
**MONTHLY AUDIT REPORT ON THE
SOUTHEAST ENERGY EXCHANGE MARKET**

**FOR
December 2024**

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I. OVERVIEW

This is the December 2024 Auditor report on the Southeast Energy Exchange Market (SEEM). SEEM is a system energy market that uses a centralized intra-hour energy exchange to create bilateral trades among its trading participants every 15 minutes. It uses available transmission capability (ATC) of the SEEM members under a transmission service designed for SEEM, called Non-Firm Energy Exchange Transmission Service (NFEETS). It has been operating since December 2022 and now has 24 members.¹

As discussed herein, trading volumes in December were 89,000 MWh, down from the all-time high in November 2024 of 118,000 MWh and above the 12-month trailing monthly average of 84,000 MWh. With an average bid-offer spread of \$2.19/MWh, the estimated production cost savings from SEEM transactions in December are close to \$200,000. Trading among SEEM members relies on individual transmission path segments connecting the members and trades may span multiple segments. Transmission availability on individual segments varied widely. For many segments capacity is available in every interval. For other segments, availability is zero in many intervals. Considering all intervals and segments, 6 percent of the time availability was zero and 92 percent of the time a segment was available while no cleared transaction utilized it. Overall, this indicates widely available transmission. Due to transmission loss costs, transmission constraints, and participant-specific constraints, about 24,000 MWh of potential economic exchanges were left uncleared in December, which is comparable to the level in November. As explained more below, these are uncleared offers and bids in the same interval where the offer price was less than the bid price by more than the average cost of losses.

SEEM is governed by the SEEM Membership Board. The automated architecture of SEEM was developed and is operated by Hartigen, who also serves as the SEEM Administrator. Our auditing role is directed by the Membership Board in accordance with elements specified in the Market Rules as developed by the Membership Board and approved by the Federal Energy Regulatory Commission (FERC). The results of our auditing are reported to the Membership Board through submission of this Monthly Report. We also have a duty under the Market Rules to respond to inquiries made by regulators and other oversight authorities, including FERC. We received no such inquiries during the period of this report.

¹ The initial 18 members are: Alabama Power Company; Georgia Power Company; Mississippi Power Company; Associated Electric Cooperative, Inc.; Dalton Utilities; Dominion Energy South Carolina, Inc.; Duke Energy Carolinas, LLC; Duke Energy Progress, LLC; Louisville Gas & Electric Company and Kentucky Utilities Company; North Carolina Municipal Power Agency Number 1; PowerSouth Energy Cooperative; North Carolina Electric Membership Corporation; Tennessee Valley Authority; Georgia System Operations Corporation; Georgia Transmission Corporation; Municipal Electric Authority of Georgia; Oglethorpe Power Corporation; and South Carolina Public Service Authority. The Florida members joining in June 2023 are: Seminole Electric Cooperative; Tampa Electric Company; Duke Energy Florida; Florida Power Corporation; TEA Gainesville System Utilities; and TEA JEA.

The SEEM auditing framework is based on the provisions of the SEEM Market Rules Section VI.D. (Auditing Process). These duties are in four main categories. The first duty is to analyze SEEM input, constraints, and matching results to determine if SEEM operates in accordance with the SEEM Rules (SEEM Rules Sections VI.D.1, VI.D.1.4). This is the main day-to-day auditing work and represents most of the activities reported herein.

A second auditing responsibility is ensuring participants have access to SEEM data in accordance with the SEEM Rules (Sections VI.D.2). Access to SEEM data involves allowing each SEEM participant to review its own bids and offers and to view matches made by the system. We are in receipt of the bid and offer data and have verified that this data is available daily.

A third area of responsibility is to report to the Membership Board regarding (1) the reliability and accuracy of the SEEM System, and (2) any complaints received from a Participant to the Membership Board and to investigate further any such complaint at the Board's direction (SEEM Rules Sections VI.D.3, VI.D.1.5). The purpose of Section II of this report is to fulfil our responsibility to report on the reliability and accuracy of the SEEM system to the Board. Regarding complaints from participants to the Board, we were not directed by the Board to investigate any such complaints during the period of this report.

Finally, we have the duty to respond to written questions from Participants, FERC, NERC, state commissions in the region, Tennessee Valley Authority's Inspector General, and any other applicable regulators that oversee the electric operations of any Member regarding the integrity of the matching process (SEEM Rules Sections VI.D.6). We received no such inquiry in December.

In the remainder of the report (Section II), we provide the results of our analysis of the first main area of responsibility: to analyze input, constraints, and matching results to determine whether SEEM operates in accordance with the SEEM Rules. This is in two main parts. First, we review various daily screens that ensure specific inputs, constraints, and energy exchanges have met certain validation metrics. Second, we review the economic activity in SEEM to provide insight into its functioning and performance.

II. AUDITING RESULTS

In this section, we discuss the results of our monthly auditing. In subsection A, we show the results of our daily screening. In subsection B, we present an overview of the economic activity.

A. Market Operation Screens

We calculate screens, metrics, and other analyses on a daily basis using market data and other data to meet the auditing obligations in the Market Rules. The screens and metrics are developed in accordance with specific Market Rules requirements and are divided into three main categories:

- Verification of bid/offer parameters;
- Evaluation of SEEM matching; and
- Verification of SEEM System Constraints.

The following three subsections describe the screens used for our auditing. Unless otherwise indicated, these screens are calculated daily for all fifteen-minute intervals.

1. Bid/Offer Parameters

The following screens audit the information provided in participant bids and offers.

- Offers (bids) from a participant must have Participant-Specific Constraints identifying at least three other non-affiliated Participants that can be matched as counterparties;
- All offers and bids must include a source or sink;
- Each offer and bid must have a delivery interval;
- Bids and offers must be 4 MW increments;
- “All or Nothing Selection” must be indicated; and
- The Network Map must be accurate (monthly).

2. Matching

The following screens are used to audit the SEEM matches:

- Match price must not exceed the bid price and must be greater than the offer price;
- Buyer and seller must be distinct participants;
- Participant-specific constraints must be check for any changes (monthly);
- SEEM benefit calculation must be verified;
- Any maximum offer price declared must bind the transaction; and
- Each match must have a NERC Tag.

3. Constraints

The following screens audit the SEEM constraints.

- Transaction volume must not exceed offer or bid volume;
- The SEEM algorithm must only make energy exchanges that yield positive benefits to both buyer and seller; and
- Transaction volume over each segment must not exceed the segment ATC.

We have data transfer and storage architecture in place to receive SEEM data that supports the calculation of these screens. Apart from screening the network map and the participant-specific constraints (described below), the screens are calculated daily, and we have developed data processing procedures for each of the daily screens. We applied the screens to the December SEEM data and found that in all intervals the screens have indicated that requirements have been met.

For the monthly audit of the network map, we use the initial map developed by Hartigen and the SEEM working groups as a basis for comparing subsequent maps. This map is an electronic file of all sources, sinks, balancing areas, and SEEM transmission segments that comprise the SEEM system. A SEEM segment is an interface between two balancing areas and in many cases is synonymous with the path used by the system. In some cases, the segments are linked together to allow SEEM matches across multiple systems, forming a multi-segment path. The SEEM model allows any number of SEEM segments to be linked in order to find a beneficial trade.

By using this initial map as a basis of comparison, we will take advantage of the lengthy technical process used by SEEM and the SEEM members to develop the map and so we assume it is accurate. It would not be practicable to replicate this initial map. To monitor the map over time, we use the SEEM model's static path configuration database that is used by the model to assess possible paths associated with the sources and sinks offered and bid in each interval. We save a snapshot of this database and compare it to the path configuration database used at the start of each month. We identify and evaluate any changes. We found no changes in December and therefore we conclude the network map is accurate for the current sources and sinks participating in SEEM.

In a similar fashion, we evaluate changes to participant-specific constraints. These are counterparties and balancing areas acceptable to each participant for trades in SEEM, as well as any maximum price constraints. In each interval SEEM uses a set of participant-specific constraints for all participant bids and offers. We check each participant for any excluded sellers or buyers and any max price constraints and identify any constraints that changed during the month. There were no changes to participant-specific constraints among participants in December.

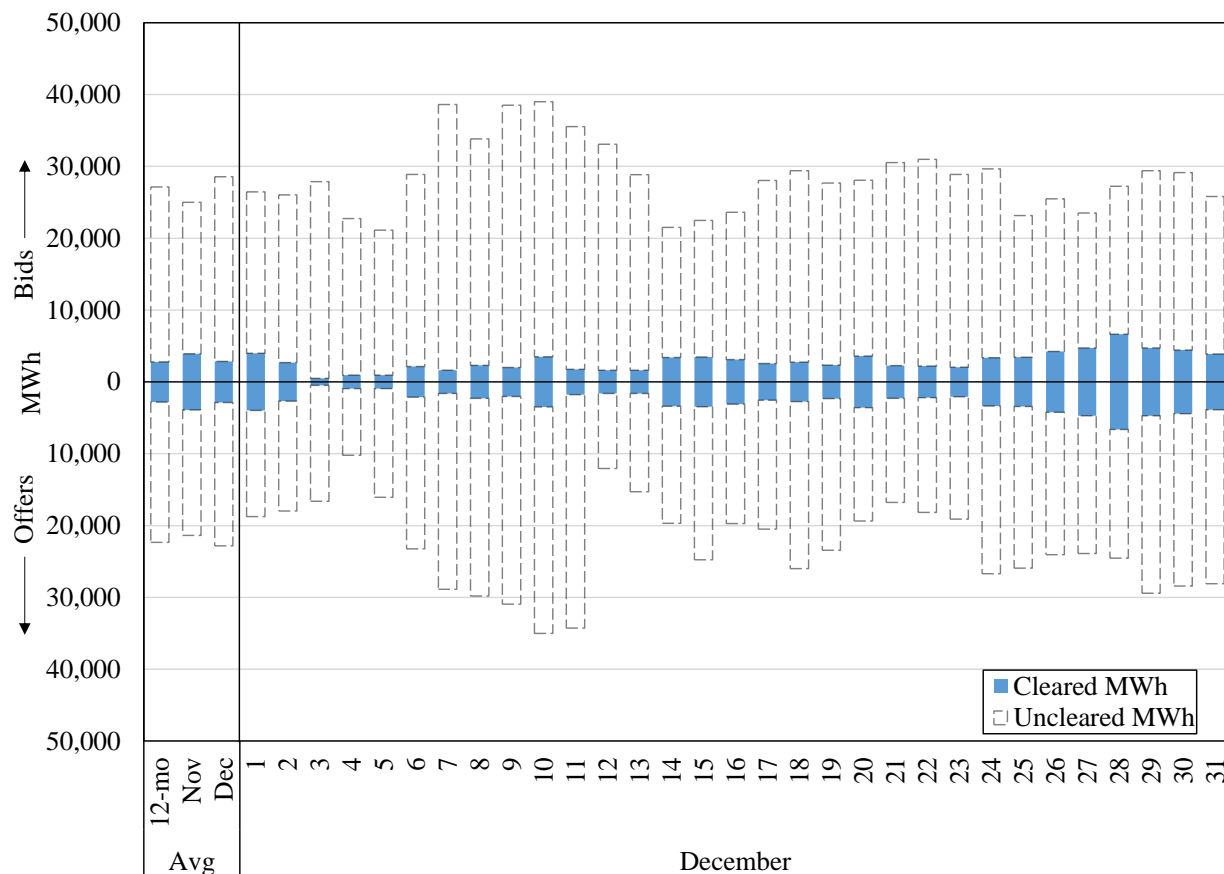
B. Market Activity

In this section, we summarize and discuss SEEM operations and outcomes to illuminate any potential operating or market issues. Our evaluation is in two principal areas. First, is an overall review of the market trading, including volumes, prices, and characteristics of participation. Second is an evaluation of network usage, focusing on the key transmission paths and constraints.

1. Market Outcomes

SEEM cleared nearly 89,000 MWh of energy in December, lower than November and higher than the trailing 12-month average of 84,000 MWh. Figure 1 shows the daily SEEM bids and offers for December. Each bar represents the daily total MWh volume of SEEM activity. The bids and offers are divided between cleared bids to buy (blue bar above the x axis) and cleared offers to sell (blue bars below the x axis). The transparent bar stacked above the bids and below the offers are the uncleared bids and offers.

Figure 1: Daily Bids and Offers
December 2024

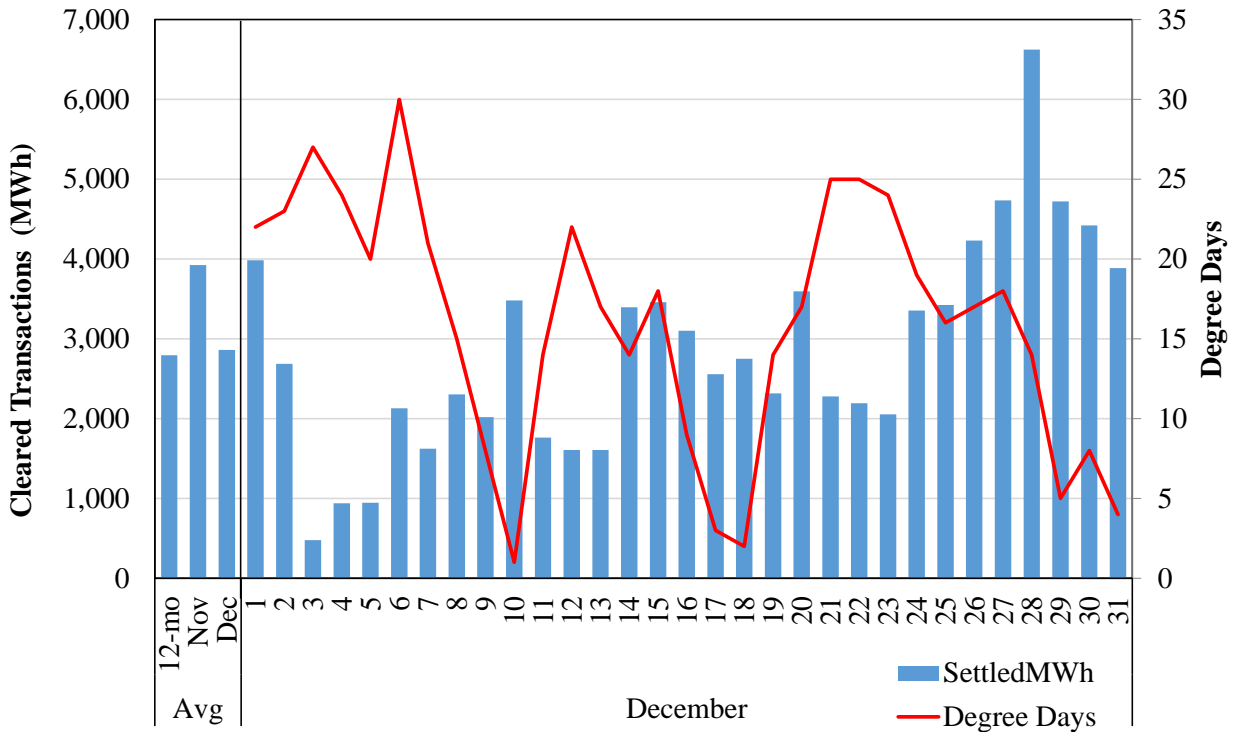


The left side columns show activity relative to the previous month and relative to the 12-month rolling average. As the left-side monthly and the 12-month average bars show, total liquidity

(cleared and uncleared bids and offers) was slightly lower than both the 12-month average and lower than November's level, even though December's cleared volumes were at an all-time high.

The individual days in Figure 1 show some variation in offers, bids, and cleared transactions across the month. Figure 2 shows the daily cleared transactions alone, to better observe the daily variation. We also include a proxy for system demand, Degree Days, are common measure of daily temperature levels that measure the demand for cooling and heating.²

Figure 2: Cleared Transactions and Demand



The chart shows some periods of time when the trading volumes and DD move in opposite direction. However, we found no statistical relationship as measured by the correlation coefficient³ between Degree Days and trading volumes. We extended the period of observation to 12 months and included other potential relationships variables. These are shown in Table 1.

² According to the US National Weather Service, "Degree days are the difference between the daily temperature mean, (high temperature plus low temperature divided by two) and 65°F. If the temperature mean is above 65°F, we subtract 65 from the mean and the result is **Cooling Degree Days**. If the temperature mean is below 65°F, we subtract the mean from 65 and the result is **Heating Degree Days**." For the Figure, we use Degrees Days from

³ The correlation coefficient is a statistic that measures the relationship between two variables (in our case the cleared volumes and Degree Days). A positive correlation coefficient indicates the variables tend to move in the same direction while a negative correlation coefficient indicates the variables tend to move in opposite directions. A correlation coefficient at or close to zero means there is no linear relationship.

As shown in the table, even extending the time period to the trailing twelve-month period, the relationship did not attain statistical significance. (see row 1 of the table). The other entries in Table 1 are calculations of statistical relationships among other key variables.

Table 1: Market Correlation Statistics
Trailing 12-months Ending December 2024

		Correlation Coefficients	
		Degree Days	Price
1	Trade Volume	-0.124	-0.201
	<i>p value</i>	0.019	0.000
2	Offer Volume	-0.415	-0.328
	<i>p value</i>	0.000	0.000
3	Bid Volume	0.201	0.185
	<i>p value</i>	0.000	0.000
4	Price	0.466	
	<i>p value</i>	0.000	

Note: Highlighted values are statistically significant.

The Table shows the correlation statistics between market activity (Trades, Offers, and Bids) and DD and Price. The second entry in Row 1 shows Trade Volume is negatively correlated with clearing prices. The price clearing price is an equilibrium price, determined by supply (Offers) and demand (bids). A lower clearing price together with a higher trade volume, as the correlation indicates, means supply has increased, by entry of lower cost offers, perhaps due to lower input costs (natural gas costs).

Row 2 in the Table shows a statistically significant *negative* correlation between supply offers and DD, which we would not expect based on market fundamentals alone -- with higher system demand, we would expect more supply to respond. However, resource management also requires recourse to reliability considerations. High DD days can create tight operating conditions and a withdrawal of supply to meet reliability objectives, thus reducing capacity available for economy trades in SEEM. Our discussion with participants supported this logic. Row 2 also shows Offer Volume is negatively correlated with price, something that is expected from market fundamentals -- as supply responds to market conditions, prices will tend to decrease.

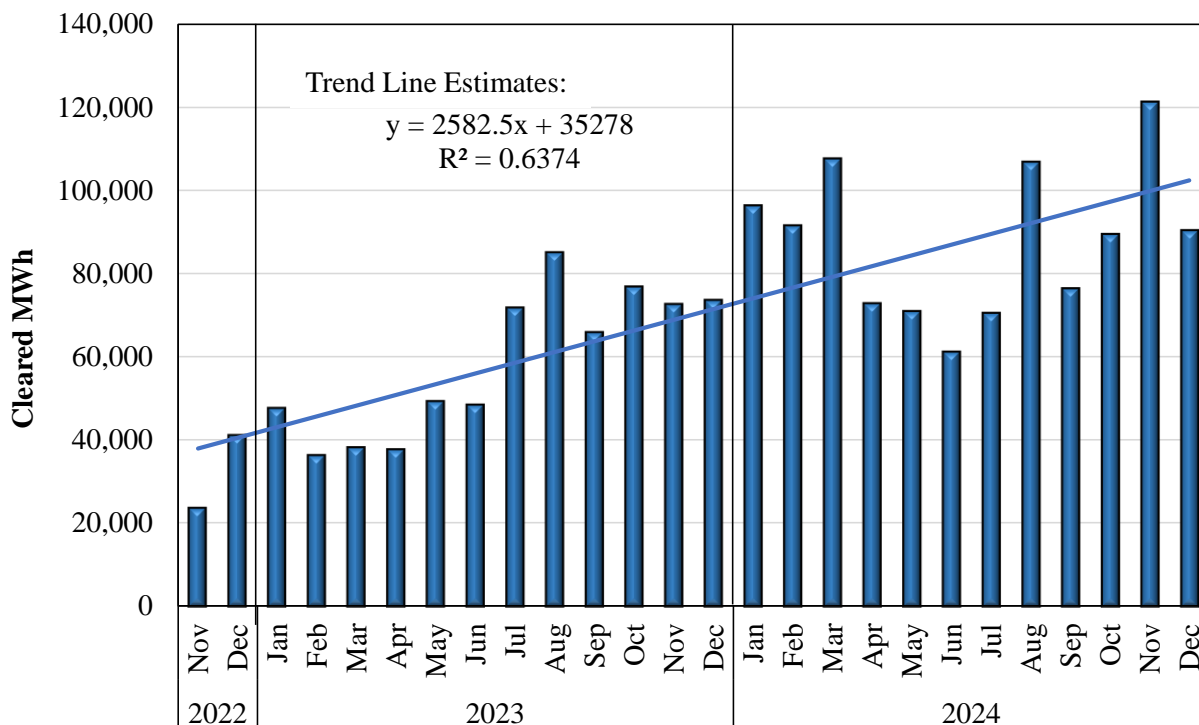
The positive correlation between Bid Volume and DD price is expected from economic theory because higher system demand will result in more participants seeking power supplies. Likewise, the positive correlation between Bid Volume and price is consistent with market economics -- *ceteris paribus*, an increase in participant demand should in theory result in higher prices.

The correlation matrix in the table also reports a positive correlation between price and DD, something that is also expected from economics: high overall demand tends to result in higher prices.

Overall, the absence of a statistical relationship between cleared trades and DD is likely the result of Offer Volume not responding to higher system demand, likely due to reliability constraints, which is not sufficiently offset by higher participant demand. Otherwise, the statistics suggest the market is behaving as expected according to economics.

Figure 3 shows the cleared trades on an historical monthly basis. It shows a variable volume of cleared trades with a notable increase in July 2023 with the addition of Florida participants. The highest volume was November 2024. The slope of the trend line is 2582, meaning each month the cleared volume increases by 2500, on average.

Figure 3: Monthly Volume of Cleared Trades
December 2022 - December 2024

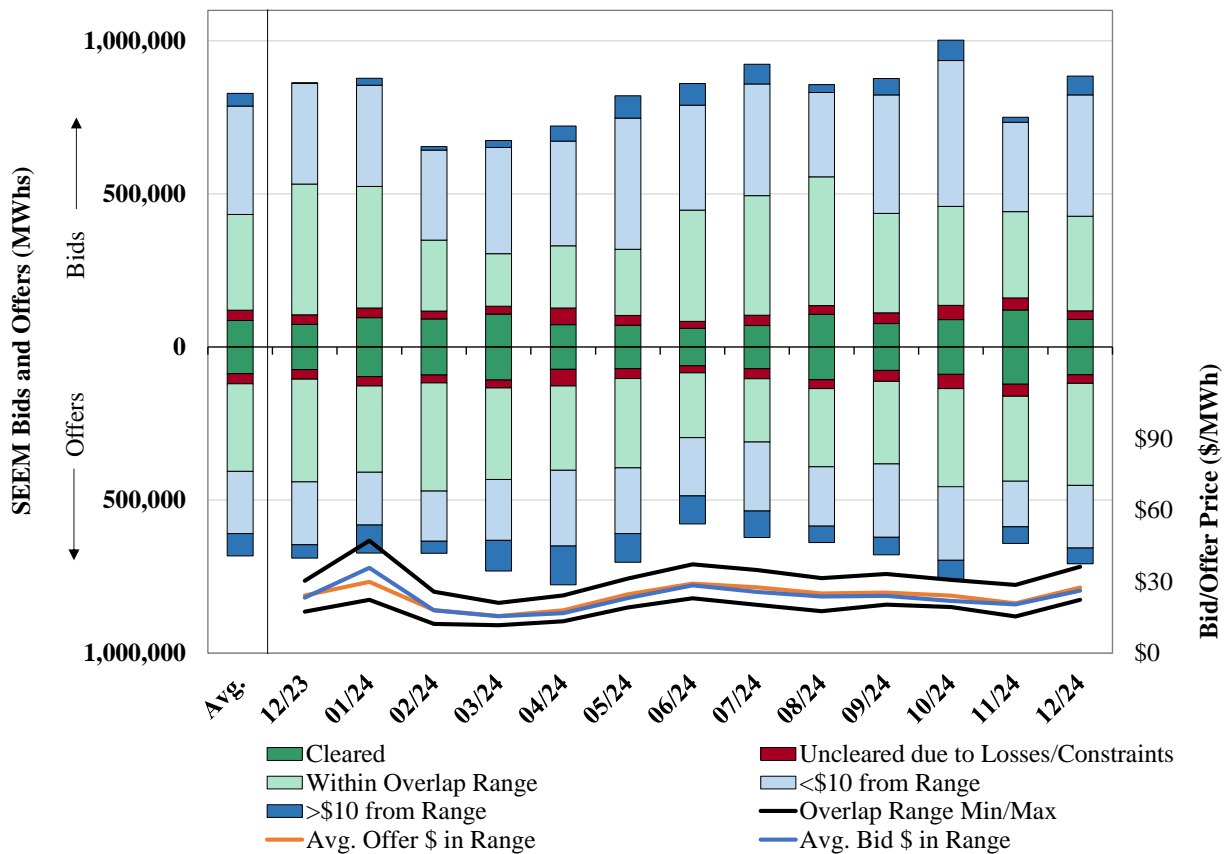


We noted above that liquidity (measured as the total bids and offers, whether cleared or not) was relatively low in December despite the high cleared volumes. Figure 4 shows the trend in market liquidity. The dark green bars are the cleared bids and offers. The rest of the bar segments are various categories of uncleared bids and offers:

- The red segment shows uncleared economic bids and offers. These transactions appear to be profitable, but do not clear because of the cost of losses or a constraint (explained more below).

- The light green bars show bids and offers that were not cleared but were within the indicated cleared bid-offer spread – i.e., from the lowest cleared offer to the highest cleared bid. Bids and offers in this group do not clear because there are not sufficient counterparties to clear all of them – i.e., the counterparty bids/offers that could be economic have already been matched to another bid/offer with greater savings.
- The light blue bars show bids/offers within \$10 of the overlap range (\$10 or less outside the cleared bid-offer range).
- The dark blue bars show bids/offers greater than \$10 of the overlap range – i.e., offers to sell that are >\$10 higher than this highest bid or offers to buy energy <\$10 less than the lowest supply offer. Participants likely do not expect these to clear.

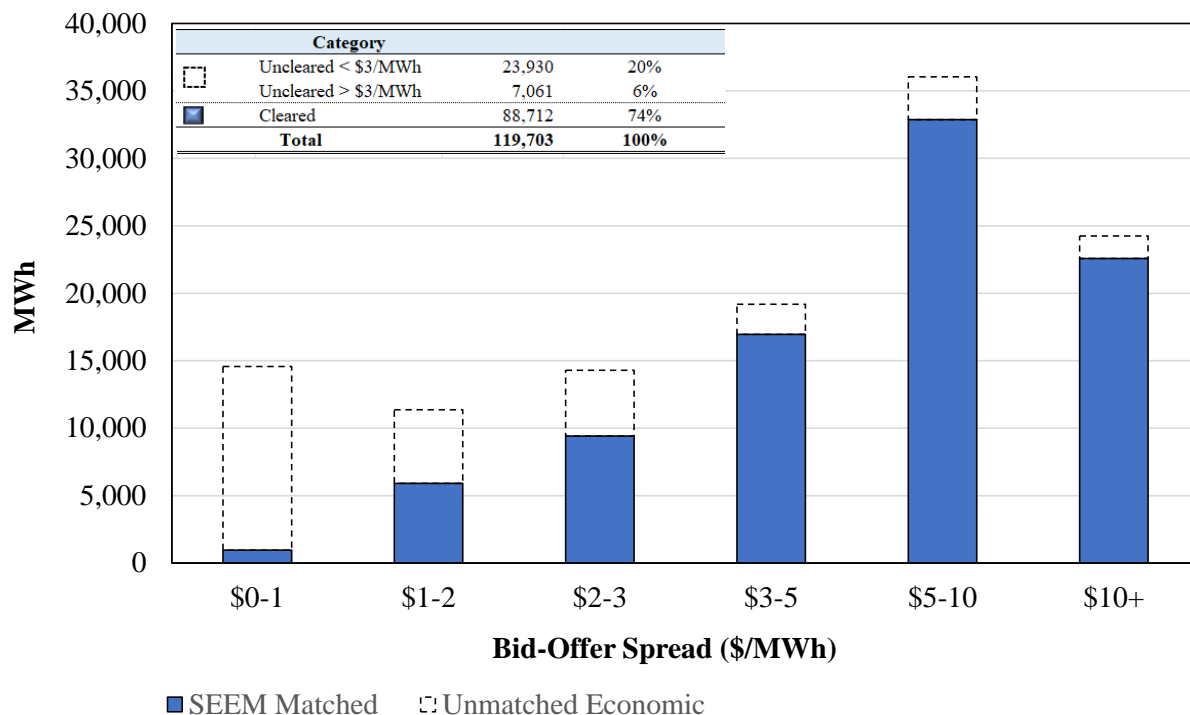
Figure 4: Bid and Offer Evaluation



In Figure 4, the total size of the stacked bars (both bids and offers) are an indication of market liquidity. In general, there tends to be more bids (varying about 750,000 MWh) than offers (around 600,00 MWh). If one measures liquidity as the sum of all the bar segments (counting the offer segments below the bar in absolute values), the liquidity is not statistically correlated with cleared trades over the 13-month period.

Like in previous months, our evaluation of uncleared bids and offers found a notable volume of uncleared bids and offers with economic overlap in the sense that in an interval there were uncleared bids whose bid price was greater than some uncleared offer prices in the same interval. Of course, most economic uncleared matches have a small bid-offer spread, and likely are not matched due to transmission losses that render the trade uneconomic. However, there are some economic uncleared matches with substantial spreads. Figure 5 shows a summary of the cleared and uncleared matches. Each stacked bar shows the SEEM matches (blue bar) and the economic unmatched (transparent bar) at the given bid-offer spread. For example, the first blue bar shows SEEM matches where bids exceed offers by up to \$1 – there are very few because that spread would not pay most transmission loss cost. The transparent box shows considerable uncleared economic bids and offers that did not clear at spreads up to \$1.

Figure 5: Cleared and Uncleared Economic Matches
December 2024



To understand why economic bids and offers may not have cleared, it is useful to examine the bid-offer spread. Average loss charges are roughly \$2 per MWh, although some potential economic matches would incur higher loss costs. Therefore, in the inset table, we divide totals between bid-offer spreads above and below \$3 per MWh. Those below \$3 are likely to have not cleared because of the costs of losses, well most of those that did not clear at spreads above \$3 likely did not clear because of transmission constraints or participant constraints. The inset table also shows that over the entire period, 74 percent of the economic transactions cleared. The costs of transmission losses were likely the most significant factor that prevented transactions from

clearing. This is because in each of the periods most of the uncleared economic transactions were those with spreads of less than \$3 per MWh.

Trades clearing in SEEM offer participants the ability to reduce output from higher-cost resources and replace it with lower-cost ones. In December, the bid-offer spread averaged \$2.19/MWh. With 89,000 MWh cleared, there is approximately \$194,000 in production cost savings at least.⁴ Figure 6 shows (the lower bound of) estimated production cost savings for each month since SEEM inception. The red line shows the cumulative savings. Cumulative savings are almost \$13 million.

Figure 6: Estimated Production Cost Savings

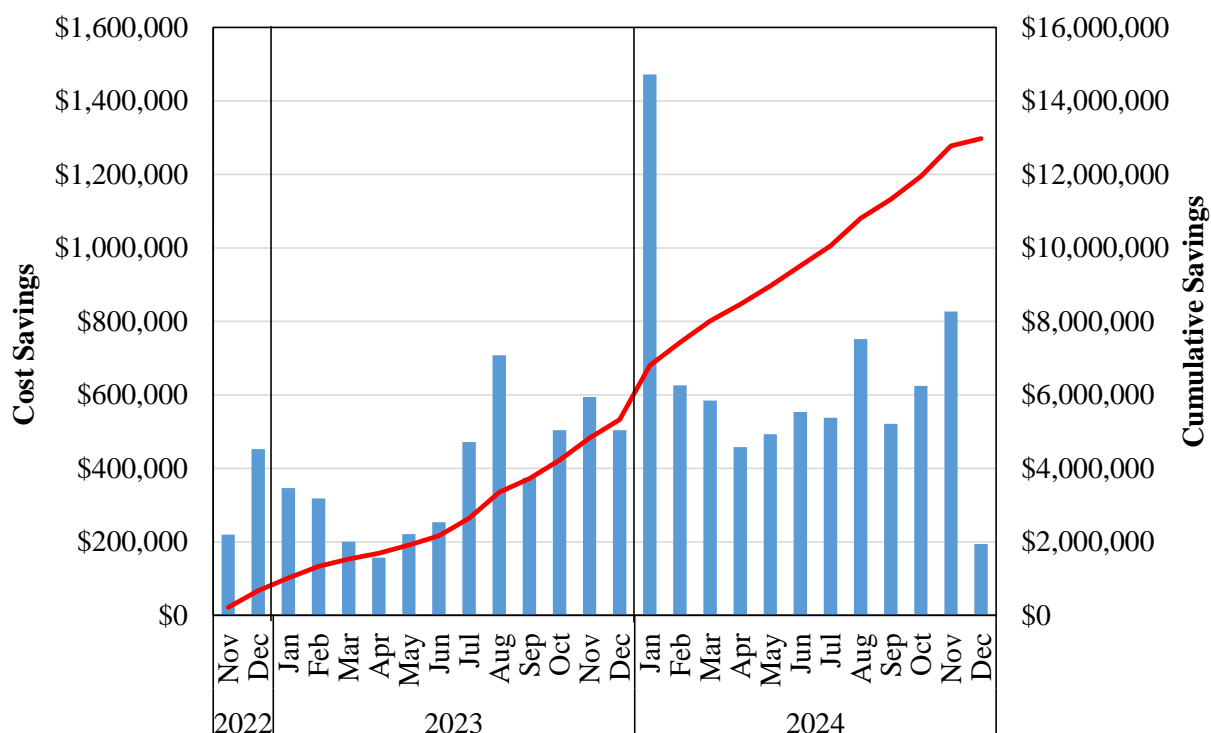
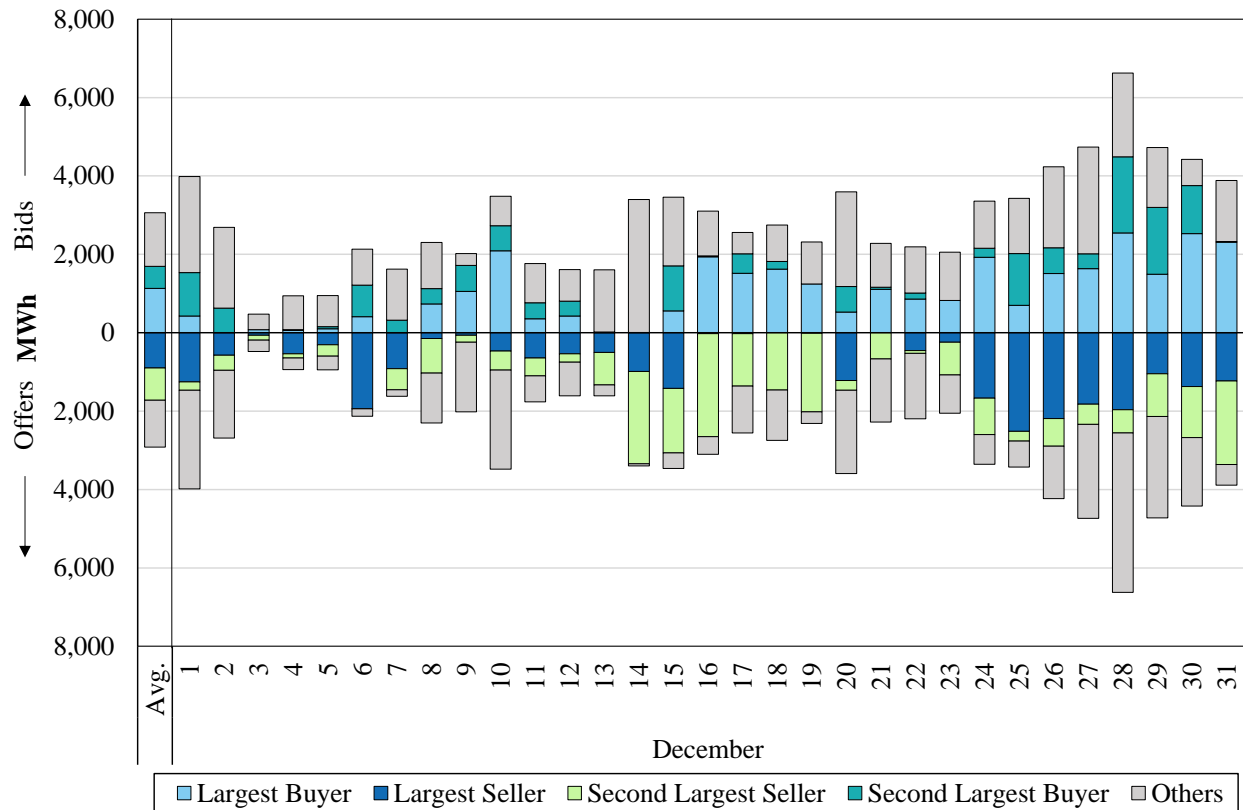


Figure 7 shows more detail on the matched bids and offers by showing the matches by the largest market participants. Like the prior figures, the bars above the x axis are cleared bids and the bars below are cleared offers. The bars in this figure are divided by the top two participants and then all the rest.

⁴ There is likely more production cost saving than the data shown because the bids (offers) are likely to be slightly lower than the true cost of buyers (higher than the true cost to sellers) due to the split-the-savings nature of SEEM. In a split-the-savings auction like SEEM, participants will improve their payoff by slightly lowering bids and raising offers in an attempt to get a split closer to their counterparty's bid or offer.

Figure 7: Volumes of Matched Bids and Offers
December 2024

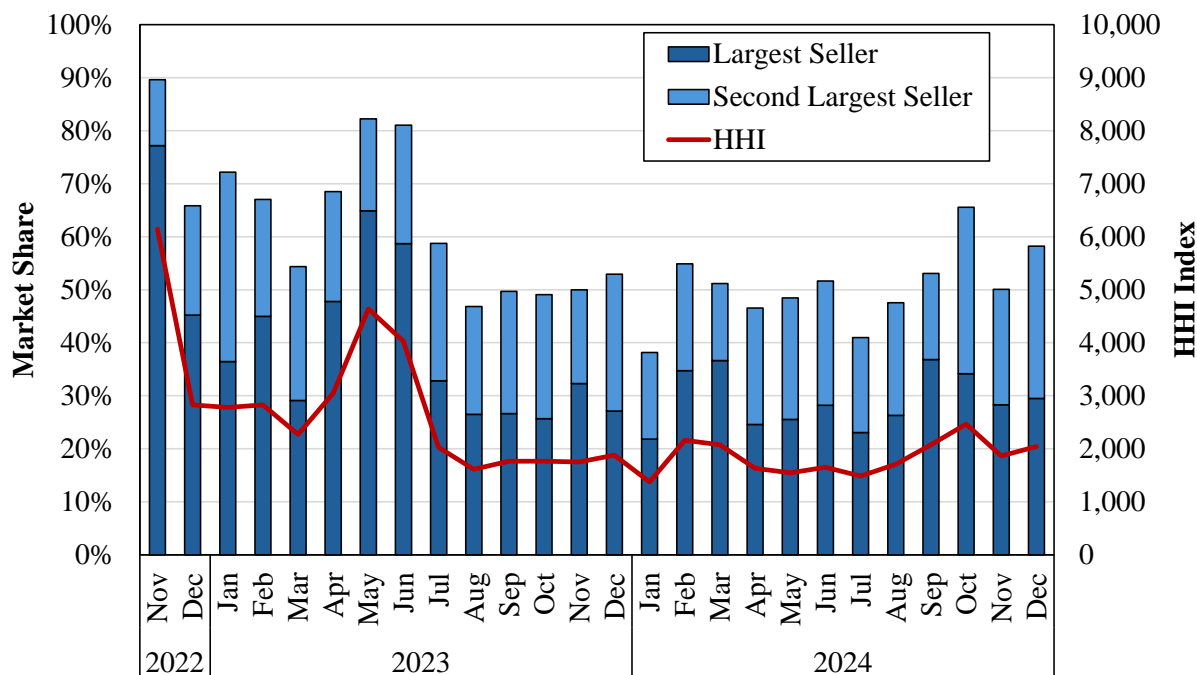


The figure shows certain buyers and sellers comprise significant shares of the transaction activity. For the month, 31 percent of the sales were made by a single seller and 34 percent of the purchases were made by a single buyer.

In the next figures, we present a time series of market shares and concentration. Economists measure market shares to get a general view of the competitiveness of a market. It is not determinative of the existence of market power, but it is useful for an overall view. Figure 8 shows the monthly share of matched transactions of the largest two sellers along with the Herfindahl Hirschmann Index (HHI), defined below. The bars in this figure stack the two top sellers during the month.

Figure 8: Seller Market Share and Concentration Statistics

December 2022 – December 2024

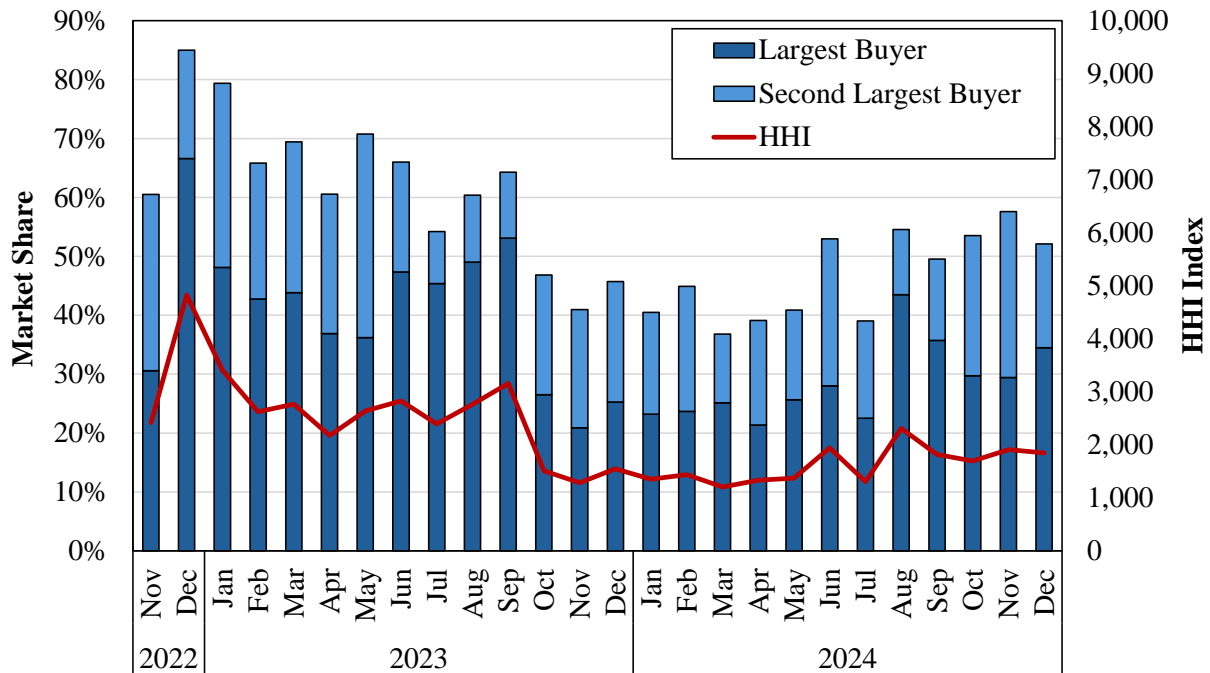


Not surprisingly, the share of the top seller, as well as the share of the top two, declined once the Florida participants fully joined in July 2023. The chart also shows that the HHI has declined. The HHI is a measure of market concentration and is used to determine market competitiveness, often on a relative basis over time or as a result of structural changes like a merger or divestiture. It is calculated by squaring the market share of each firm competing in a market and then summing the resulting numbers. It can range from close to 0 to 10,000, with lower values indicating a less concentrated market. A single-seller monopoly market would have an HHI of $10,000 = 100 \times 100$. A perfectly competitive market where no firm has an appreciable market share, the HHI is close to zero. The US antitrust agencies (FTC and DOJ) consider markets with:

- HHI greater than 1800 to be highly concentrated;
- one with an HHI between 1000 and 1800 to be moderately concentrated; and
- one with an HHI less than 1000 to be unconcentrated.

The HHI indicates that the SEEM market has been highly concentrated in most months. However, the HHI has come down since December and has remained close to 1800. Although this is close to the highly concentrated range, it has been falling. Figure 9 shows the buyer concentration.

Figure 9: Buyer Market Share and Concentration Statistics
December 2022 – December 2024

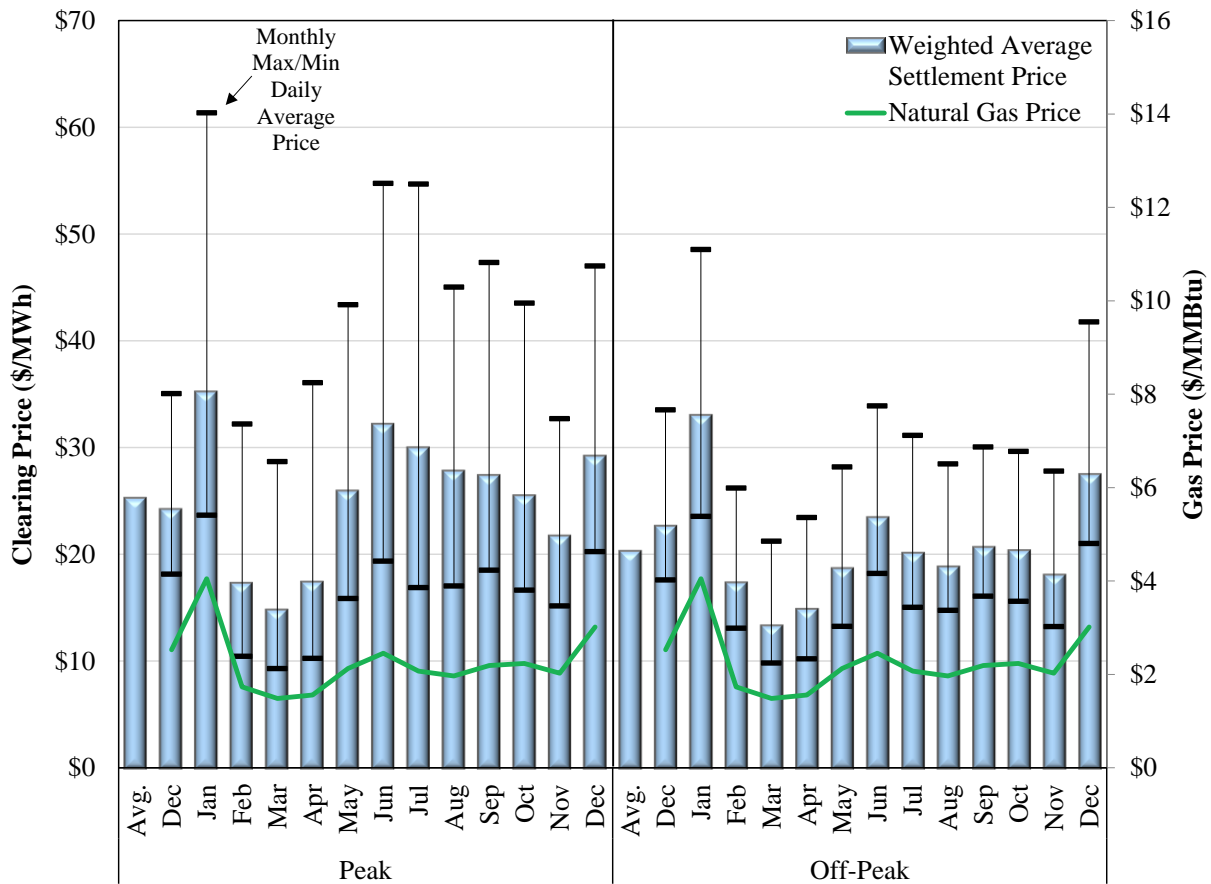


The entry of Florida participants coincided with a decline in buyer concentration. These declines, together with the uptrend in matched trades, are indicative of a market evolving to greater liquidity and competitiveness.

2. Network Usage

In this subsection, we report on the usage of the SEEM network. Figure 10 shows monthly SEEM clearing prices, natural gas costs, and average daily minimum and maximum prices in peak and off-peak hours during the month. The figure shows that prices are correlated with natural gas costs, which is the marginal fuel in many hours and strongly influences the value of power. The superimposed lines over the bars show the price spread over each month.

Figure 10: Monthly Clearing Prices and Natural Gas Costs



The figure shows that both peak and off-peak prices increased in December relative to November and were roughly in line with the 12-month average. The whisker bars for each month show that the value of transactions can vary significantly, mainly because transmission constraints can contribute to higher prices between different locations. If a constraint prevents higher total flows between two (beneficial trading) areas, the average transaction price will be higher than if sufficient transmission capability was available to allow all beneficial trades to clear between the areas.

Accordingly, we evaluate SEEM transactions by path segments. SEEM trades among participants using ATC. We gathered ATC and trading statistics for all SEEM segments available to the model. In December, there were 250 segments used in SEEM for which an ATC value was posted, and another 46 segments used for which no ATC is posted (these are segments that were available on an unlimited basis.⁵) There were 55 segments in SEEM not used. We calculate total segment (MWh) usage for the 296 segments that were used during the month. For segments with

⁵ It is not unusual for transmission paths to have no ATC value posted, and not just for the SEEM transmission service (NFEETS), but also longer-term service.

ATC values, we report the median, maximum, and minimum ATC values over all intervals for each segment. For these “ATC segments,” we are also able to calculate a “loading factor” based on the scheduled transactions and ATC on the segment during each 15-minute interval. It is the portion of the path used in that interval relative to the maximum amount that could have been used based on the ATC.

In addition to schedule volumes and the ATC statistics, we also calculate how each segment was utilized by interval during the month, *to wit*, the interval was either:

- (1) Partially used (MWs cleared were less than ATC or total MWs cleared on a segment without ATC);
- (2) Fully Used, ATC was used up for the interval;⁶
- (3) Unavailable, no ATC;⁷ and
- (4) Uncleared (no schedules on the segment).

In reporting the usage of each segment, we refer to a “segment-interval” which is an observation in a single interval on one segment. Table 2 shows an excerpt of our statistics. The table displays the segments that had at least 2,000 MWh of transactions scheduled during the month. The full data for all segments is provided in Appendix A. When ATC is listed as “None” this means there was no ATC posted.

⁶ ATC less the MW schedule was less than 4 MW (i.e., no additional SEEM transaction could be cleared).

⁷ ATC was less than 4 MW at the start of the interval.

Table 2: Statistics for Most Utilized SEEM Segments
December 2024

Segment	ATC			MWs	Loading Factor	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max			Intervals	%	Intervals	%	Intervals	%	Intervals	%
F/FPC/FPC-SOCO//	0	184	259	26,872	23.41%	952	32%	188	6%	484	16%	1352	45%
S/SC/SOCO-SC//	0	1,319	2,335	20,900	2.40%	910	31%	5	0%	294	10%	1767	59%
SS/SOCO/FL-SOCO//	2	678	972	11,262	2.31%	606	20%	0	0%	2	0%	2368	80%
F/TEC/TEC-FPC//	0	2,553	3,304	8,791	0.49%	676	23%	0	0%	20	1%	2280	77%
SS/SOCO/SOCO-SC//	0	158	540	7,815	5.86%	310	10%	146	5%	63	2%	2457	83%
F/JEA/SOCO-JEA//	61	573	847	7,300	1.74%	867	29%	0	0%	0	0%	2109	71%
S/TVA/SOCO-TVA//	0	4,637	4,940	7,191	0.22%	259	9%	0	0%	28	1%	2689	90%
F/FPC/TEC-SOCO//	0	184	259	6,930	6.03%	502	17%	38	1%	480	16%	1956	66%
SS/SOCO/FL-SC/MULTIPATHALIAS/	0	157	540	6,610	5.00%	364	12%	112	4%	65	2%	2435	82%
SS/SOCO/SOCO-FL//	620	1,438	2,322	6,412	0.60%	595	20%	0	0%	0	0%	2381	80%
S/CPL/CPL-SC//	0	2,740	4,379	6,209	0.33%	303	10%	0	0%	195	7%	2478	83%
S/SC/CPL-SC//	0	1,740	3,214	6,200	0.48%	303	10%	0	0%	80	3%	2593	87%
SS/SOCO/SOCO-SOCO//	35,264	44,230	44,230	5,498	0.02%	381	13%	0	0%	0	0%	2595	87%
SS/SOCO/SOCO-DUK//	19	481	772	4,915	1.44%	303	10%	6	0%	0	0%	2667	90%
S/SC/EG/SOCO-SC/EG//	0	541	2,010	4,404	0.99%	358	12%	0	0%	1,153	39%	1465	49%
S/TVA/TVA-DUK//	0	440	440	4,210	1.30%	111	4%	0	0%	8	0%	2857	96%
S/MEAG/SOCO-MEAG//	2,566	3,135	3,285	4,199	0.18%	265	9%	0	0%	0	0%	2711	91%
SS/SOCO/TVA-SOCO//	726	1,282	1,580	4,018	0.44%	112	4%	0	0%	0	0%	2864	96%
S/DUK/SOCO-DUK//	0	1,920	2,220	3,916	0.30%	202	7%	0	0%	172	6%	2602	87%
S/CPL/CPL-DUK//	0	3,463	7,506	3,755	0.14%	162	5%	0	0%	1	0%	2813	95%
S/TVA/TVA-SOCO//	4,651	4,915	4,926	3,737	0.10%	101	3%	0	0%	0	0%	2875	97%
S/DUK/TVA-DUK//	0	692	692	3,555	0.72%	90	3%	7	0%	81	3%	2798	94%
F/FPC/SOCO-FPC//	0	367	493	3,457	1.31%	293	10%	15	1%	12	0%	2656	89%
S/SC/DUK-SC//	0	1,684	3,129	3,429	0.27%	356	12%	0	0%	26	1%	2594	87%
S/MEAG/FPC-SC//	None	None	None	3,222	0.00%	372	13%	0	0%	0	0%	2604	88%
SS/SOCO/FL-SCEG/MULTIPATHALIAS/	1	119	143	2,903	3.48%	239	8%	47	2%	19	1%	2671	90%
SS/SOCO/FL-TVA/MULTIPATHALIAS/	2	678	972	2,707	0.56%	168	6%	0	0%	2	0%	2806	94%
S/DUK/SOCO-SC//	0	1,858	2,220	2,261	0.18%	140	5%	0	0%	122	4%	2714	91%
S/MEAG/FPC-TVA//	None	None	None	2,230	0.00%	151	5%	0	0%	0	0%	2825	95%
S/DUK/CPL-SOCO//	0	2,217	2,335	2,148	0.14%	97	3%	0	0%	114	4%	2765	93%
S/MEAG/SOCO-JEA//	None	None	None	2,112	0.00%	290	10%	0	0%	0	0%	2686	90%
SS/SOCO/DUK-SOCO//	309	804	1,031	2,091	0.35%	109	4%	0	0%	0	0%	2867	96%

The “Uncleared” category indicates that among these most utilized segments, many of them have over 90 percent of their intervals uncleared. There are, however, numerous instances when segments are constrained. A constrained segment is one where either (1) the segment is completely used by SEEM (“Fully Used” column in the table) or (2) ATC is insufficient (less than 4 MW) prior to SEEM matching (the “Unavailable” column in the table).

Table 3 show the summary usage for all segments. During the month, total segment intervals is the product of all 351 segments and the number of intervals during the month. In December, there were 1,044,57 segment intervals.⁸ The two circumstances (Cases (2) and (3)) when a segment is constrained occurred in more than 19,000 segment-intervals and almost always because the ATC was insufficient to schedule (i.e., $ATC < 4$ MW) rather than because it is fully used by a SEEM match. The most common case in the data was “Uncleared” (Case 4), where ATC was available or there was no ATC posted, but the segment was not used because no beneficial transactions were cleared by the SEEM model over that segment. These cases represent over 97 percent of all segment-intervals. The second most common case was case “Unavailable” (Case 3), where ATC

⁸ The maximum number of segment intervals in a month is (351 segments x 4 intervals x 24 hours x #days in the month). This is the maximum because occasionally the system requires shutting down for short periods to perform upgrades and other patches. In December, SEEM operated in all intervals.

was not sufficient to clear any SEEM transactions (1.8 percent of the time). The third most common case was “Partially Used” (Case 1), where the segment was partially used (1.5 percent of the time). Finally, in a small number of intervals, the Segment ATC was “Fully Used” (Case 2), where the segment was completely scheduled in the interval (680).

Table 3: Summary of All Segments
December 2024

Segment	Case 1 Partially Used		Case 2 Fully Used		Case 3 Unavailable		Case 4 Uncleared	
	Intervals	%	Intervals	%	Intervals	%	Intervals	%
All Segments	15,705	1.5%	680	0.1%	18,549	1.8%	1,009,642	96.7%

Measuring transmission capacity congestion by adding Case 2 and 3, the percentage of constrained segment intervals was 1.9 percent in December (versus 5.7 percent in November). Overall, these results indicate that transmission was generally available to facilitate economic transactions in the SEEM region. As we discussed above, transmission loss costs were likely the main factor in preventing economic trades from being consummated than transmission constraints.

Further insight into constrained segments can be gained from Table 4. It shows the 20 segments least often available to SEEM. All segments shown reported ATC of 0 in one or more intervals during the month (ATC Min=0). In some intervals there were at least some cleared trades. Like in previous months, these frequently unavailable paths are in many intervals unused when they are available (as indicated by the “Uncleared” column). Overall, the evaluation of individual segments indicates the system is largely unconstrained for SEEM activity.

Table 4: Most Constrained SEEM Segments
December 2024

Segment	ATC			Loading		Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max	MWhs	Factor	Intervals	%	Intervals	%	Intervals	%	Intervals	%
S/SEEG/SOCO-SEEG//	0	541	2,010	4,404	0.99%	358	12%	0	0%	1,153	39%	1465	49%
S/TVA/AECI-CPLW//	0	48	308	26	0.04%	8	0%	1	0%	1,115	37%	1852	62%
S/TVA/AECI-DUK//	0	48	440	80	0.11%	13	0%	0	0%	1,115	37%	1848	62%
S/TVA/AECI-SOCO//	0	50	512	240	0.31%	22	1%	10	0%	1,115	37%	1829	61%
S/TVA/AECI-LGEE//	0	50	512	0	0.00%	0	0%	0	0%	1,115	37%	1861	63%
S/TVA/AECI-TVA//	0	48	512	93	0.12%	5	0%	4	0%	1,111	37%	1856	62%
S/AECI/AECI-TVA//	0	92	704	439	0.36%	45	2%	11	0%	827	28%	2093	70%
S/MEAG/MEAG-DUK//	0	51	149	21	0.07%	0	0%	2	0%	533	18%	2441	82%
F/FPC/FPC-SOCO//	0	184	259	26,872	23.41%	952	32%	188	6%	484	16%	1352	45%
F/FPC/SEC-SOCO/SSN-SOCO/	0	184	259	0	0.00%	0	0%	0	0%	480	16%	2496	84%
F/FPC/SEC-SOCO/SSO-SOCO/	0	184	259	0	0.00%	0	0%	0	0%	480	16%	2496	84%
F/FPC/TEC-SOCO//	0	184	259	6,930	6.03%	502	17%	38	1%	480	16%	1956	66%
F/FPC/GVL-SOCO//	0	184	259	0	0.00%	0	0%	0	0%	480	16%	2496	84%
S/DUK/CPLW-SEEG//	0	95	427	4	0.01%	1	0%	0	0%	350	12%	2625	88%
S/SC/SOCO-SEEG//	0	1,358	2,632	471	0.05%	40	1%	0	0%	318	11%	2618	88%
S/SC/SOCO-SC//	0	1,319	2,335	20,900	2.40%	910	31%	5	0%	294	10%	1767	59%
S/DUK/SOCO-SEEG//	0	95	427	221	0.33%	29	1%	3	0%	293	10%	2651	89%
S/DUK/CPLW-SEEG//	0	95	427	0	0.00%	0	0%	0	0%	293	10%	2683	90%
S/DUK/DUK-SEEG//	0	95	427	125	0.19%	30	1%	0	0%	280	9%	2666	90%
S/SEEG/DUK-SEEG//	0	92	157	379	0.58%	53	2%	11	0%	238	8%	2674	90%

III. CONCLUSION

We reviewed the operation of SEEM for December 2024. We have developed operational procedures to validate the market rules and constraints of SEEM. All our screens have been validated, and we conclude the SEEM operated within the rules and constraints. We also have evaluated the SEEM outcomes and have not identified significant operating issues.

Appendix A

SEEM Path Usage -- December 2024

Segment	ATC			MWs	Loading Factor	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max			Intervals	%	Intervals	%	Intervals	%	Intervals	%
F/FPC/FPC-SOCO//	0	184	259	26,872	23.41%	952	32%	188	6%	484	16%	1352	45%
S/SC/SOCO-SC//	0	1,319	2,335	20,900	2.40%	910	31%	5	0%	294	10%	1767	59%
SS/SOCO/FL-SOCO//	2	678	972	11,262	2.31%	606	20%	0	0%	2	0%	2368	80%
F/TEC/TEC-FPC//	0	2,553	3,304	8,791	0.49%	676	23%	0	0%	20	1%	2280	77%
SS/SOCO/SOCO-SC//	0	158	540	7,815	5.86%	310	10%	146	5%	63	2%	2457	83%
F/JEA/SOCO-JEA//	61	573	847	7,300	1.74%	867	29%	0	0%	0	0%	2109	71%
S/TVA/SOCO-TVA//	0	4,637	4,940	7,191	0.22%	259	9%	0	0%	28	1%	2689	90%
F/FPC/TEC-SOCO//	0	184	259	6,930	6.03%	502	17%	38	1%	480	16%	1956	66%
SS/SOCO/FL-SC/MULTIPATHALIAS/	0	157	540	6,610	5.00%	364	12%	112	4%	65	2%	2435	82%
SS/SOCO/SOCO-FL//	620	1,438	2,322	6,412	0.60%	595	20%	0	0%	0	0%	2381	80%
S/CPL/CPL-SC//	0	2,740	4,379	6,209	0.33%	303	10%	0	0%	195	7%	2478	83%
S/SC/CPL-SC//	0	1,740	3,214	6,200	0.48%	303	10%	0	0%	80	3%	2593	87%
SS/SOCO/SOCO-SOCO//	35,264	44,230	44,230	5,498	0.02%	381	13%	0	0%	0	0%	2595	87%
SS/SOCO/SOCO-DUK//	19	481	772	4,915	1.44%	303	10%	6	0%	0	0%	2667	90%
S/SCEG/SOCO-SCEG//	0	541	2,010	4,404	0.99%	358	12%	0	0%	1,153	39%	1465	49%
S/TVA/TVA-DUK//	0	440	440	4,210	1.30%	111	4%	0	0%	8	0%	2857	96%
S/MEAG/SOCO-MEAG//	2,566	3,135	3,285	4,199	0.18%	265	9%	0	0%	0	0%	2711	91%
SS/SOCO/TVA-SOCO//	726	1,282	1,580	4,018	0.44%	112	4%	0	0%	0	0%	2864	96%
S/DUK/SOCO-DUK//	0	1,920	2,220	3,916	0.30%	202	7%	0	0%	172	6%	2602	87%
S/CPL/CPL-DUK//	0	3,463	7,506	3,755	0.14%	162	5%	0	0%	1	0%	2813	95%
S/TVA/TVA-SOCO//	4,651	4,915	4,926	3,737	0.10%	101	3%	0	0%	0	0%	2875	97%
S/DUK/TVA-DUK//	0	692	692	3,555	0.72%	90	3%	7	0%	81	3%	2798	94%
F/FPC/SOCO-FPC//	0	367	493	3,457	1.31%	293	10%	15	1%	12	0%	2656	89%
S/SC/DUK-SC//	0	1,684	3,129	3,429	0.27%	356	12%	0	0%	26	1%	2594	87%
S/MEAG/FPC-SC//	None	None	None	3,222	0.00%	372	13%	0	0%	0	0%	2604	88%
SS/SOCO/FL-SCEG/MULTIPATHALIAS/	1	119	143	2,903	3.48%	239	8%	47	2%	19	1%	2671	90%
SS/SOCO/FL-TVA/MULTIPATHALIAS/	2	678	972	2,707	0.56%	168	6%	0	0%	2	0%	2806	94%
S/DUK/SOCO-SC//	0	1,858	2,220	2,261	0.18%	140	5%	0	0%	122	4%	2714	91%
S/MEAG/FPC-TVA//	None	None	None	2,230	0.00%	151	5%	0	0%	0	0%	2825	95%
S/DUK/CPL-SOCO//	0	2,217	2,335	2,148	0.14%	97	3%	0	0%	114	4%	2765	93%
S/MEAG/SOCO-JEA//	None	None	None	2,112	0.00%	290	10%	0	0%	0	0%	2686	90%
SS/SOCO/DUK-SOCO//	309	804	1,031	2,091	0.35%	109	4%	0	0%	0	0%	2867	96%
S/GTC/FPC-SC//	None	None	None	1,933	0.00%	143	5%	0	0%	0	0%	2833	95%
SS/SOCO/SOCO-TVA//	450	1,847	2,515	1,889	0.15%	72	2%	0	0%	0	0%	2904	98%
F/FPC/TEC-FPC//	0	2,602	3,353	1,861	0.10%	257	9%	0	0%	8	0%	2711	91%
S/CPL/DUK-CPL//	456	3,701	7,233	1,788	0.06%	180	6%	0	0%	0	0%	2796	94%
SS/SOCO/SOCO-SCEG//	1	119	143	1,580	1.89%	154	5%	25	1%	17	1%	2780	93%
S/DUK/CPL-TVA//	0	692	692	1,348	0.27%	60	2%	0	0%	8	0%	2908	98%
SS/SOCO/FL-DUK/MULTIPATHALIAS/	2	471	728	1,339	0.40%	126	4%	0	0%	2	0%	2848	96%
S/DUK/DUK-SC//	0	2,211	2,763	1,082	0.07%	249	8%	0	0%	124	4%	2603	87%
F/JEA/JEA-SOCO//	33	522	742	1,059	0.30%	234	8%	4	0%	0	0%	2738	92%
S/TVA/DUK-TVA//	0	426	426	929	0.30%	91	3%	0	0%	24	1%	2861	96%
S/SC/SC-SOCO//	406	2,894	3,735	902	0.04%	63	2%	0	0%	0	0%	2913	98%
S/SCEG/SC-SCEG//	583	3,775	6,076	857	0.03%	77	3%	0	0%	0	0%	2899	97%
S/DUK/DUK-SOCO//	0	2,178	2,335	856	0.06%	170	6%	0	0%	105	4%	2701	91%
S/DUK/TVA-CPL//	0	692	692	771	0.15%	45	2%	0	0%	31	1%	2900	97%
S/TVA/DUK-SOCO//	0	426	426	755	0.24%	36	1%	0	0%	1	0%	2939	99%
SS/GTC/GTC-SC//	0	225	258	668	0.44%	26	1%	0	0%	42	1%	2908	98%
S/MEAG/SOCO-SC//	None	None	None	620	0.00%	67	2%	0	0%	0	0%	2909	98%
P/LGEE/LGEE-TVA//	279	1,623	1,623	586	0.05%	64	2%	0	0%	0	0%	2912	98%
S/DUK/SOCO-CPL//	0	1,923	2,220	583	0.04%	128	4%	0	0%	129	4%	2719	91%
S/MEAG/FPC-SOCO//	None	None	None	579	0.00%	79	3%	0	0%	0	0%	2897	97%
S/CPL/SCEG-CPL//	0	816	816	574	0.10%	115	4%	0	0%	101	3%	2760	93%
S/SCEG/SOCO-CPL//	0	692	992	574	0.12%	115	4%	0	0%	33	1%	2828	95%
S/CPL/TVA-DUK//	0	308	308	566	0.25%	42	1%	0	0%	24	1%	2910	98%
S/CPL/SC-CPL//	0	1,882	3,133	560	0.04%	97	3%	0	0%	40	1%	2839	95%
S/MEAG/MEAG-SOCO//	2,451	2,601	2,901	553	0.03%	49	2%	0	0%	0	0%	2927	98%
F/TEC/FPC-TEC//	0	1,755	2,548	533	0.04%	56	2%	0	0%	20	1%	2900	97%
S/SC/SCEG-SC//	779	1,257	3,325	514	0.04%	38	1%	0	0%	0	0%	2938	99%
S/DUK/CPLW-CPL//	0	1,043	1,243	479	0.06%	36	1%	0	0%	12	0%	2928	98%

Appendix A (continued)

Segment	ATC			Loading MWs	Factor	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max			Intervals	%	Intervals	%	Intervals	%	Intervals	%
S/SC/CPLE-SCEG//	0	317	411	478	0.20%	57	2%	0	0%	29	1%	2890	97%
S/SC/SOCO-SCEG//	0	1,358	2,632	471	0.05%	40	1%	0	0%	318	11%	2618	88%
SS/SOCO/DUK-FL/MULTIPATHALIAS/	309	804	1,031	464	0.08%	84	3%	0	0%	0	0%	2892	97%
S/SC/SC-SCEG//	0	3,661	6,050	453	0.02%	35	1%	0	0%	63	2%	2878	97%
S/TVA/TVA-CPLW//	0	308	308	444	0.20%	18	1%	0	0%	4	0%	2954	99%
S/AECI/AECI-TVA//	0	92	704	439	0.36%	45	2%	11	0%	827	28%	2093	70%
F/FPC/FPC-TEC//	0	1,969	2,788	421	0.03%	45	2%	0	0%	8	0%	2923	98%
SS/SOCO/SC-FL/MULTIPATHALIAS/	160	414	502	420	0.15%	36	1%	0	0%	0	0%	2940	99%
S/MEAG/FPC-SCEG//	None	None	None	415	0.00%	141	5%	0	0%	0	0%	2835	95%
S/SC/SC-SCEG//	1,630	3,113	5,196	383	0.02%	36	1%	0	0%	0	0%	2940	99%
S/DUK/DUK-TVA//	0	692	692	381	0.08%	71	2%	0	0%	8	0%	2897	97%
S/SC/SC-SCEG//	0	92	157	379	0.58%	53	2%	11	0%	238	8%	2674	90%
S/CPL/CPLE-SCEG//	0	501	752	360	0.11%	45	2%	0	0%	175	6%	2756	93%
S/MEAG/DUK-JEA//	None	None	None	351	0.00%	68	2%	0	0%	0	0%	2908	98%
S/MEAG/FPC-DUK//	None	None	None	340	0.00%	40	1%	0	0%	0	0%	2936	99%
S/TVA/LGEE-SOCO//	0	3,000	3,000	338	0.02%	28	1%	0	0%	4	0%	2944	99%
SS/SOCO/TVA-FL/MULTIPATHALIAS/	620	1,235	1,573	336	0.04%	47	2%	0	0%	0	0%	2929	98%
S/SC/SOCO-CPLE//	0	2,336	2,817	320	0.02%	71	2%	0	0%	26	1%	2879	97%
SS/GTC/FPC-TVA//	None	None	None	317	0.00%	17	1%	0	0%	0	0%	2959	99%
S/SC/SC-CPLE//	777	2,251	2,874	303	0.02%	31	1%	0	0%	0	0%	2945	99%
S/AECI/TVA-AECI//	143	935	1,018	282	0.04%	17	1%	0	0%	0	0%	2959	99%
SS/GTC/GTC-DUK//	0	283	485	242	0.12%	12	0%	1	0%	28	1%	2935	99%
S/TVA/AECI-SOCO//	0	50	512	240	0.31%	22	1%	10	0%	1,115	37%	1829	61%
S/MEAG/MEAG-SC//	0	48	56	236	0.67%	18	1%	12	0%	68	2%	2878	97%
S/TVA/SOCO-AECI//	0	725	725	235	0.05%	17	1%	0	0%	25	1%	2934	99%
S/DUK/SOCO-SCEG//	0	95	427	221	0.33%	29	1%	3	0%	293	10%	2651	89%
SS/SOCO/TVA-SCEG/MULTIPATHALIAS/	1	119	143	221	0.26%	18	1%	3	0%	17	1%	2938	99%
S/CPL/CPLE-TVA//	0	308	308	210	0.09%	15	1%	0	0%	30	1%	2931	98%
S/DUK/CPLE-CPLW//	0	454	454	210	0.07%	15	1%	0	0%	176	6%	2785	94%
S/TVA/CPLW-TVA//	0	308	308	208	0.09%	14	0%	0	0%	24	1%	2938	99%
SS/SOCO/SC-TVA/MULTIPATHALIAS/	160	414	502	208	0.07%	8	0%	0	0%	0	0%	2968	100%
S/MEAG/JEA-SC//	None	None	None	189	0.00%	45	2%	0	0%	0	0%	2931	98%
SS/SOCO/TVA-SC/MULTIPATHALIAS/	0	158	540	189	0.14%	10	0%	3	0%	63	2%	2900	97%
S/MEAG/SC-MEAG//	0	33	41	171	0.75%	5	0%	20	1%	8	0%	2943	99%
SS/GTC/FPC-SCEG//	None	None	None	168	0.00%	41	1%	0	0%	0	0%	2935	99%
S/MEAG/MEAG-JEA//	82	224	383	153	0.09%	25	1%	0	0%	0	0%	2951	99%
S/SC/SC-DUK//	968	2,560	3,758	153	0.01%	20	1%	0	0%	0	0%	2956	99%
S/MEAG/FPC-MEAG//	0	81	119	142	0.26%	31	1%	0	0%	124	4%	2821	95%
SS/GTC/GTC-SOCO//	20,000	20,000	20,000	128	0.00%	10	0%	0	0%	0	0%	2966	100%
S/DUK/DUK-SCEG//	0	95	427	125	0.19%	30	1%	0	0%	280	9%	2666	90%
S/MEAG/TVA-SC//	None	None	None	115	0.00%	16	1%	0	0%	0	0%	2960	99%
F/FPC/SOCO-TEC//	0	367	493	112	0.04%	12	0%	0	0%	12	0%	2952	99%
S/DUK/SC-SOCO//	1,045	2,161	2,335	109	0.01%	11	0%	0	0%	0	0%	2965	100%
S/MEAG/DUK-MEAG//	0	148	228	109	0.10%	11	0%	0	0%	16	1%	2949	99%
S/TVA/LGEE-DUK//	133	440	440	106	0.03%	21	1%	0	0%	0	0%	2955	99%
S/CPL/CPLE-SCEG//	0	501	752	98	0.03%	13	0%	0	0%	101	3%	2862	96%
S/TVA/LGEE-CPLW//	270	308	308	96	0.04%	15	1%	0	0%	0	0%	2961	99%
SS/GTC/SOCO-DUK//	None	None	None	94	0.00%	3	0%	0	0%	0	0%	2973	100%
S/TVA/AECI-TVA//	0	48	512	93	0.12%	5	0%	4	0%	1,111	37%	1856	62%
SS/GTC/SOCO-JEA//	None	None	None	90	0.00%	13	0%	0	0%	0	0%	2963	100%
S/DUK/CPLW-DUK//	0	1,033	1,243	87	0.01%	6	0%	0	0%	62	2%	2908	98%
S/MEAG/DUK-FPC//	None	None	None	86	0.00%	18	1%	0	0%	0	0%	2958	99%
S/MEAG/GTC-JEA//	None	None	None	82	0.00%	11	0%	0	0%	0	0%	2965	100%
SS/GTC/FPC-MEAG//	None	None	None	82	0.00%	11	0%	0	0%	0	0%	2965	100%
SS/SOCO/SC-SOCO//	160	414	502	82	0.03%	8	0%	0	0%	0	0%	2968	100%
S/TVA/AECI-DUK//	0	48	440	80	0.11%	13	0%	0	0%	1,115	37%	1848	62%
SS/GTC/FPC-SOCO//	None	None	None	77	0.00%	11	0%	0	0%	0	0%	2965	100%
SS/GTC/TVA-SC//	None	None	None	76	0.00%	6	0%	0	0%	0	0%	2970	100%
S/CPL/SC-SCEG//	8	501	752	66	0.02%	6	0%	0	0%	0	0%	2970	100%
S/DUK/DUK-CPLE//	733	4,085	5,952	66	0.00%	13	0%	0	0%	0	0%	2963	100%

Appendix A (continued)

Segment	ATC			MWs	Loading Factor	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max			Intervals	%	Intervals	%	Intervals	%	Intervals	%
S/MEAG/JEA-MEAG//	0	81	119	66	0.12%	12	0%	1	0%	124	4%	2839	95%
S/SC/SEG/SC/SC//	1,043	2,868	5,112	64	0.00%	4	0%	0	0%	0	0%	2972	100%
SS/GTC/GTC-JEA//	429	940	1,524	61	0.01%	15	1%	0	0%	0	0%	2961	99%
SS/GTC/FPC-GTC//	0	396	611	60	0.02%	4	0%	0	0%	24	1%	2948	99%
SS/GTC/SOCO-GTC//	12,693	13,267	14,684	56	0.00%	7	0%	0	0%	0	0%	2969	100%
SS/GTC/JEA-SC/EG//	None	None	None	53	0.00%	9	0%	0	0%	0	0%	2967	100%
S/MEAG/MEAG-FPC//	82	224	358	52	0.03%	12	0%	0	0%	0	0%	2964	100%
SS/GTC/GTC-FPC//	429	940	1,524	51	0.01%	3	0%	0	0%	0	0%	2973	100%
S/MEAG/JEA-TVA//	None	None	None	49	0.00%	14	0%	0	0%	0	0%	2962	100%
S/DUK/TVA-SC//	0	692	692	48	0.01%	8	0%	0	0%	45	2%	2923	98%
S/MEAG/SC-JEA//	None	None	None	48	0.00%	8	0%	0	0%	0	0%	2968	100%
S/DUK/SC-DUK//	0	2,262	2,901	46	0.00%	12	0%	0	0%	62	2%	2902	98%
S/SC/EG/CPL-SC/CO//	17	317	411	46	0.02%	7	0%	0	0%	0	0%	2969	100%
S/TVA/LGEE-TVA//	0	3,000	3,000	46	0.00%	2	0%	0	0%	4	0%	2970	100%
S/DUK/CPL-SC//	0	2,538	2,763	45	0.00%	3	0%	0	0%	179	6%	2794	94%
S/TVA/DUK-AECI//	0	426	426	45	0.01%	6	0%	0	0%	25	1%	2945	99%
S/MEAG/TVA-JEA//	None	None	None	32	0.00%	7	0%	0	0%	0	0%	2969	100%
S/MEAG/TVA-FPC//	None	None	None	30	0.00%	7	0%	0	0%	0	0%	2969	100%
S/DUK/TVA-SC/EG//	0	97	427	29	0.04%	2	0%	1	0%	223	7%	2750	92%
S/TVA/AECI-CPLW//	0	48	308	26	0.04%	8	0%	1	0%	1,115	37%	1852	62%
S/SC/CPL-SC/CO//	389	3,400	3,900	24	0.00%	4	0%	0	0%	0	0%	2972	100%
SS/SOCO/SC/EG-FL/MULTIPATHALIAS/	65	125	149	23	0.03%	3	0%	0	0%	0	0%	2973	100%
S/MEAG/MEAG-DUK//	0	51	149	21	0.07%	0	0%	2	0%	533	18%	2441	82%
SS/GTC/JEA-TVA//	None	None	None	21	0.00%	7	0%	0	0%	0	0%	2969	100%
S/MEAG/SOCO-FPC//	None	None	None	20	0.00%	8	0%	0	0%	0	0%	2968	100%
SS/GTC/GTC-SC/EG//	5	65	78	20	0.04%	2	0%	0	0%	0	0%	2974	100%
SS/GTC/SC/EG-GTC//	36	68	81	20	0.04%	3	0%	0	0%	0	0%	2973	100%
S/MEAG/FPC-GTC//	None	None	None	19	0.00%	4	0%	0	0%	0	0%	2972	100%
S/MEAG/TVA-SC/EG//	None	None	None	19	0.00%	8	0%	0	0%	0	0%	2968	100%
SS/GTC/MEAG-JEA//	None	None	None	19	0.00%	4	0%	0	0%	0	0%	2972	100%
SS/GTC/TVA-JEA//	None	None	None	18	0.00%	2	0%	0	0%	0	0%	2974	100%
SS/GTC/JEA-GTC//	0	396	611	17	0.01%	3	0%	0	0%	24	1%	2949	99%
S/CPL/DUK-SC//	0	3,341	4,379	16	0.00%	5	0%	0	0%	53	2%	2918	98%
SS/GTC/JEA-SC//	None	None	None	16	0.00%	5	0%	0	0%	0	0%	2971	100%
SS/GTC/TVA-SC/EG//	None	None	None	16	0.00%	1	0%	0	0%	0	0%	2975	100%
S/MEAG/GTC-MEAG//	1,777	2,025	2,195	15	0.00%	1	0%	0	0%	0	0%	2975	100%
SS/GTC/GTC-MEAG//	9,706	9,953	9,999	15	0.00%	1	0%	0	0%	0	0%	2975	100%
SS/GTC/FPC-DUK//	None	None	None	12	0.00%	1	0%	0	0%	0	0%	2975	100%
SS/GTC/GTC-TVA//	30	419	608	12	0.00%	0	0%	1	0%	0	0%	2975	100%
SS/SOCO/DUK-SC/EG/MULTIPATHALIAS/	1	119	143	12	0.01%	1	0%	0	0%	17	1%	2958	99%
S/MEAG/JEA-SC/EG//	None	None	None	9	0.00%	4	0%	0	0%	0	0%	2972	100%
S/MEAG/SOCO-SC/EG//	None	None	None	9	0.00%	5	0%	0	0%	0	0%	2971	100%
S/MEAG/MEAG-GTC//	2,476	2,646	2,894	7	0.00%	2	0%	0	0%	0	0%	2974	100%
S/TVA/SOCO-DUK//	0	440	440	7	0.00%	3	0%	0	0%	1	0%	2972	100%
SS/GTC/MEAG-SC//	None	None	None	7	0.00%	2	0%	0	0%	0	0%	2974	100%
S/MEAG/JEA-DUK//	None	None	None	6	0.00%	4	0%	0	0%	0	0%	2972	100%
S/MEAG/JEA-SOCO//	None	None	None	6	0.00%	2	0%	0	0%	0	0%	2974	100%
S/MEAG/MEAG-SC/EG//	13	14	17	6	0.06%	0	0%	2	0%	0	0%	2974	100%
S/MEAG/SOCO-DUK//	None	None	None	6	0.00%	1	0%	0	0%	0	0%	2975	100%
SS/GTC/JEA-DUK//	None	None	None	6	0.00%	3	0%	0	0%	0	0%	2973	100%
S/SC/SOCO-DUK//	0	2,336	2,817	5	0.00%	2	0%	0	0%	26	1%	2948	99%
S/DUK/CPL-SC/EG//	0	95	427	4	0.01%	1	0%	0	0%	350	12%	2625	88%
S/DUK/SC/EG-DUK//	0	650	650	4	0.00%	1	0%	0	0%	148	5%	2827	95%
S/SC/DUK-SC/EG//	752	2,078	3,782	4	0.00%	1	0%	0	0%	0	0%	2975	100%
S/SC/EG/SC/EG-DUK//	697	761	854	4	0.00%	1	0%	0	0%	0	0%	2975	100%
S/DUK/SC-CPL//	0	2,901	2,901	3	0.00%	1	0%	0	0%	39	1%	2936	99%
S/MEAG/GTC-FPC//	None	None	None	3	0.00%	1	0%	0	0%	0	0%	2975	100%
S/MEAG/JEA-GTC//	None	None	None	3	0.00%	1	0%	0	0%	0	0%	2975	100%
S/MEAG/SC/EG-JEA//	None	None	None	3	0.00%	1	0%	0	0%	0	0%	2975	100%
S/SC/DUK-SOCO//	2,919	3,400	3,697	3	0.00%	1	0%	0	0%	0	0%	2975	100%

Appendix A (continued)

Segment	ATC			MWs	Loading Factor	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max			Intervals	%	Intervals	%	Intervals	%	Intervals	%
S/SC/SCEG-CPLE//	485	1,765	3,067	3	0.00%	1	0%	0	0%	0	0%	2975	100%
SS/GTC/JEA-MEAG//	None	None	None	3	0.00%	1	0%	0	0%	0	0%	2975	100%
SS/GTC/MEAG-FPC//	None	None	None	3	0.00%	1	0%	0	0%	0	0%	2975	100%
S/MEAG/SCEG-MEAG//	8	15	17	2	0.02%	0	0%	1	0%	0	0%	2975	100%
S/SCEG/SC-SOCO//	1,266	6,073	6,309	2	0.00%	1	0%	0	0%	0	0%	2975	100%
S/TVA/CPLW-AECI//	0	308	308	2	0.00%	1	0%	0	0%	25	1%	2950	99%
S/SC/CPLE-SCEG//	0	1,921	3,572	1	0.00%	1	0%	0	0%	58	2%	2917	98%
F/FPC/FPC-FPC/FPC-FPCS/	2,225	3,691	4,164	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/FPC-GVL//	0	185	379	0	0.00%	0	0%	0	0%	4	0%	2972	100%
F/FPC/FPC-SEC/FPC-SSN/	0	1,068	1,587	0	0.00%	0	0%	0	0%	24	1%	2952	99%
F/FPC/GVL-FPC//	153	365	419	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/GVL-FPC/GVL-FPCS/	153	365	419	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/GVL-SEC/GVL-SSN/	173	367	412	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/GVL-SOCO//	0	184	259	0	0.00%	0	0%	0	0%	480	16%	2496	84%
F/FPC/GVL-TEC//	173	367	414	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/SEC-FPC/SSN-FPC/	0	866	1,159	0	0.00%	0	0%	0	0%	6	0%	2970	100%
F/FPC/SEC-FPC/SSN-FPCS/	0	866	1,159	0	0.00%	0	0%	0	0%	6	0%	2970	100%
F/FPC/SEC-FPC/SSO-FPC/	216	688	1,006	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/SEC-FPC/SSO-FPCS/	216	688	1,006	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/SEC-GVL/SSN-GVL/	114	186	380	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/SEC-GVL/SSO-GVL/	113	185	380	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/SEC-SEC/SSO-SSN/	255	879	1,126	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/SEC-SOCO/SSN-SOCO/	0	184	259	0	0.00%	0	0%	0	0%	480	16%	2496	84%
F/FPC/SEC-SOCO/SSO-SOCO/	0	184	259	0	0.00%	0	0%	0	0%	480	16%	2496	84%
F/FPC/SEC-TEC/SSN-TEC/	496	1,090	1,485	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/SEC-TEC/SSO-TEC/	255	879	1,126	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/SOCO-FPC/SOCO-FPCS/	0	367	493	0	0.00%	0	0%	0	0%	12	0%	2964	100%
F/FPC/SOCO-GVL//	0	179	364	0	0.00%	0	0%	0	0%	12	0%	2964	100%
F/FPC/SOCO-SEC/SOCO-SSN/	0	367	493	0	0.00%	0	0%	0	0%	12	0%	2964	100%
F/FPC/TEC-FPC/TEC-FPCS/	0	2,601	3,204	0	0.00%	0	0%	0	0%	8	0%	2968	100%
F/FPC/TEC-GVL//	0	185	380	0	0.00%	0	0%	0	0%	20	1%	2956	99%
F/FPC/TEC-SEC-TEC-SSN/	0	1,069	1,588	0	0.00%	0	0%	0	0%	20	1%	2956	99%
F/JEA/JEA-SEC/JEA-SSN/	95	518	518	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/JEA/SEC-JEA/SSN-JEA/	168	487	487	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/JEA/SEC-SOCO/SSN-SOCO/	33	522	637	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/JEA/SOCO-SEC/SOCO-SSN/	365	502	522	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/SEC/FPC-JEA//	0	597	637	0	0.00%	0	0%	0	0%	24	1%	2952	99%
F/SEC/FPC-SEC/FPC-SSN/	0	1,068	1,587	0	0.00%	0	0%	0	0%	24	1%	2952	99%
F/SEC/JEA-FPC//	213	637	637	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/SEC/JEA-SEC/JEA-SSN/	213	637	637	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/SEC/SEC-FPC/SSN-FPC/	0	866	1,159	0	0.00%	0	0%	0	0%	6	0%	2970	100%
F/SEC/SEC-FPC/SSO-FPC/	216	688	1,006	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/SEC/SEC-JEA/SSN-JEA/	168	597	637	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/SEC/SEC-TEC/SSO-TEC/	255	729	729	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/SEC/TEC-FPC//	0	721	729	0	0.00%	0	0%	0	0%	8	0%	2968	100%
F/SEC/TEC-SEC/TEC-SSO/	0	345	729	0	0.00%	0	0%	0	0%	20	1%	2956	99%
F/TEC/SEC-FPC/SSO-FPC/	0	729	729	0	0.00%	0	0%	0	0%	20	1%	2956	99%
F/TEC/SEC-TEC/SSO-TEC/	255	729	729	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/TEC/TEC-SEC/TEC-SSO/	0	345	729	0	0.00%	0	0%	0	0%	20	1%	2956	99%
P/LGEE/TVA-LGEE//	267	1,421	1,424	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/CPL/CPLW-DUK//	708	1,180	1,632	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/CPL/CPLW-TVA//	0	308	308	0	0.00%	0	0%	0	0%	20	1%	2956	99%
S/CPL/DUK-CPLW//	0	801	930	0	0.00%	0	0%	0	0%	101	3%	2875	97%
S/CPL/SC-DUK//	822	2,669	4,639	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/CPL/SCEG-DUK//	0	816	816	0	0.00%	0	0%	0	0%	82	3%	2894	97%
S/CPL/SCEG-SC//	543	816	816	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/CPL/TVA-CPLW//	0	308	308	0	0.00%	0	0%	0	0%	54	2%	2922	98%
S/DUK/CPLW-DUK//	0	4,261	6,071	0	0.00%	0	0%	0	0%	65	2%	2911	98%
S/DUK/CPLW-SC//	0	1,043	1,243	0	0.00%	0	0%	0	0%	131	4%	2845	96%
S/DUK/CPLW-SCEG//	0	95	427	0	0.00%	0	0%	0	0%	293	10%	2683	90%

Appendix A (continued)

Segment	ATC			MWs	Loading Factor	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max			Intervals	%	Intervals	%	Intervals	%	Intervals	%
S/DUK/CPLW-SOCO//	0	1,051	1,243	0	0.00%	0	0%	0	0%	114	4%	2862	96%
S/DUK/CPLW-TVA//	0	692	692	0	0.00%	0	0%	0	0%	20	1%	2956	99%
S/DUK/DUK-CPLW//	0	454	454	0	0.00%	0	0%	0	0%	104	3%	2872	97%
S/DUK/SC-CPLW//	0	454	454	0	0.00%	0	0%	0	0%	124	4%	2852	96%
S/DUK/SCEG-CPLE//	0	650	650	0	0.00%	0	0%	0	0%	98	3%	2878	97%
S/DUK/SCEG-CPLW//	0	454	454	0	0.00%	0	0%	0	0%	101	3%	2875	97%
S/DUK/SCEG-SC//	254	650	650	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/DUK/SCEG-SOCO//	0	650	650	0	0.00%	0	0%	0	0%	4	0%	2972	100%
S/DUK/SCEG-TVA//	0	650	650	0	0.00%	0	0%	0	0%	8	0%	2968	100%
S/DUK/SC-SCEG//	0	98	427	0	0.00%	0	0%	0	0%	176	6%	2800	94%
S/DUK/SC-TVA//	0	692	692	0	0.00%	0	0%	0	0%	8	0%	2968	100%
S/DUK/SOCO-CPLW//	0	454	454	0	0.00%	0	0%	0	0%	185	6%	2791	94%
S/DUK/SOCO-TVA//	0	692	692	0	0.00%	0	0%	0	0%	21	1%	2955	99%
S/DUK/TVA-CPLW//	0	454	454	0	0.00%	0	0%	0	0%	80	3%	2896	97%
S/DUK/TVA-SOCO//	92	692	692	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/MEAG/MEAG-TVA//	0	100	129	0	0.00%	0	0%	0	0%	4	0%	2972	100%
S/MEAG/TVA-MEAG//	39	67	106	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SC/CPLW-DUK//	3,508	3,738	4,093	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SC/DUK-CPLE//	3,277	3,632	3,862	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SC/SCEG-DUK//	862	3,068	3,322	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SC/SCEG-SOCO//	0	2,438	3,105	0	0.00%	0	0%	0	0%	2	0%	2974	100%
S/SCEG/CPLW-DUK//	17	317	411	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SCEG/CPLW-SC//	17	317	411	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SCEG/DUK-CPLE//	0	93	157	0	0.00%	0	0%	0	0%	20	1%	2956	99%
S/SCEG/DUK-SC//	0	93	157	0	0.00%	0	0%	0	0%	37	1%	2939	99%
S/SCEG/DUK-SOCO//	0	93	157	0	0.00%	0	0%	0	0%	12	0%	2964	100%
S/SCEG/SC-CPLE//	598	692	992	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SCEG/SC-DUK//	697	761	854	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SCEG/SCEG-CPLE//	598	692	992	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SCEG/SCEG-SOCO//	845	2,940	5,258	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SCEG/SOCO-DUK//	0	761	854	0	0.00%	0	0%	0	0%	33	1%	2943	99%
S/TVA/AECI-LGEE//	0	50	512	0	0.00%	0	0%	0	0%	1,115	37%	1861	63%
S/TVA/CPLW-DUK//	0	308	308	0	0.00%	0	0%	0	0%	1	0%	2975	100%
S/TVA/CPLW-LGEE//	0	308	308	0	0.00%	0	0%	0	0%	13	0%	2963	100%
S/TVA/CPLW-SOCO//	0	308	308	0	0.00%	0	0%	0	0%	1	0%	2975	100%
S/TVA/DUK-CPLW//	0	308	308	0	0.00%	0	0%	0	0%	1	0%	2975	100%
S/TVA/DUK-LGEE//	0	426	426	0	0.00%	0	0%	0	0%	13	0%	2963	100%
S/TVA/LGEE-AECI//	0	725	725	0	0.00%	0	0%	0	0%	24	1%	2952	99%
S/TVA/SOCO-CPLW//	0	308	308	0	0.00%	0	0%	0	0%	1	0%	2975	100%
S/TVA/SOCO-LGEE//	0	2,995	3,000	0	0.00%	0	0%	0	0%	13	0%	2963	100%
S/TVA/TVA-AECI//	0	725	725	0	0.00%	0	0%	0	0%	24	1%	2952	99%
S/TVA/TVA-LGEE//	0	2,698	3,000	0	0.00%	0	0%	0	0%	16	1%	2960	99%
SS/GTC/DUK-GTC//	0	505	648	0	0.00%	0	0%	0	0%	16	1%	2960	99%
SS/GTC/GTC-GTC//	25,435	25,755	25,755	0	0.00%	0	0%	0	0%	0	0%	2976	100%
SS/GTC/MEAG-GTC//	8,499	8,745	8,992	0	0.00%	0	0%	0	0%	0	0%	2976	100%
SS/GTC/SC-GTC//	65	158	191	0	0.00%	0	0%	0	0%	0	0%	2976	100%
SS/GTC/TVA-GTC//	68	309	374	0	0.00%	0	0%	0	0%	0	0%	2976	100%
SS/SOCO/DUK-SC/MULTIPATHALIAS/	0	158	540	0	0.00%	0	0%	0	0%	63	2%	2913	98%
SS/SOCO/DUK-TVA/MULTIPATHALIAS/	309	804	1,031	0	0.00%	0	0%	0	0%	0	0%	2976	100%
SS/SOCO/SC-DUK/MULTIPATHALIAS/	19	346	488	0	0.00%	0	0%	0	0%	0	0%	2976	100%
SS/SOCO/SCEG-DUK/MULTIPATHALIAS/	19	125	149	0	0.00%	0	0%	0	0%	0	0%	2976	100%
SS/SOCO/SCEG-SC/MULTIPATHALIAS/	0	119	149	0	0.00%	0	0%	0	0%	63	2%	2913	98%
SS/SOCO/SCEG-SOCO//	65	125	149	0	0.00%	0	0%	0	0%	0	0%	2976	100%
SS/SOCO/SCEG-TVA/MULTIPATHALIAS/	65	125	149	0	0.00%	0	0%	0	0%	0	0%	2976	100%
SS/SOCO/SC-SCEG/MULTIPATHALIAS/	1	119	143	0	0.00%	0	0%	0	0%	17	1%	2959	99%
SS/SOCO/TVA-DUK/MULTIPATHALIAS/	19	481	772	0	0.00%	0	0%	0	0%	0	0%	2976	100%