied in the respective ISO/RTO Tariff/Manual established timeframes 2005-2009

SPP does not have established timeframes in which planned outages must be studied.

Percentage of > 200 kV outages cancelled by ISO/RTO after having been previously approved 2005-2009

Data for this metric is not available for SPP.
In the 2009 Annual State of the Market Report, the SPP Market Monitoring Unit indicated that “SPP should move to standardize categories accounting for transmission outages which would allow for the easy reporting of extent, causes, and location of such outages. At a minimum, this type of reporting alleviates concerns of market power abuses and can enhance SPP’s transmission planning and real-time operations.” This recommendation has been adopted and its implementation is part of the 2010 Southwest Power Pool Strategic Plan, which was adopted by the SPP Board of Directors on July 27, 2010.
**Transmission Planning**

SPP Number of Transmission Projects Approved to be Constructed for Reliability Purposes 2005-2009

SPP Percentage of Approved Construction Projects Completed by December 31, 2009

SPP’s transmission planning process was a bottom-up, top-down approach, enabling SPP to provide efficient, reliable, and competitive generation market Transmission Services on a non-discriminatory basis. The SPP planning processes took into account its stakeholder’s requirements, while coordinating with applicable federal, state and local regulatory authorities and also considering potential public policy. The SPP Transmission Expansion Plan (STEP) promotes the efficient expansion of the transmission system under SPP’s control and enables competitive generation markets. The STEP identifies potential expansion projects needed to meet reliability standards and to interconnect
new generation, with consideration for load growth, competitive generation market, stakeholder input, and transmission service commitments. In addition, the STEP considers plans for addressing transmission congestion and the benefits associated with development of new generation as alternatives to transmission expansion.

**Reliability Planning**

As part of the bottom-up approach, one component of the STEP is the reliability assessment. This process requires that Transmission Owners continue to develop expansion plans to meet the local needs of their systems and to help the RTO develop the expansion plan for reliability needs. Transmission Owners develop their system specific local plans, which SPP consolidates into the integrated STEP. At the same time, SPP assesses its system for the ability to meet applicable reliability standards. This process allows for projects with regional and inter-regional impact to be analyzed for their combined effects. It allows the exploration of modifications and alternatives to proposed plans, which may provide more cost effective solutions for regional and as well as local needs.

**Economic Planning**

As part of SPP’s top-down approach transmission improvements are considered that provide economic benefit. One specific process is called the Balanced Portfolio. The Balanced Portfolio is one SPP strategic initiative to develop a cohesive grouping of economic upgrades that benefit the SPP region and allocates the cost of those upgrades regionally. Projects in the Balanced Portfolio include transmission upgrades of 345 kV projects that will provide customers with potential savings that exceed project costs. These economic upgrades are intended to reduce congestion on the SPP transmission system, resulting in savings in generation production costs. With a goal to identify upgrades for inclusion in a portfolio that will provide a balanced benefit to customers over a specified ten-year payback period. "Balanced" is defined by the SPP Regional Tariff, such that for each Zone, the sum of the benefits of the potential Balanced Portfolio must equal or exceed the sum of the costs. Economic upgrades may provide other benefits to the power grid; i.e. increasing reliability and lowering reserve margins, deferring reliability upgrades, and providing environmental benefits due to more efficient operation of assets and greater utilization of renewable resources.

Another example of an economic study is the Priority Projects study. This was a one-time analysis conducted in 2009 as a result of the SPP Synergistic Planning Process Team recommendations and is considered a high priority studies. Study assumptions include fuel and emissions costs, load and generation forecasts, types and locations of new generation, generation retirements, market structures, and wind profiles. Analysis also encompasses a plausible collection of assumptions for each specific model run, including varying levels of Renewable Electricity Standards, demand response, energy efficiency, fuel prices, and governmental regulations. Metrics were developed for qualifying and quantifying the projects for the studies, including Adjusted Production Cost, impact on losses, reliability and environmental impacts, capacity margins, and operating reserves.

**Stakeholders**

There are opportunities for stakeholder involvement throughout the SPP planning processes. All planning processes are open and transparent assessments of study assumptions, upgrade recommendations and applicable cost allocation impacts. Its implementation is only successful through the commitment of SPP members, regulators, and
other stakeholders. Input from the regulators assists SPP in the development of realistic transmission expansion projects and alternatives to meet rate payer needs, as well as those of neighboring regions.

Approval
After each analysis, the SPP Board of Directors can approve proposed upgrades to begin construction. For the approved upgrades, SPP issues Notification To Construct letters to incumbent Transmission Owners notifying them to build the upgrades. SPP then tracks the progress of the upgrades through a quarterly project tracking process monitoring project schedules and costs and also tracking necessary mitigation plans if project construction schedules are unable to meet system in-service needs.

As part of the 2009 transmission planning efforts, SPP completed the following studies: reliability – AC contingency, dynamic stability, and voltage stability studies; economic – Balanced Portfolio and Priority Projects studies. The results of these studies can be found in the 2009 STEP report, available at: http://www.spp.org/publications/2009-STEP-Report.pdf.
In 2009, SPP placed a higher emphasis on the timely processing of Generation Interconnection studies, as evidenced by a reduction of more than one-third the number of days required from 2008 to 2009.

Bars Represent Planned Reserve Margins | Lines Represent Actual Reserves Procured
Interconnection / Transmission Service Requests

SPP Number of Study Requests 2005-2009

SPP Number of Studies Completed 2005-2009
The generation interconnection process includes three potential types of studies – feasibility studies, system impact studies and facility studies. Feasibility studies assess the practicality and cost transmission system additions or upgrades required to accommodate the interconnection of the generating unit or increased generating capacity with the transmission system. System impact studies provide refined and comprehensive estimates of cost responsibility and construction lead times for new transmission facilities and system upgrades that would be required to allow the new or increased generating capacity to be connected to the transmission system in SPP. Facility studies develop
the transmission facilities designs for any required transmission system additions or upgrades due to the interconnection of the generating unit and/or increased generating capacity.

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feasibility Studies</td>
<td>$9,264</td>
<td>$2,491</td>
<td>$6,495</td>
<td>$3,270</td>
<td>$2,888</td>
</tr>
<tr>
<td>System Impact Studies</td>
<td>$11,006</td>
<td>$16,280</td>
<td>$17,694</td>
<td>$14,942</td>
<td>$14,050</td>
</tr>
<tr>
<td>Facility Studies</td>
<td>$10,283</td>
<td>$7,290</td>
<td>$12,495</td>
<td>$16,960</td>
<td>(Note 1)</td>
</tr>
</tbody>
</table>
Note 1 – No facility studies were posted in 2009.

From the SPP 2009 Annual State of the Market Report:

The high demand for generation interconnection over the past several years placed an enormous amount of stress on the generation interconnection process causing longer process times for requests and, as a result, a backlog in the queue. Other RTOs and ISOs also faced similar problems, so much so that the FERC held a technical conference on interconnection queuing practices on December 11, 2007 in response to concerns about the effectiveness of queue management. Then, following the technical conference, on March 20, 2008, the FERC issued an order directing the RTOs and ISOs to work with their stakeholders to improve their interconnection processes. SPP formed the Generation Queuing Task Force (GQTF) to help reform their process. SPP then filed its proposed reform measures, and the FERC issued an Order conditionally accepting SPP’s proposal, thus allowing them to implement the changes (effective June 2, 2009).

SPP’s new generation interconnection process was designed to improve processing times and give precedence to more serious projects that are further along in the development process. To attain these goals, SPP now has three interconnection queues rather than just one. That is, interconnection customers now choose to begin in one of three queues: (a) the Feasibility Study Queue, (b) the Preliminary Interconnection System Impact Study (PISIS) Queue, and (c) the Definitive Interconnection System Impact Study (DISIS) Queue. The Feasibility Queue and the PISIS Queue are not required for projects seeking interconnection in SPP. Instead, they provide an avenue for projects to acquire information that will aid them in deciding whether to move forward with their projects. These two queues require lower deposits and less strict milestones. The DISIS Queue, on the other hand, is required by SPP, and requires that the customers meet stricter milestones regarding project size, project location, project site, and in some cases, a buyer for the power that would be generated. The fact that the DISIS Queue requires strict milestones to be met discourages projects that are more speculative in nature from clogging the queue and allows those further along to have priority. Once a customer passes through the DISIS Queue, the next step is to complete a Facility Study. This study consists of SPP or the Transmission Owner specifying and estimating the cost of equipment, engineering, and construction to implement the interconnection. Upon completion of the Facility Study, an applicant may proceed to execute a Generation Interconnection Agreement.

We believe the reform measures implemented by SPP are constructive because they address the recommendation from last year regarding the generation interconnection process. Specifically, in the 2008 State of the Market Report, Boston Pacific stated, “We recommend that instead of using a “first come, first served” method, SPP should allow advanced projects – projects that (a) have already secured a buyer for output or (b) have met certain milestones – to move past projects that are not as far along.”25...at the end of 2009, 313 projects were currently active in the process or had executed an interconnection agreement, representing 60,768 MW of capacity. This is a significant amount of capacity. To put this number in perspective, the peak demand in SPP in 2009 was only 46,482 MW. Of all the projects in the queue, 16,744 MW of capacity have fully executed an interconnection agreement. Historically, as would be expected, not
all of the capacity that enters the interconnection process ends up being built. Going forward, we would expect that the capacity that is most likely to be withdrawn is that in the Feasibility Study Queue and the PISIS Queue as these queues are not required for interconnection and the requirements are less stringent than that of the DISIS Queue… 33,301 MW are in the Feasibility Study and PISIS Queues.

**Special Protection Schemes**

The SPSs in the SPP Region represent four long-term schemes and one temporary scheme. A Special Protection Systems (SPS) or Remedial Action Scheme (RAS) is designed to detect abnormal system conditions and take automatic pre-planned, coordinated, corrective action (other than the isolation of faulted elements) to provide acceptable system performance. SPS actions include among others, changes in demand (e.g., load shedding), generation, or system configuration to maintain system stability, acceptable voltages, or acceptable facility loadings. All reviews of facilities shall be for those used to monitor and control transmission facilities operated at 100kV or above.

There were no misoperations of SPSs in 2009 in SPP.
B. SPP Coordinated Wholesale Power Markets

The table below shows the split of the nearly $1.7 billion that was invoiced by SPP in 2009.

<table>
<thead>
<tr>
<th>(dollars in millions)</th>
<th>2009 Dollars Billed</th>
<th>Percentage of 2009 Dollars Billed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Imbalance Market</td>
<td>$1,144</td>
<td>67.5%</td>
</tr>
<tr>
<td>Transmission</td>
<td>$486</td>
<td>28.7%</td>
</tr>
<tr>
<td>SPP Admin Fee</td>
<td>$64</td>
<td>3.8%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$1,694</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>
**Market Competitiveness**


Net revenues in 2009 were not adequate to cover the fixed costs of either a combined cycle or a combustion turbine power plant in SPP. Net Revenue has dropped by about half from 2008 in large part because of the lower electricity prices making the margins tighter when the plants were run. So, while a combined cycle would still have run around 55% it no longer covered 60% of the fixed cost as it did in 2008, but rather less than 30%.
From the SPP 2009 State of the Market Report:

In addition to testing revenue adequacy using SPP-wide hourly prices, we also wanted test whether prices in certain areas of SPP might be high enough to justify investment. To test this possibility, a Net Revenue calculation for two of the balancing authorities with the highest prices was calculated as those balancing authorities are most likely to show the need for new plants.

… we conclude that the net revenue, even in these areas, was not adequate to cover the fixed costs of either a combined cycle or a combustion turbine power plant.

SPP Real-Time Energy Market Percentage of Unit Hours Offer Capped due to Mitigation 2005-2009

From the SPP 2009 State of the Market Report:

Locational Imbalance Prices in SPP are calculated using, among other things, Market Participant offer curves. Because these offers are a major driver of prices, there is a potential concern with market power through submission of higher than appropriate offer prices. The FERC refers to this as Economic Withholding. To mitigate this, SPP has in place two different FERC-approved offer caps. These caps do not put a cap on prices, but rather, limit how high of an offer a Market Participant can submit.

The offer cap that we term the “FERC Cap” is a hard offer cap. What we mean by this is it (a) is set at a constant level, (b) applies to all resources, and (c) applies at all times. The FERC Cap is considered to be a “safety net” against extreme cases of economic withholding. For the first three months of the EIS Market, the FERC Cap was set at $400/MWh. Since May 2007, the FERC Cap has been increased to $1,000/MWh. The cap was set at a tighter level for the first three months of market operation because of the uncertainty surrounding the start of the market.
SPP”s other offer cap is termed the “SPP Cap.” Unlike the FERC Cap, the level of this cap (a) is resource specific and (b) varies depending upon market conditions. The SPP Cap is designed to balance mitigation and reliability; that is, it limits price spikes resulting from market power, but, at the same time, is set at a level high enough not to discourage new investment.

The following three characteristics of the SPP Cap illustrate how this is accomplished. First, the SPP Cap is levied only during times of transmission congestion, because absent congestion the SPP Market is structurally competitive. Second, it is only imposed on those resources that have the potential to wield market power; that is, it applies only to resources with a Generator to Load Distribution Factor (GLDF) of negative 5% or larger (more negative) and on other resources with negative GLDFs owned by that same company. Third, the SPP Cap is set at a level that will not discourage new investment. The SPP Cap reflects the total annual fixed and variable costs of a new peaking power plant with the fixed costs spread over the hours of congestion. Therefore, the more hours of congestion the tighter the cap becomes.

In addition, Market Competitiveness as measured by the Herfindahl-Hirschmann Index (HHI) is discussed in the 2009 Annual State of the Market Report:

The Herfindahl-Hirschman Index (HHI) is a measure of competitiveness closely related to market shares. Some background on the HHI standard is useful. The U.S. Department of Justice has a three-part standard for HHIs when judging the competitive effect of mergers and acquisitions. An HHI at or under 1,000 is a „safe harbor“ of sorts because the market is said to be unconcentrated. If, after a merger or acquisition, the HHI is at or below 1,000, it is generally thought that there is no competitive harm from the merger or acquisition; that is, the merger or acquisition does not make the exercise of market power more likely. An HHI between 1,000 and 1,800 is said to indicate moderate concentration. An HHI over 1,800 is said to indicate a highly concentrated market. The FERC uses these same standards when it assesses mergers and acquisitions. However, for market-based rate authority, the FERC uses a threshold of 2,500 for the HHI in one of its standards.

The HHIs… ranged from 1,106 in December to 1,604 in March. The peak capacity HHI for the year in total was 1,292, lower than that in 2008 (1,411). All of these HHI statistics fall within the moderately concentrated range, with the peak for year falling at the lower end of this range.

Market Pricing

SPP Average Annual Load-Weighted Wholesale Energy Prices 2005-2009 (1) ($/megawatt-hour)

The SPP average load-weighted energy prices from 2007 – 2009 varied, due in most part to variances in fuel costs.

The chart on the following page from the U.S. Energy Information Administration is a visual representation of the fuel cost inputs from 2005 – 2009 that influenced the energy prices in SPP. The consistency in the trends between the preceding chart and several of the fuel cost trends on the chart on the following page are significant, because they illustrate the high correlation between wholesale energy prices and underlying fuel costs.

(1) SPP began operation of an Energy Imbalance Service market on February 1, 2007.
### U.S. Nominal Fuel Costs 2005-2009

($ per million Btu)

<table>
<thead>
<tr>
<th>Year</th>
<th>Coal</th>
<th>Natural Gas</th>
<th>Residual Fuel Oil</th>
<th>Distillate Fuel Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>$4.69</td>
<td>$4.69</td>
<td>$8.85</td>
<td>$13.10</td>
</tr>
<tr>
<td>2006</td>
<td>$2.21</td>
<td>$2.21</td>
<td>$5.00</td>
<td>$5.20</td>
</tr>
<tr>
<td>2007</td>
<td>$1.50</td>
<td>$1.50</td>
<td>$3.50</td>
<td>$3.60</td>
</tr>
<tr>
<td>2008</td>
<td>$1.00</td>
<td>$1.00</td>
<td>$2.00</td>
<td>$2.10</td>
</tr>
<tr>
<td>2009</td>
<td>$0.50</td>
<td>$0.50</td>
<td>$1.00</td>
<td>$1.10</td>
</tr>
</tbody>
</table>

**Source:** U.S. Energy Information Administration, Independent Statistics and Analysis
SPP began operation of an Energy Imbalance Service market on February 1, 2007.

SPP's base year for fuel-cost references is 2007 as the SPP EIS Market launched on February 1, 2007.

SPP only has a real-time energy imbalance service market.
Unconstrained Energy Portion of System Marginal Cost

The unconstrained energy portion of system marginal cost is the marginal price of maintaining balance in the economic dispatch ignoring transmission limitations. This trend chart shows the annual average marginal price of energy across SPP over all hours. The trend closely follows the trend of aggregate fuel prices from 2005 through 2009 which illustrates the fact that marginal energy price fluctuations are primarily driven by fuel prices.

(1) SPP began operation of an Energy Imbalance Service market on February 1, 2007.
**Energy Market Price Convergence**

Data on price convergence in this section does not include SPP as SPP does not operate a day-ahead energy market.

**Congestion Management**

SPP does not operate a congestion hedging market.

**Resources**

Since the implementation of the Energy Imbalance Service market in February 2007, SPP generator availability continues to be strong. More in-depth tracking of generator availability is expected to be implemented in late 2010/early 2011 as part of the recently approved SPP Strategic Plan.
**Fuel Diversity**

Installed generation capacity in SPP is approximately 40% coal, 45% gas, 7% nuclear, 5% wind and less than 5% from all other fuel sources. Actual generation from baseload units (generally coal or nuclear) totals just over 72%, with gas accounting for 23%, and approximately 5% for other sources of fuel.
Demand Response

**SPP Demand Response Capacity as Percentage of Total Installed Capacity 2005-2009**

- 2005: 1.53%
- 2006: 0%
- 2007: 2%
- 2008: 4%
- 2009: 6%

**SPP Demand Response as a Percentage of Synchronized Reserve Market 2005-2009**

SPP does not operate a synchronized reserve market.
Renewable Resources

SPP Renewable Megawatt Hours as a Percentage of Total Energy 2005-2009

SPP Hydroelectric Megawatt Hours as a Percentage of Total Energy 2005-2009
Energy capacity and production from renewable sources has been growing in SPP over the last several years, especially in wind renewables. Wind capacity has more than doubled since the implementation of the EIS market in February 2007, growing from 1,515 MW to 3,313 MW of nameplate capacity at the end of 2009.
C. SPP Organizational Effectiveness

Administrative Costs

SPP Annual Actual Costs as a Percentage of Budgeted Costs 2005-2009

<table>
<thead>
<tr>
<th>Year</th>
<th>Non-Capital Costs</th>
<th>Capital Cost Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>70%</td>
<td>70%</td>
</tr>
<tr>
<td>2006</td>
<td>80%</td>
<td>80%</td>
</tr>
<tr>
<td>2007</td>
<td>90%</td>
<td>90%</td>
</tr>
<tr>
<td>2008</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>2009</td>
<td>110%</td>
<td>110%</td>
</tr>
</tbody>
</table>

Bars Represent % of Actual Costs to Approved Budgets; Dollar Amounts Represent Approved Budgets (in millions)

SPP is a strong proponent of stakeholder involvement in the establishment and monitoring of its operating and capital budgets and the monitoring of its financial affairs. This level of involvement dates back to the start as a tight power pool and continues through today as a member-driven Regional Transmission Organization.

SPP’s annual budget process culminates with the presentation of the budget to the Board of Directors. Providing some background, the SPP Board of Directors meets and acts in public, open sessions for all items except personnel issues and legal issues. Additionally, the SPP Board of Directors always meets in the presence of the Members Committee which is comprised of 15 representatives from SPP’s membership. Finally, prior to all votes, the Members Committee is asked to indicate their position on each issue through a non-binding straw vote. This vote provides the Board with direct insights as to the positions of the membership on any issue.

The chair of the SPP Finance Committee presents the budget to the SPP Board of Directors in open session at the Board’s October meeting. Following the presentation of the budget, the Board of Directors solicits comments regarding the budget from all in attendance (even those who are not members of SPP have the ability to share their position on the budget). Following the dialogue, and assuming there is a motion to approve the budget and a second of that motion, the Board will ask the Members Committee representatives to vote through a show of hands either “yes”, “no”, or “abstain”. Then, the Board members will enter their votes (the votes of the individual board members are via secret ballot and not shared individually).

SPP’s budget has a long history prior to arriving at the SPP Board of Directors for action. The budget starts informally at the grassroots of the organization through the work of numerous stakeholder groups that define the products and services they desire SPP to perform. Major changes to SPP’s products and services and business
practices are approved at the Markets and Operations Policy Committee (“MOPC”). The MOPC is a full representation committee comprised of one representative from each member of SPP. The MOPC meets in open session and reports directly to the SPP Board of Directors.

Coincident with the grassroots efforts of SPP’s Working Groups and MOPC, SPP’s Strategic Planning Committee meets to determine the strategic direction of SPP. The Strategic Planning Committee is comprised of three members of the SPP Board of Directors and eight representatives from SPP’s membership. The Strategic Planning Committee meets in open session and reports directly to the SPP Board of Directors.

SPP staff compiles the directions from the MOPC, Strategic Planning Committee, Board of Directors, and other groups to determine the direction of the company during the next fiscal year and the two years beyond. SPP staff determines the resources required to meet the goals of the organization and ultimately prepares a budget designed to meet those needs. This budget is formally presented to the SPP Finance Committee. The SPP Finance Committee is comprised of two members of the SPP Board of Directors and four representatives from the SPP membership. The Finance Committee meets in open sessions and actively seeks input from the stakeholder representatives on the Committee as well as from other interested parties. The Finance Committee diligently reviews the budget proposed by staff to ensure the resources identified are consistent with the goals and objectives of the organization and also are prudent and just. Once satisfied that the budget meets the needs of the organization the Finance Committee presents the budget to the SPP Board of Directors for approval.
The administrative costs per MWhr of load served data in the chart above should be reviewed in the context of the SPP annual load served as noted in the table below.

<table>
<thead>
<tr>
<th>ISO/RTO</th>
<th>2009 Annual Load Served (in terawatt hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPP</td>
<td>324</td>
</tr>
</tbody>
</table>
SPP’s 2009 stakeholder satisfaction survey was an open-ended survey asking for comments on areas of satisfaction, dissatisfaction, and general comments. No numeric or scoring data was collected.

The percentage of satisfied members remains strong in SPP. The lowest year for member satisfaction was 2007, which was the year the Energy Imbalance Market was launched. As can be expected, with a new market coming online, there were many questions and concerns, mostly due to the unknown. Most significantly, however, the satisfaction percentage increased from 84% in 2007 to 90% in 2008 once everyone had experience in the new market.
**Billing Controls**

<table>
<thead>
<tr>
<th>ISO/RTO</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPP</td>
<td>Qualification for One Control Objective in SAS 70 Type 1 Audit</td>
<td>Qualification for Six Control Objectives in SAS 70 Type 2 Audit</td>
<td>Qualification for Six Control Objectives in SAS 70 Type 2 Audit</td>
<td>Qualification for Two Control Objectives in SAS 70 Type 2 Audit</td>
<td>Qualification for Two Control Objectives in SAS 70 Type 2 Audit</td>
</tr>
</tbody>
</table>

SPP billing controls have continued to evolve. While qualifications have continued to occur, improvement over time has been incremental and the severity of the exceptions leading to qualified opinions has decreased. Most importantly while qualifications have continued, there has been no negative settlement or financial impacts to SPP's members and customers. Corrective actions have been undertaken to produce future unqualified opinions.
D. Southwest Power Pool Specific Initiatives

Part of SPP’s Value Proposition is being a relationship-based and member-driven organization. Over 500 stakeholders are involved in SPP’s organizational structure of committees, working groups, and task forces. This member involvement drives SPP’s decisions related to strategic vision, budget, transmission expansion, markets, and other corporate initiatives. In the last few years, SPP and its members have also worked closely with state regulators to successfully implement several innovative cost allocation initiatives. Because SPP works to gain consensus from its members and regulators, the organization has few protests on its filings. From 2006 to mid-2010, for 1154 filings there were only 74 protests and 1 hearing.

Regional State Committee Completion of Responsibilities

The SPP Regional State Committee (RSC) provides collective state regulatory agency input on matters of regional importance related to the development and operation of bulk electric transmission. The SPP RSC is comprised of retail regulatory commissioners from agencies in Arkansas, Kansas, Missouri, Nebraska, New Mexico, Oklahoma, and Texas. In 2004, the RSC adopted a transmission expansion cost allocation proposal, commonly referred to as “Base Plan Funding”, under which 33% of reliability upgrade costs would be allocated regionally. Following the adoption of Base Plan Funding, the RSC shifted its focus to cost allocation for economic upgrades, with a goal of promoting investment in transmission facilities that could reduce congestion and result in lower-cost wholesale electric supply to load-serving entities and ultimately end-use customers and in 2008, advanced the concept that permit one or more entities to bear a portion or all costs of building a transmission facility, called a “Sponsored Upgrade,” in exchange for transmission credits for others’ use of that facility and incrementally focusing on an approach to developing a portfolio of economic upgrades called the “Balanced Portfolio”.

Most recently, the RSC adopted the “Highway/Byway” cost allocation methodology, a methodology which assigns costs of 300 kV+ “highway” upgrades 100% regionally. Costs of “byway” upgrades above 100 kV and below 300 kV are assigned 33% regionally and 67% zonally. “Byway” upgrades below 100 kV are allocated zonally.

With the exception of one Regional State Committee member voting “no” on the Highway/Byway cost allocation methodology, the other cost allocation proposals were approved unanimously.

Progress on Strategic Goals

SPP’s Strategic Planning Committee determines the strategic direction of SPP. The Committee, comprised of three independent Board members and eight representatives from SPP’s membership, meets in open session to develop strategic plans and to continually evaluate the progress of the organization in meeting those plans. Working with stakeholders and the Regional State Committee the organization has accomplished many strategic goals.

In 2005, the Board of Directors approved a strategic plan that included six primary areas of focus, including: markets development; transmission expansion; administrative processes; retention and addition of participants; enhanced regional planning; and, long-range planning. SPP has made significant progress toward these goals. The Energy Imbalance Service market was implemented in February 2007, and development is underway for the next phases of market development. In 2006, a refocus on certain areas and a desire to engage in a longer-term planning horizon
yielded additional focus areas including: providing service on contract basis to increase revenue, further membership in SPP and enhance the quality of existing services, and; an effort to organize as a Regional Entity under the Electric Reliability Organization (ERO) to perform the delegated responsibilities related to the compliance, enforcement and development of mandatory reliability standards.

In 2010, the Committee established a strategic direction for SPP to position it to fulfill its mission statement over the next decade and beyond. The plan creates three foundational strategies: building a robust transmission system; developing efficient market processes; and; creating member value.

**Member Involvement in Budget Approval**

SPP is a strong proponent of stakeholder involvement in the establishment and monitoring of its operating and capital budgets and the monitoring of its financial affairs. The budget starts informally at the grassroots of the organization through the work of numerous stakeholder groups that define the products and services they desire SPP to perform and culminates with the presentation of the budget to the Board of Directors. Given this direction SPP staff develops the resources required to meet the goals of the organization and ultimately prepares a budget designed to meet those needs and formally presents it to the SPP Finance Committee. The SPP Finance Committee is comprised of two members of the SPP Board of Directors and four representatives from the SPP membership. The Finance Committee meets in open sessions and actively seeks input from the stakeholder representatives on the Committee as well as from other interested parties. The Finance Committee diligently reviews the budget proposed by staff to ensure the resources identified are consistent with the goals and objectives of the organization and also are prudent and just. Once satisfied that the budget meets the needs of the organization, the Finance Committee presents the budget to the SPP Board of Directors for approval.

**Stakeholder Process in SPP**

As noted above, because SPP works to gain consensus from its members and regulators, in the last 5 years, SPP has made over 1150 filings, of which only 74 were protested and 1 went to the hearing phase and that was a “paper” hearing.

<table>
<thead>
<tr>
<th>Year</th>
<th>Filings by SPP</th>
<th>SPP Filings that were protested</th>
<th>SPP Filings that went to hearing</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>167 (FERC only)</td>
<td>21</td>
<td>0</td>
</tr>
<tr>
<td>2007</td>
<td>176 (FERC only)</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>2008</td>
<td>258</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>2009</td>
<td>323</td>
<td>19</td>
<td>1</td>
</tr>
<tr>
<td>2010</td>
<td>230 (as of 7/23)</td>
<td>8</td>
<td>0</td>
</tr>
</tbody>
</table>