MONTHLY AUDIT REPORT ON THE SOUTHEAST ENERGY EXCHANGE MARKET

FOR

July 2024

Prepared by:

POTOMAC ECONOMICS

Independent Market Auditor

August 19, 2024

I. OVERVIEW

This is the July 2024 Auditor report on the Southeast Energy Exchange Market (SEEM). SEEM is a regional 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 operated since November 2022 and now has 24 members.[1]

Trading volumes in July were slightly less than 68,000 MWh, higher than the 60,000 MWh in June and lower than the 12-month rolling average of 76,000 MWh. Trading among SEEM members relies on individual transmission 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, 4 percent of the time availability was zero and 94 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 21,000 MWh of potential economic exchanges were left uncleared in July, somewhat higher than in recent months. As explained herein, 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 member joining in July 2023 are: Seminole Electric Cooperative; Tampa Electric Company; Duke Energy Florida; Florida Power Corporation; TEA Gainesville Regional 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 July.

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 properly 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 July 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 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 July 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 was a single change to participant-specific constraints between two participants in July to become trading partners.

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 67,700 MWh of energy in July, which is higher than June (and down significantly from the all-time high in March of over 100,000 MWh). Figure 1 shows the daily SEEM bids and offers for July. 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
July 2024
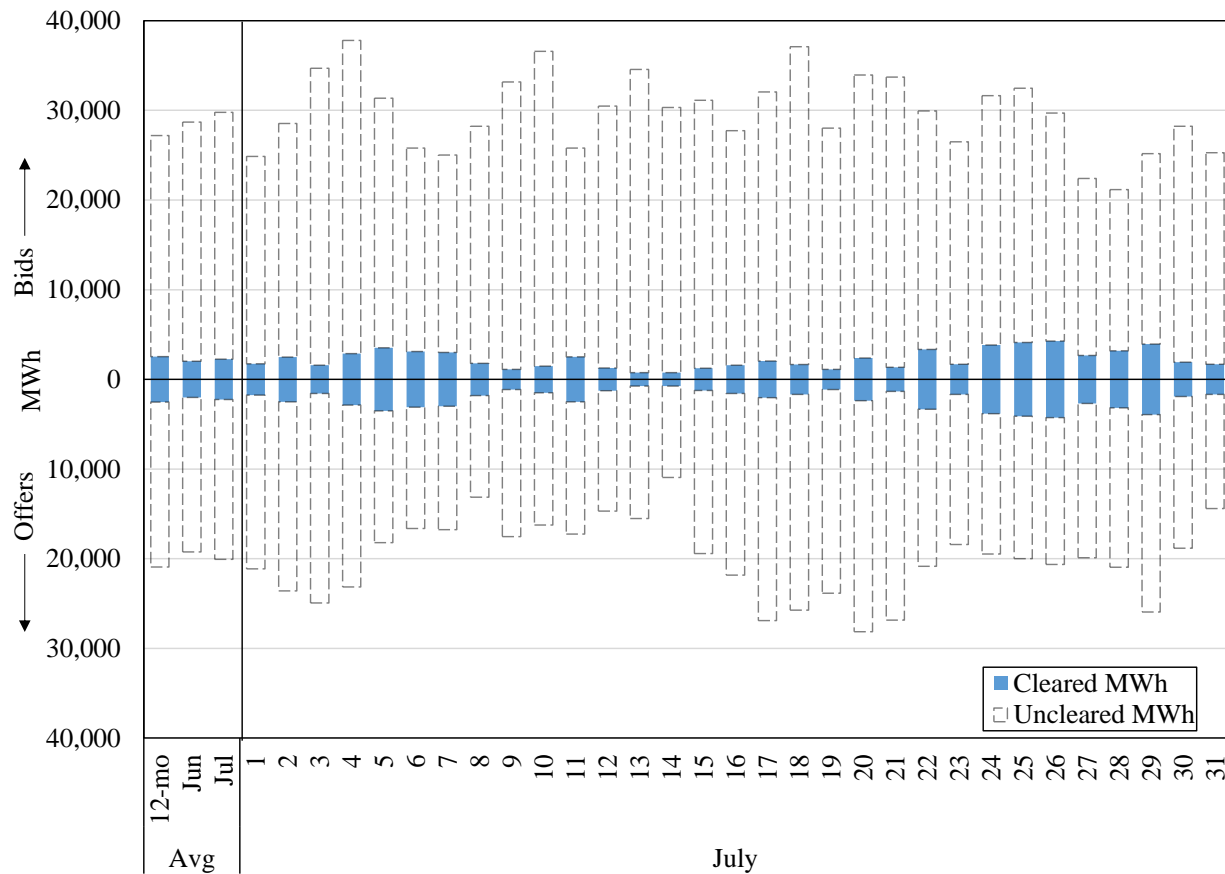
The left side columns show activity relative to the previous month and relative to the 12-month rolling average. As the left-side monthly and the 12-month average bars show, total liquidity

(cleared and uncleared bids and offers) was slightly higher than both the 12-month average June's level.

The individual days show some variation across the month. This variability is better pictured in Figure 2, where we show only cleared transactions and demand (as measured by Degree Days). Degree Days are common measure of daily temperature levels that measure the demand for cooling and heating.[2]

Figure 2: Cleared Transactions and Demand
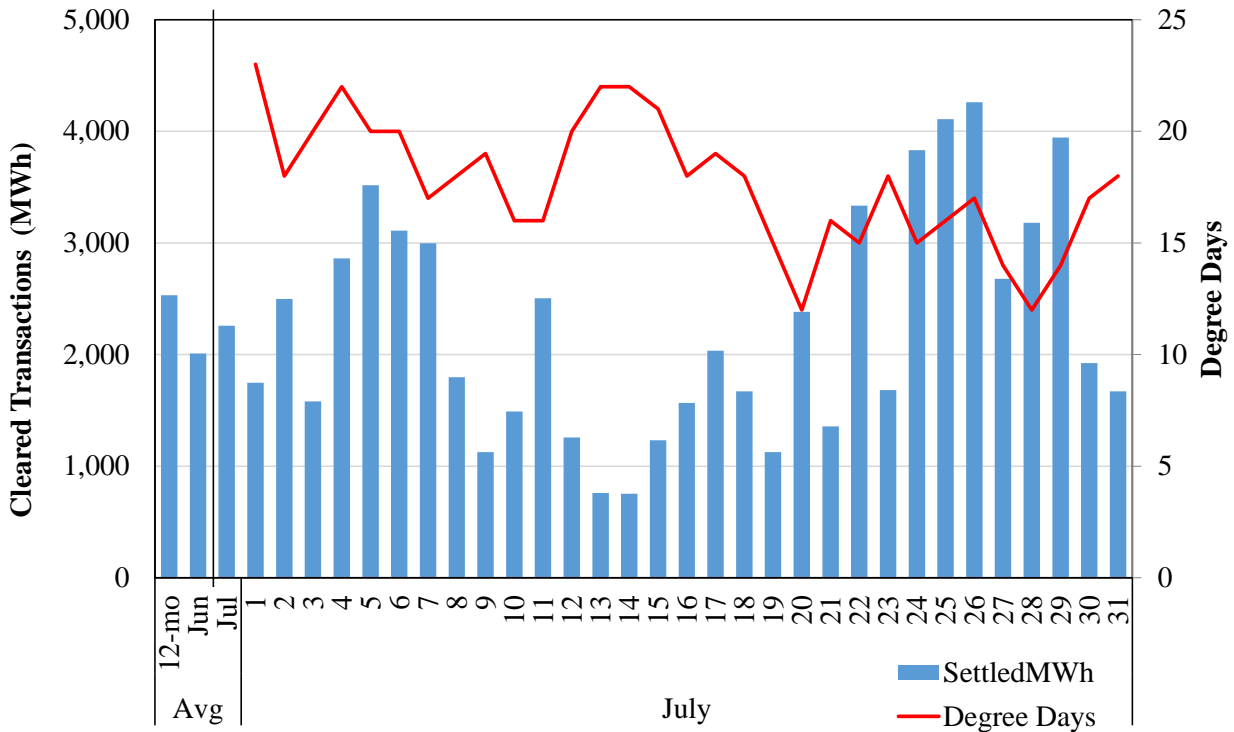
The purpose of showing daily volumes together with Degree Days is to evaluate SEEM activity as demand fluctuates. We had noticed in previous months liquidity declining during previous periods of high demand driven by extreme weather, for example during extreme weather in December 2022. Hence, we find it useful to determine how activity changes when underlying system demand changes. The Figure suggests a negative relation between high Degree Days and transaction volume, especially after the first week of July. However, volume was relatively high in the first week while Degree Days were also relatively high.

---

[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

To further measure the relationship, we calculated the correlation coefficient[3] between the cleared transactions and Degree Days found a statistically significant[4] value of -0.43. This supports our previous anecdotal observations that high demand tends to decrease trading activity in SEEM. We also calculated the correlation between Degree Days and offered quantities, to test the further hypothesis that the decline in activity during high demand days is linked to supply constraints at those times. The correlation was -35 and statistically significant, supporting the hypothesis. Finally, the correlation of DD and bid quantities was positive, but not statistically significant. Therefore, overall, the data shows the variability is driven in part by demand and is negatively correlated and principally due to less offered supply during high demand periods. This is likely explained by smaller amounts of unloaded capacity due to internal utility obligations to serve its integrated load at high demand periods.

Figure 3 shows the cleared trades on an historical monthly basis. It shows a variable volume of cleared trades with a notable increase in early 2024 that has fallen off to levels comparable to last year.

Figure 3: Volume of Cleared Trades
July 2023 -July 2024

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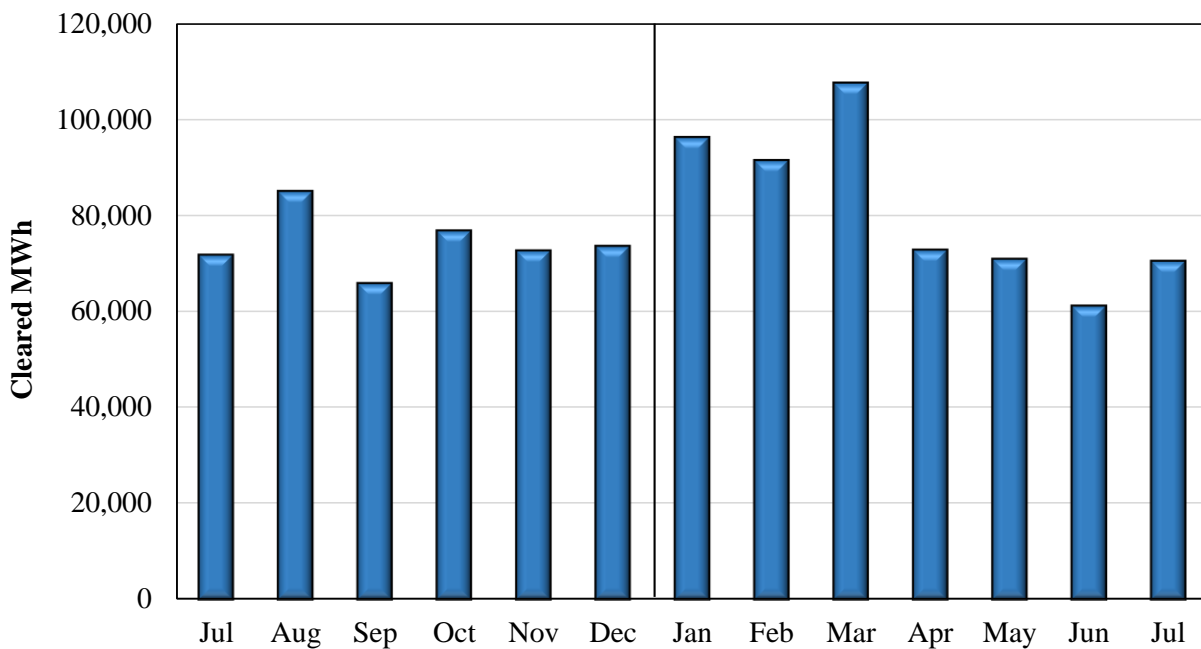
[3] The correlation coefficient is a statistic that measures the relationship between two variables (in our case the cleared volumes and Degree Days. A positive correlation coefficient indicates the variables tend to move in the same direction while a negative correlation coefficient indicates the variables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

[4] Statistically significant means the value of the calculated correlation coefficient is not likely to be the result of random chance.

Our next evaluation is a monthly comparison of bids, offers, and prices and is shown in Figure 4. It shows the monthly total activity in the SEEM market, including both cleared and uncleared bids and offers. The purpose is to summarize the trends 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
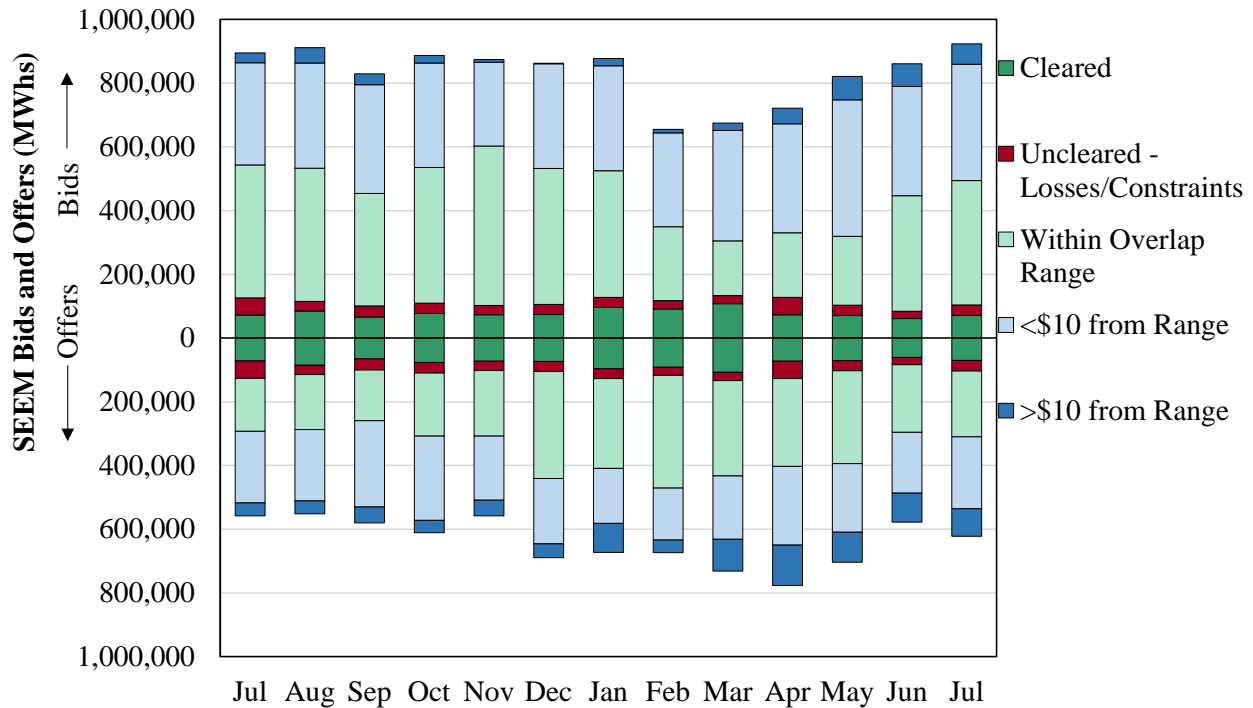
Because the uncleared bids and offers in the blue bars are unlikely to clear, a movement of these quantities closer to the expected clearing range signals an improvement in market liquidity.

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 (around 800,000 MWh) than offers (around 600,00 MWh). Since the end of 2023, liquidity declined slightly, even though cleared matches increased somewhat. Liquidity in June and July continued to skew toward buyers (bids > offers).

Like in previous months, we evaluated the uncleared bids and offers and 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
July 2024

Category		
Uncleared < $3/MWh	20,913	20%
Uncleared > $3/MWh	12,312	12%
Cleared	70,516	68%
Total	**103,741**	**100%**
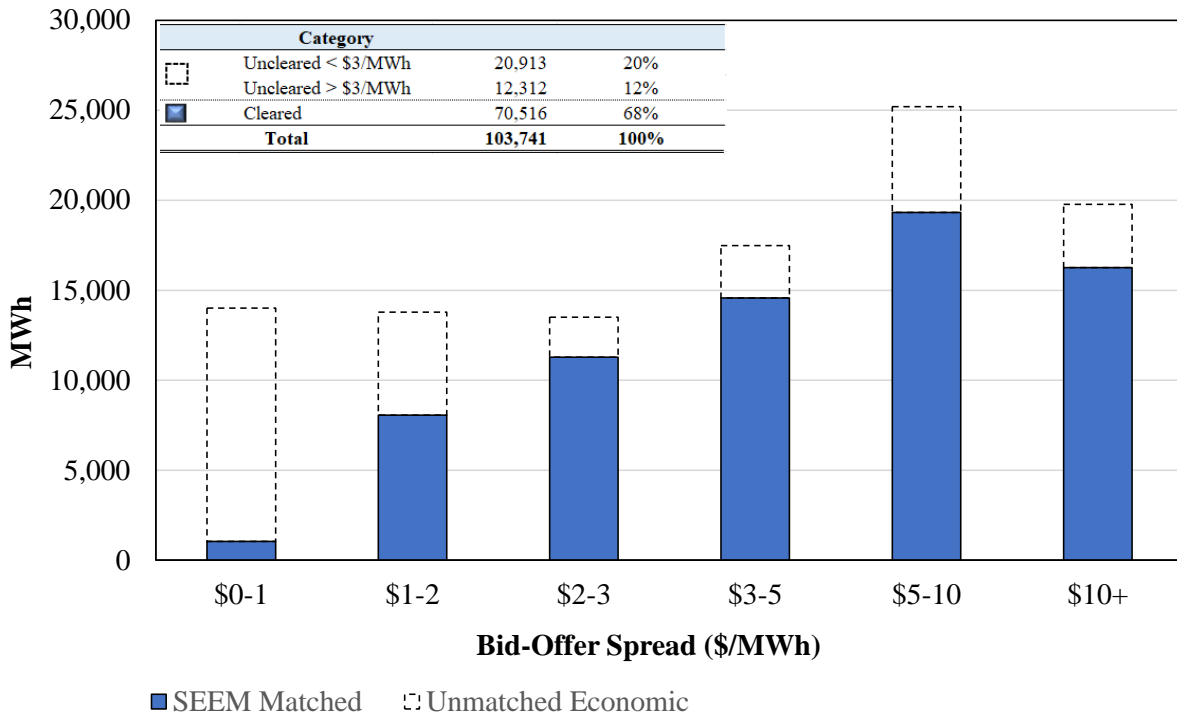
To understand why economic bids and offers may not have cleared, it is useful to examine the bid-offer spread. Average loss charges are roughly $2 per MWh, although some potential economic matches would incur higher loss costs. Therefore, in the inset table, we divide totals between bid-offer spreads above and below $3 per MWh. Those below $3 are very 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, 68 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 less than $3 per MWh.

Figure 6 shows more detail on the matched bids and offers by showing the matches by the largest market participants. Like the prior figure, 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.

Figure 6: Volumes of Matched Bids and Offers
July 2024
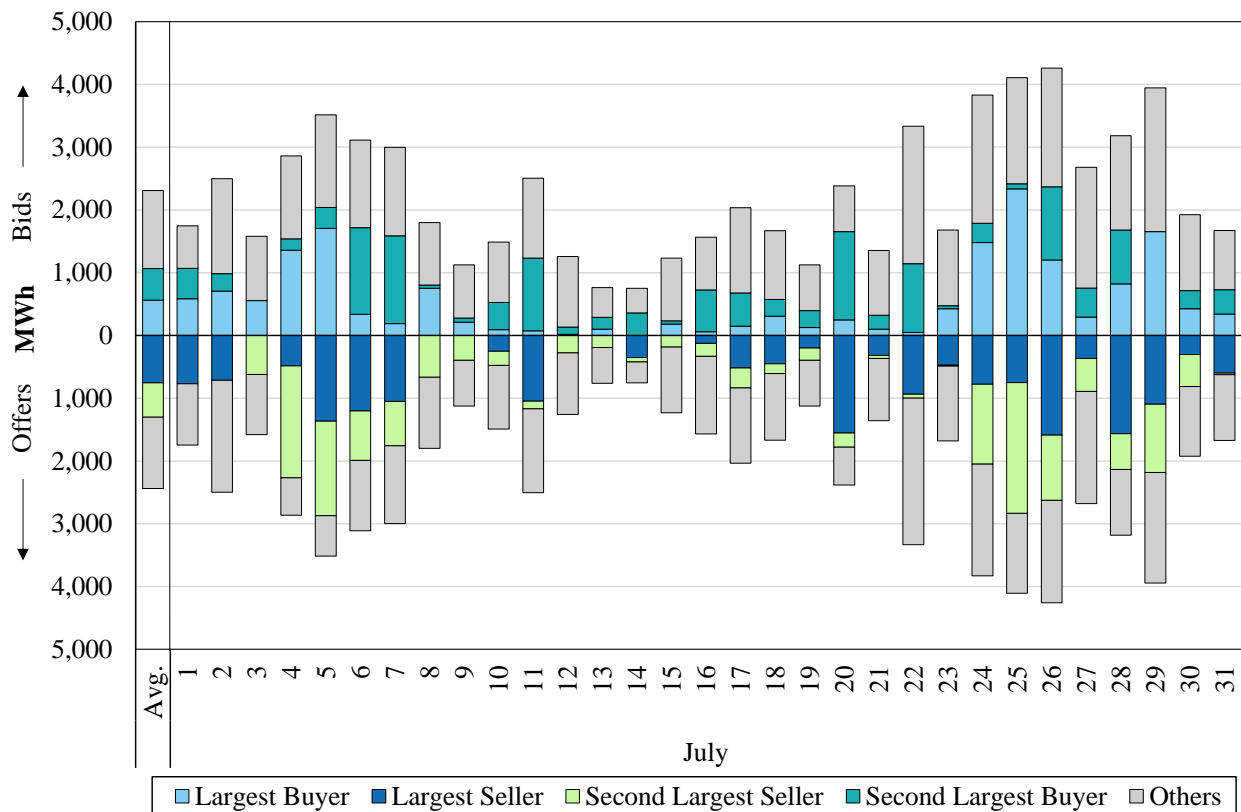
The figure shows certain buyers and sellers comprise significant shares of the transaction activity. For the month, 26 percent of the sales were made by a single seller and 24 percent of the purchases were made by a single buyer.

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 7 shows the monthly share of matched transaction 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 7: Seller Market Share Statistics
November 2022 – July 2024
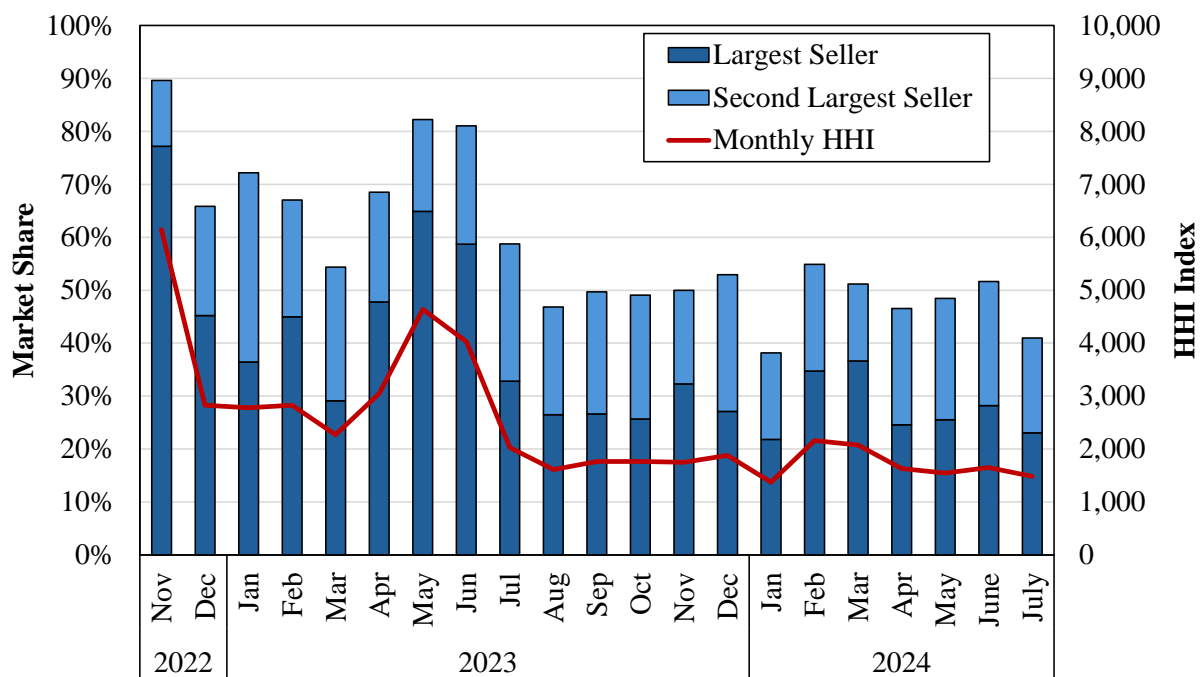
Not surprisingly, the share of the top seller, as well as the share of the top two, declined once the Florida participants fully joined in July 2023. The chart also shows the HHI has declined. The HHI is a measure of market concentration and is used to determine market competitiveness, often on a relative 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 x 100. A perfectly competitive market where no firm has an appreciable market share, the HHI is close to 0. 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 July and has remained close to 1800. Although this is close to the highly concentrated range, it has been falling. Figure 8 shows the buyer concentration.

Figure 8: Buyer Market Share Statistics
November 2022 – July 2024
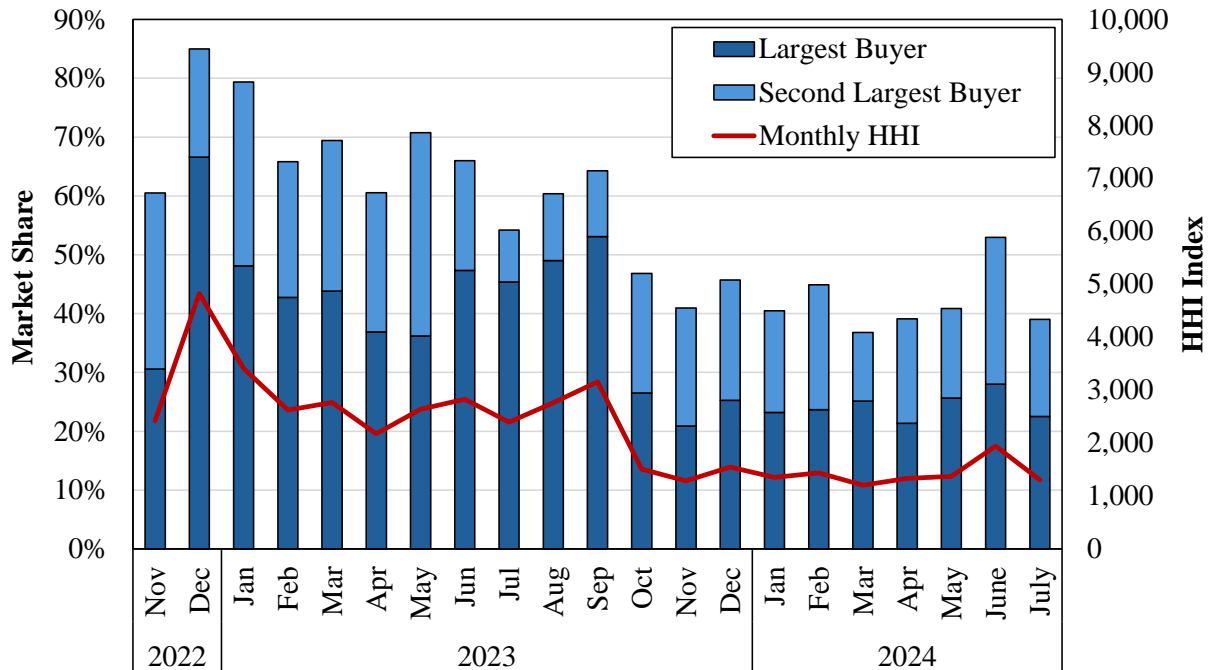
The statistics show a trend similar to the seller market shares. The entry of Florida participants coincided with a decline in buyer concentration, although with a lag in the decline in the share of the largest buyers. These declines, together with the uptrend in matched trades are indicative of a market evolving to greater liquidity and competitiveness.

2. Network Usage

In this subsection, we report on the usage of the SEEM network. Figure 9 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 9: Monthly Clearing Prices and Natural Gas Costs
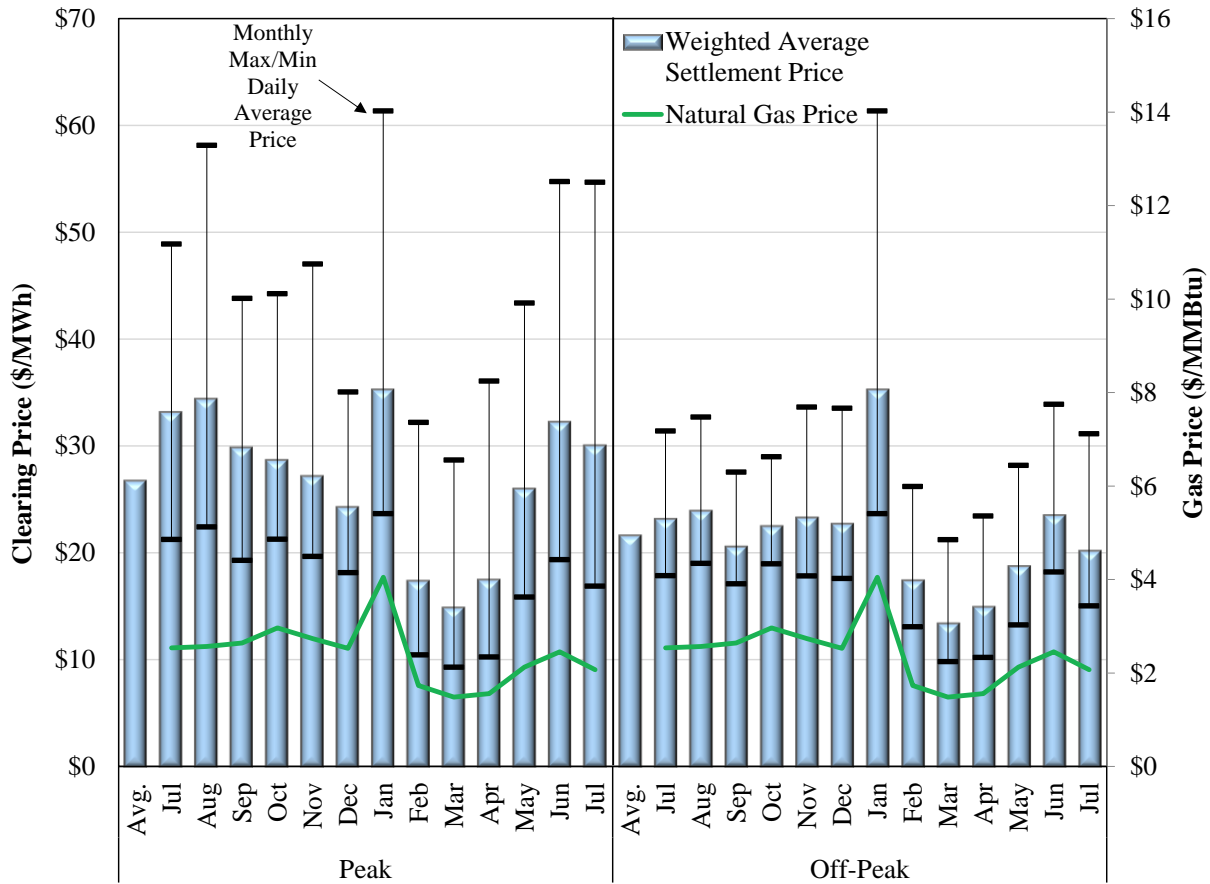
The figure shows that both peak and off-peak prices declined in July relative to June and were close to the 12-month average. The whisker bars for each month show that the value of transactions can vary significantly, mainly because transmission constraints can contribute to higher prices between different 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 July, there were 259 segments used in SEEM for which an ATC value was posted, and another 26 segments used for which no ATC is posted. These are segments that were available on an unlimited basis.[5] There were 76 segment in SEEM not used. We calculate total segment (MWh) usage and for segments with 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

---

[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.

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 1 shows an excerpt of our statistics. The table displays the segments that had at least 1,000 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.

Table 1: Statistics for Most Utilized SEEM Segments
July 2024

Segment	ATC			MWhs	Loading Factor	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max			Intervals	%	Intervals	%	Intervals	%	Intervals	%
Column1	Colum	Colum	Colum	Colum	Colum	Colum	Colum	Colum	olum	Colum	olum	Colum	olum
F/FPC/FPC-SOCO//	0	0	263	12,380	17.37%	534	18%	77	3%	1,584	53%	781	26%
F/TEC/TEC-FPC//	1,027	2,659	3,436	11,869	0.64%	1,127	38%	0	0%	0	0%	1849	62%
S/TVA/TVA-DUK//	0	357	357	10,001	3.85%	259	9%	9	0%	35	1%	2673	90%
SS/SOCO/FL-SOCO//	76	651	1,380	9,662	1.92%	741	25%	0	0%	0	0%	2235	75%
S/DUK/TVA-DUK//	0	692	692	9,331	2.09%	252	8%	17	1%	243	8%	2464	83%
SS/SOCO/TVA-SOCO//	528	1,043	1,382	8,233	1.04%	270	9%	0	0%	0	0%	2706	91%
S/TVA/TVA-SOCO//	0	4,886	5,000	8,140	0.23%	263	9%	0	0%	19	1%	2694	91%
F/JEA/SOCO-JEA//	131	679	878	8,007	1.62%	1,135	38%	0	0%	0	0%	1841	62%
F/FPC/TEC-SOCO//	0	0	263	6,836	9.56%	572	19%	66	2%	1,584	53%	754	25%
S/SC/SOCO-SC//	0	551	2,269	6,131	1.40%	441	15%	0	0%	408	14%	2127	71%
SS/SOCO/SOCO-SOCO//	40,377	44,230	44,230	6,026	0.02%	320	11%	0	0%	0	0%	2656	89%
F/FPC/TEC-FPC//	1,076	2,713	3,485	5,033	0.26%	692	23%	0	0%	0	0%	2284	77%
SS/SOCO/FL-SC/MULTIPATHALIAS/	0	147	538	4,671	4.33%	328	11%	37	1%	45	2%	2566	86%
F/TEC/FPC-TEC//	0	1,456	3,243	3,933	0.36%	354	12%	0	0%	52	2%	2570	86%
F/FPC/FPC-TEC//	0	1,650	3,283	3,852	0.32%	348	12%	0	0%	28	1%	2600	87%
S/MEAG/SOCO-MEAG//	2,602	3,010	3,135	3,075	0.14%	198	7%	0	0%	0	0%	2778	93%
S/MEAG/SOCO-JEA//	None	None	None	2,435	0.00%	402	14%	0	0%	0	0%	2574	0%
SS/SOCO/SOCO-FL//	424	1,202	1,993	2,407	0.26%	359	12%	0	0%	0	0%	2617	88%
S/DUK/SOCO-DUK//	0	1,742	2,220	2,329	0.20%	179	6%	0	0%	249	8%	2548	86%
S/CPL/DUK-CPLE//	354	3,466	6,744	2,286	0.09%	175	6%	0	0%	0	0%	2801	94%
S/AECI/TVA-AECI//	0	784	1,023	2,171	0.40%	123	4%	0	0%	11	0%	2842	95%
P/LGEE/LGEE-TVA//	0	1,623	1,623	2,125	0.21%	162	5%	0	0%	184	6%	2630	88%
SS/GTC/SOCO-GTC//	12,668	13,378	14,615	2,085	0.02%	90	3%	0	0%	0	0%	2886	97%

---

[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.

The "Uncleared" category indicates that among these most utilized segments, many of them have over 94 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 2 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 July, there were 1,010,042 segment intervals.[8] The two circumstances (Cases (2) and (3)) when a segment is constrained occurred in more than 42,000 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 94 percent of all segment-intervals. The second most common case was case "Unavailable" (Case 3), where ATC was not sufficient to clear any SEEM transactions (4.2 percent of the time). The third most common case was "Partially Used" (Case 1), where the segment was partially used (about 1.4 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 (342).

Table 2: Summary of All Segments
July 2024

Segment	Case 1 Partially Used		Case 2 Fully Used		Case 3 Unavailable		Case 4 Uncleared	
	Intervals	%	Intervals	%	Intervals	%	Intervals	%
All Segments	14,415	1.4%	342	0.0%	42,876	4.2%	952,409	94.3%

Measuring transmission capacity congestion by adding Case 2 and 3, the percentage of constrained segment intervals declined to 4.2 percent in July from 2.5 percent in June). 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 on constrained segments can be gained from Table 3. It shows the 20 segments most often unavailable 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

---

[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 July, SEEM operated in all intervals. In addition, 10 Seminole Electric Cooperative segments became available in the model partway through the month. At the end of the month, the total was 361.

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 unconstrainted for SEEM activity.

Table 3: Most Constrained SEEM Segments
July 2024

Segment	ATC				Loading	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max	MWhs	Factor	Intervals	%	Intervals	%	Intervals	%	Intervals	%
S/MEAG/MEAG-SC//	0	2	61	2	0.06%	1	0%	1	0%	2,212	74%	762	26%
S/TVA/AECI-LGEE//	0	0	387	0	0.00%	0	0%	0	0%	1,737	58%	1239	42%
F/FPC/SEC-SOCO/SSO-SOCO/	0	0	263	0	0.00%	0	0%	0	0%	1,584	53%	1392	47%
F/FPC/FPC-SOCO//	0	0	263	12,380	17.37%	534	18%	77	3%	1,584	53%	781	26%
F/FPC/TEC-SOCO//	0	0	263	6,836	9.56%	572	19%	66	2%	1,584	53%	754	25%
F/FPC/SEC-SOCO/SSN-SOCO/	0	0	263	0	0.00%	0	0%	0	0%	1,584	53%	1392	47%
F/FPC/GVL-SOCO//	0	0	263	0	0.00%	0	0%	0	0%	1,584	53%	1392	47%
S/TVA/SOCO-LGEE//	0	306	2,647	0	0.00%	0	0%	0	0%	1,317	44%	1659	56%
S/TVA/DUK-LGEE//	0	321	357	0	0.00%	0	0%	0	0%	1,245	42%	1731	58%
S/TVA/TVA-LGEE//	0	347	2,622	0	0.00%	0	0%	0	0%	1,245	42%	1731	58%
S/TVA/CPLW-LGEE//	0	276	276	0	0.00%	0	0%	0	0%	1,241	42%	1735	58%
F/FPC/SEC-FPC/SSN-FPC/	0	136	1,158	0	0.00%	0	0%	0	0%	1,069	36%	1907	64%
F/FPC/SEC-FPC/SSN-FPCS/	0	136	1,158	0	0.00%	0	0%	0	0%	1,069	36%	1907	64%
S/DUK/SCEG-CPLW//	0	189	454	0	0.00%	0	0%	0	0%	886	30%	2090	70%
S/DUK/SC-CPLW//	0	188	454	0	0.00%	0	0%	0	0%	880	30%	2096	70%
S/DUK/SOCO-CPLW//	0	198	454	0	0.00%	0	0%	0	0%	871	29%	2105	71%
S/DUK/TVA-CPLW//	0	207	454	0	0.00%	0	0%	0	0%	867	29%	2109	71%
S/DUK/CPLE-CPLW//	0	215	454	10	0.01%	2	0%	0	0%	856	29%	2118	71%
S/DUK/DUK-CPLW//	0	248	454	0	0.00%	0	0%	0	0%	777	26%	2199	74%
S/TVA/AECI-TVA//	0	50	387	75	0.09%	5	0%	0	0%	724	24%	2247	76%

III. CONCLUSION

We reviewed the operation of SEEM for July 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 -- July 2024

Segment	ATC			MWhs	Loading Factor	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max			Intervals	%	Intervals	%	Intervals	%	Intervals	%
F/FPC/FPC-SOCO//	0	0	263	12,380	17.37%	534	18%	77	3%	1,584	53%	781	26%
F/TEC/TEC-FPC//	1,027	2,659	3,436	11,869	0.64%	1,127	38%	0	0%	0	0%	1849	62%
S/TVA/TVA-DUK//	0	357	357	10,001	3.85%	259	9%	9	0%	35	1%	2673	90%
SS/SOCO/FL-SOCO//	76	651	1,380	9,662	1.92%	741	25%	0	0%	0	0%	2235	75%
S/DUK/TVA-DUK//	0	692	692	9,331	2.09%	252	8%	17	1%	243	8%	2464	83%
SS/SOCO/TVA-SOCO//	528	1,043	1,382	8,233	1.04%	270	9%	0	0%	0	0%	2706	91%
S/TVA/TVA-SOCO//	0	4,886	5,000	8,140	0.23%	263	9%	0	0%	19	1%	2694	91%
F/JEA/SOCO-JEA//	131	679	878	8,007	1.62%	1,135	38%	0	0%	0	0%	1841	62%
F/FPC/TEC-SOCO//	0	0	263	6,836	9.56%	572	19%	66	2%	1,584	53%	754	25%
S/SC/SOCO-SC//	0	551	2,269	6,131	1.40%	441	15%	0	0%	408	14%	2127	71%
SS/SOCO/SOCO-SOCO//	40,377	44,230	44,230	6,026	0.02%	320	11%	0	0%	0	0%	2656	89%
F/FPC/TEC-FPC//	1,076	2,713	3,485	5,033	0.26%	692	23%	0	0%	0	0%	2284	77%
SS/SOCO/FL-SC/MULTIPATHALIAS/	0	147	538	4,671	4.33%	328	11%	37	1%	45	2%	2566	86%
F/TEC/FPC-TEC//	0	1,456	3,243	3,933	0.36%	354	12%	0	0%	52	2%	2570	86%
F/FPC/FPC-TEC//	0	1,650	3,283	3,852	0.32%	348	12%	0	0%	28	1%	2600	87%
S/MEAG/SOCO-MEAG//	2,602	3,010	3,135	3,075	0.14%	198	7%	0	0%	0	0%	2778	93%
S/MEAG/SOCO-JEA//	None	None	None	2,435	0.00%	402	14%	0	0%	0	0%	2574	0%
SS/SOCO/SOCO-FL//	424	1,202	1,993	2,407	0.26%	359	12%	0	0%	0	0%	2617	88%
S/DUK/SOCO-DUK//	0	1,742	2,220	2,329	0.20%	179	6%	0	0%	249	8%	2548	86%
S/CPL/DUK-CPLE//	354	3,466	6,744	2,286	0.09%	175	6%	0	0%	0	0%	2801	94%
S/AECI/TVA-AECI//	0	784	1,023	2,171	0.40%	123	4%	0	0%	11	0%	2842	95%
P/LGEE/LGEE-TVA//	0	1,623	1,623	2,125	0.21%	162	5%	0	0%	184	6%	2630	88%
SS/GTC/SOCO-GTC//	12,668	13,378	14,615	2,085	0.02%	90	3%	0	0%	0	0%	2886	97%
S/SCEG/SCEG-SOCO//	286	3,218	5,255	1,960	0.08%	224	8%	0	0%	0	0%	2752	92%
S/DUK/DUK-SOCO//	0	1,667	2,335	1,741	0.15%	295	10%	0	0%	35	1%	2646	89%
SS/SOCO/SOCO-DUK//	1	442	762	1,297	0.40%	40	1%	2	0%	8	0%	2926	98%
S/CPL/SCEG-CPLE//	0	618	618	1,249	0.33%	214	7%	0	0%	369	12%	2393	80%
SS/GTC/SCEG-GTC//	0	68	98	1,213	2.22%	48	2%	40	1%	24	1%	2864	96%
S/DUK/TVA-CPLE//	0	692	692	1,202	0.29%	69	2%	1	0%	393	13%	2513	84%
S/MEAG/FPC-SOCO//	None	None	None	1,176	0.00%	187	6%	0	0%	0	0%	2789	0%
SS/GTC/FPC-GTC//	0	409	867	1,160	0.39%	50	2%	0	0%	4	0%	2922	98%
S/CPL/TVA-DUK//	96	276	276	1,154	0.57%	94	3%	0	0%	0	0%	2882	97%
S/AECI/AECI-TVA//	0	68	824	1,122	0.82%	113	4%	15	1%	425	14%	2423	81%
S/TVA/LGEE-AECI//	0	600	600	1,084	0.26%	57	2%	0	0%	55	2%	2864	96%
S/MEAG/MEAG-SOCO//	2,601	2,714	3,032	1,056	0.05%	58	2%	0	0%	0	0%	2918	98%
S/CPL/CPLE-DUK//	1,384	6,028	7,128	1,035	0.03%	79	3%	0	0%	0	0%	2897	97%
SS/GTC/DUK-GTC//	0	370	532	942	0.36%	57	2%	0	0%	46	2%	2873	97%
S/SC/DUK-SC//	602	2,390	3,232	896	0.05%	149	5%	0	0%	0	0%	2827	95%
SS/SOCO/SOCO-SC//	0	147	538	855	0.79%	65	2%	8	0%	44	1%	2859	96%
S/TVA/TVA-CPLW//	0	276	276	805	0.40%	38	1%	0	0%	19	1%	2919	98%
S/MEAG/FPC-DUK//	None	None	None	758	0.00%	105	4%	0	0%	0	0%	2871	0%
S/DUK/DUK-SC//	0	1,122	2,578	723	0.09%	131	4%	0	0%	160	5%	2685	90%
F/JEA/JEA-SOCO//	3	582	751	720	0.17%	215	7%	0	0%	4	0%	2757	93%
S/TVA/AECI-SOCO//	0	50	387	698	0.80%	68	2%	18	1%	668	22%	2222	75%
S/TVA/SOCO-AECI//	0	600	600	694	0.18%	57	2%	0	0%	159	5%	2760	93%
S/DUK/CPLE-SOCO//	0	2,075	2,335	681	0.05%	57	2%	0	0%	3	0%	2916	98%
S/DUK/CPLW-CPLE//	0	1,093	1,243	660	0.10%	66	2%	0	0%	422	14%	2488	84%
SS/SOCO/SCEG-FL/MULTIPATHALIAS/	0	125	178	640	0.64%	113	4%	3	0%	4	0%	2856	96%
S/SCEG/SOCO-CPLE//	0	632	826	626	0.13%	151	5%	0	0%	6	0%	2819	95%
S/MEAG/DUK-JEA//	None	None	None	625	0.00%	134	5%	0	0%	0	0%	2842	0%
S/SCEG/SCEG-CPLE//	203	632	826	623	0.13%	95	3%	0	0%	0	0%	2881	97%
SS/SOCO/DUK-FL/MULTIPATHALIAS/	49	587	849	614	0.14%	122	4%	0	0%	0	0%	2854	96%
S/CPL/CPLE-SCEG//	0	363	363	599	0.24%	63	2%	0	0%	68	2%	2845	96%
S/SCEG/CPLE-SOCO//	183	377	549	599	0.21%	63	2%	0	0%	0	0%	2913	98%
SS/SOCO/TVA-FL/MULTIPATHALIAS/	424	1,042	1,382	595	0.08%	67	2%	0	0%	0	0%	2909	98%
SS/SOCO/FL-DUK/MULTIPATHALIAS/	1	418	752	515	0.17%	91	3%	0	0%	8	0%	2877	97%
SS/SOCO/SCEG-SOCO//	0	125	178	504	0.51%	39	1%	10	0%	4	0%	2923	98%
S/DUK/CPLW-DUK//	0	1,093	1,243	494	0.07%	27	1%	1	0%	201	7%	2747	92%

Appendix A (continued)

Segment	ATC			MWhs	Loading Factor	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max			Intervals	%	Intervals	%	Intervals	%	Intervals	%
S/TVA/LGEE-SOCO//	0	2,648	2,648	439	0.02%	38	1%	0	0%	71	2%	2867	96%
S/MEAG/MEAG-JEA//	0	182	332	409	0.31%	58	2%	0	0%	25	1%	2893	97%
SS/GTC/FPC-SC//	None	None	None	399	0.00%	51	2%	0	0%	0	0%	2925	0%
S/TVA/DUK-AECI//	0	357	357	383	0.16%	34	1%	0	0%	155	5%	2787	94%
S/CPL/SC-CPLE//	0	1,474	2,780	382	0.04%	48	2%	0	0%	346	12%	2582	87%
SS/SOCO/FL-SCEG/MULTIPATHALIAS/	0	72	83	379	0.73%	91	3%	4	0%	5	0%	2876	97%
S/DUK/SOCO-CPLE//	0	1,635	2,220	372	0.04%	50	2%	0	0%	434	15%	2492	84%
S/SCEG/SCEG-SC//	360	5,290	6,094	371	0.01%	40	1%	0	0%	0	0%	2936	99%
S/CPL/CPLE-SC//	0	2,402	4,270	357	0.02%	21	1%	0	0%	40	1%	2915	98%
S/DUK/CPLE-TVA//	317	692	692	344	0.07%	27	1%	0	0%	0	0%	2949	99%
S/SC/CPLE-SC//	0	1,408	2,409	332	0.03%	18	1%	0	0%	84	3%	2874	97%
S/SC/SCEG-SC//	1,310	1,754	2,307	330	0.02%	40	1%	0	0%	0	0%	2936	99%
S/SC/SOCO-CPLE//	0	1,325	2,496	322	0.03%	43	1%	0	0%	242	8%	2691	90%
S/TVA/AECI-DUK//	0	50	357	308	0.36%	30	1%	9	0%	684	23%	2253	76%
S/TVA/LGEE-CPLW//	0	276	276	308	0.16%	48	2%	0	0%	71	2%	2857	96%
S/MEAG/FPC-TVA//	None	None	None	306	0.00%	40	1%	0	0%	0	0%	2936	0%
F/FPC/SOCO-FPC//	0	272	501	300	0.16%	54	2%	2	0%	248	8%	2672	90%
S/TVA/LGEE-DUK//	0	357	357	294	0.11%	39	1%	0	0%	35	1%	2902	98%
SS/GTC/GTC-SC//	0	270	303	288	0.16%	16	1%	0	0%	32	1%	2928	98%
SS/SOCO/SOCO-TVA//	212	1,638	2,573	288	0.02%	23	1%	0	0%	0	0%	2953	99%
SS/SOCO/FL-TVA/MULTIPATHALIAS/	76	651	1,380	265	0.05%	33	1%	0	0%	0	0%	2943	99%
S/DUK/SCEG-DUK//	0	648	650	201	0.05%	21	1%	0	0%	197	7%	2758	93%
SS/GTC/GTC-SOCO//	20,000	20,000	20,000	191	0.00%	5	0%	0	0%	0	0%	2971	100%
SS/SOCO/SOCO-SCEG//	0	72	83	190	0.37%	42	1%	2	0%	4	0%	2928	98%
SS/GTC/TVA-GTC//	50	244	327	188	0.10%	20	1%	0	0%	0	0%	2956	99%
S/MEAG/FPC-SC//	None	None	None	176	0.00%	70	2%	0	0%	0	0%	2906	0%
SS/SOCO/DUK-SOCO//	49	587	849	169	0.04%	40	1%	0	0%	0	0%	2936	99%
S/SCEG/SCEG-DUK//	212	741	792	168	0.03%	23	1%	0	0%	0	0%	2953	99%
SS/GTC/GTC-DUK//	0	239	479	155	0.09%	12	0%	0	0%	111	4%	2853	96%
S/MEAG/JEA-MEAG//	0	87	265	150	0.23%	44	1%	0	0%	106	4%	2826	95%
S/MEAG/SCEG-JEA//	None	None	None	149	0.00%	48	2%	0	0%	0	0%	2928	0%
S/TVA/SOCO-TVA//	0	4,031	4,940	147	0.01%	13	0%	0	0%	143	5%	2820	95%
SS/GTC/GTC-JEA//	271	812	1,351	141	0.02%	16	1%	0	0%	0	0%	2960	99%
S/SC/SC-SOCO//	1,594	2,808	3,771	124	0.01%	13	0%	0	0%	0	0%	2963	100%
S/MEAG/DUK-FPC//	None	None	None	108	0.00%	19	1%	0	0%	0	0%	2957	0%
S/DUK/SOCO-SC//	0	1,525	2,220	99	0.01%	17	1%	0	0%	46	2%	2913	98%
S/MEAG/TVA-JEA//	None	None	None	94	0.00%	17	1%	0	0%	0	0%	2959	0%
SS/GTC/JEA-GTC//	0	409	867	89	0.03%	25	1%	0	0%	4	0%	2947	99%
F/FPC/SOCO-TEC//	0	272	501	81	0.04%	13	0%	0	0%	248	8%	2715	91%
S/SCEG/SOCO-SCEG//	0	406	1,557	81	0.02%	9	0%	0	0%	430	14%	2537	85%
S/DUK/TVA-SC//	0	692	692	80	0.02%	6	0%	0	0%	46	2%	2924	98%
S/TVA/AECI-TVA//	0	50	387	75	0.09%	5	0%	0	0%	724	24%	2247	76%
S/MEAG/SC-MEAG//	22	67	79	74	0.15%	7	0%	0	0%	0	0%	2969	100%
SS/GTC/SOCO-JEA//	None	None	None	73	0.00%	12	0%	0	0%	0	0%	2964	0%
S/MEAG/FPC-MEAG//	0	87	224	72	0.11%	14	0%	1	0%	106	4%	2855	96%
S/MEAG/FPC-SCEG//	None	None	None	66	0.00%	38	1%	0	0%	0	0%	2938	0%
SS/SOCO/TVA-SCEG/MULTIPATHALIAS/	0	72	83	64	0.12%	6	0%	2	0%	4	0%	2964	100%
S/MEAG/MEAG-DUK//	0	33	173	57	0.22%	9	0%	2	0%	638	21%	2327	78%
S/SC/SCEG-CPLE//	0	2,886	3,112	54	0.00%	7	0%	0	0%	13	0%	2956	99%
SS/SOCO/TVA-SC/MULTIPATHALIAS/	0	147	538	52	0.05%	6	0%	0	0%	44	1%	2926	98%
S/SCEG/SOCO-DUK//	319	741	792	51	0.01%	8	0%	0	0%	0	0%	2968	100%
S/DUK/DUK-CPLE//	0	1,654	4,891	45	0.00%	13	0%	0	0%	388	13%	2575	87%
S/MEAG/JEA-SCEG//	None	None	None	43	0.00%	22	1%	0	0%	0	0%	2954	0%
S/TVA/AECI-CPLW//	0	50	276	41	0.05%	9	0%	0	0%	720	24%	2247	76%
SS/GTC/SC-GTC//	19	30	124	41	0.13%	1	0%	6	0%	0	0%	2969	100%
S/DUK/DUK-TVA//	0	692	692	36	0.01%	7	0%	0	0%	114	4%	2855	96%
S/TVA/SOCO-DUK//	0	357	357	36	0.01%	5	0%	0	0%	19	1%	2952	99%
S/DUK/TVA-SOCO//	92	692	692	26	0.01%	3	0%	0	0%	0	0%	2973	100%
SS/GTC/FPC-SOCO//	None	None	None	26	0.00%	5	0%	0	0%	0	0%	2971	0%

Appendix A (continued)

Segment	ATC			MWhs	Loading Factor	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max			Intervals	%	Intervals	%	Intervals	%	Intervals	%
S/SC/CPLE-SOCO//	0	3,064	3,849	25	0.00%	4	0%	0	0%	2	0%	2970	100%
S/MEAG/TVA-FPC//	None	None	None	24	0.00%	4	0%	0	0%	0	0%	2972	0%
S/MEAG/MEAG-FPC//	0	182	332	21	0.02%	5	0%	0	0%	25	1%	2946	99%
S/MEAG/SCEG-FPC//	None	None	None	21	0.00%	6	0%	0	0%	0	0%	2970	0%
S/MEAG/MEAG-SCEG//	6	8	10	18	0.29%	0	0%	9	0%	0	0%	2967	100%
S/SCEG/SOCO-SC//	0	803	3,435	18	0.00%	9	0%	0	0%	296	10%	2671	90%
SS/SOCO/SCEG-TVA/MULTIPATHALIAS/	0	125	178	18	0.02%	4	0%	0	0%	4	0%	2968	100%
SS/GTC/TVA-SCEG/	None	None	None	13	0.00%	3	0%	0	0%	0	0%	2973	0%
S/MEAG/SC-JEA//	None	None	None	12	0.00%	2	0%	0	0%	0	0%	2974	0%
SS/SOCO/SC-FL/MULTIPATHALIAS/	7	78	326	11	0.01%	2	0%	0	0%	0	0%	2974	100%
SS/SOCO/SC-SOCO//	7	78	326	11	0.01%	3	0%	0	0%	0	0%	2973	100%
SS/SOCO/TVA-DUK/MULTIPATHALIAS/	1	442	762	11	0.00%	1	0%	0	0%	8	0%	2967	100%
S/CPL/DUK-TVA//	260	276	276	10	0.00%	2	0%	0	0%	0	0%	2974	100%
S/DUK/CPLE-CPLW//	0	215	454	10	0.01%	2	0%	0	0%	856	29%	2118	71%
S/DUK/SCEG-SOCO//	31	648	650	10	0.00%	5	0%	0	0%	0	0%	2971	100%
S/TVA/CPLW-AECI//	0	276	276	10	0.01%	2	0%	0	0%	155	5%	2819	95%
SS/GTC/SCEG-JEA//	None	None	None	9	0.00%	5	0%	0	0%	0	0%	2971	0%
S/MEAG/JEA-SC//	None	None	None	8	0.00%	6	0%	0	0%	0	0%	2970	0%
S/SC/SC-SCEG//	1,399	2,676	9,194	8	0.00%	3	0%	0	0%	0	0%	2973	100%
S/SCEG/SC-SOCO//	386	4,197	6,075	8	0.00%	3	0%	0	0%	0	0%	2973	100%
S/MEAG/JEA-DUK//	None	None	None	7	0.00%	7	0%	0	0%	0	0%	2969	0%
S/MEAG/SCEG-SOCO//	None	None	None	7	0.00%	3	0%	0	0%	0	0%	2973	0%
S/DUK/SCEG-TVA//	0	648	650	6	0.00%	1	0%	0	0%	25	1%	2950	99%
S/MEAG/JEA-SOCO//	None	None	None	6	0.00%	2	0%	0	0%	0	0%	2974	0%
S/SC/DUK-CPLE//	3,407	3,720	3,939	6	0.00%	2	0%	0	0%	0	0%	2974	100%
SS/GTC/SCEG-SOCO//	None	None	None	6	0.00%	2	0%	0	0%	0	0%	2974	0%
S/DUK/SC-CPLE//	0	2,159	2,901	5	0.00%	1	0%	0	0%	355	12%	2620	88%
S/SC/SCEG-DUK//	2,725	3,069	3,112	5	0.00%	1	0%	0	0%	0	0%	2975	100%
S/MEAG/TVA-SCEG//	None	None	None	3	0.00%	3	0%	0	0%	0	0%	2973	0%
S/TVA/DUK-TVA//	0	357	357	3	0.00%	1	0%	0	0%	63	2%	2912	98%
S/DUK/SCEG-CPLE//	0	648	650	2	0.00%	1	0%	0	0%	420	14%	2555	86%
S/MEAG/MEAG-SC//	0	2	61	2	0.06%	1	0%	1	0%	2,212	74%	762	26%
SS/GTC/JEA-SC//	None	None	None	2	0.00%	2	0%	0	0%	0	0%	2974	0%
F/FPC/FPC-FPC/FPC-FPCS/	1,346	2,587	3,774	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/FPC-GVL//	14	244	334	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/FPC-SEC/FPC-SSN/	14	1,030	1,444	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/GVL-FPC//	101	384	432	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/GVL-FPC/GVL-FPCS/	101	384	432	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/GVL-SEC/GVL-SSN/	265	390	421	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/GVL-SOCO//	0	0	263	0	0.00%	0	0%	0	0%	1,584	53%	1392	47%
F/FPC/GVL-TEC//	265	390	427	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/SEC-FPC/SSN-FPC/	0	136	1,158	0	0.00%	0	0%	0	0%	1,069	36%	1907	64%
F/FPC/SEC-FPC/SSN-FPCS/	0	136	1,158	0	0.00%	0	0%	0	0%	1,069	36%	1907	64%
F/FPC/SEC-FPC/SSO-FPC/	228	463	889	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/SEC-FPC/SSO-FPCS/	228	463	889	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/SEC-GVL/SSN-GVL/	161	245	325	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/SEC-GVL/SSO-GVL/	29	210	334	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/SEC-SEC/SSO-SSN/	29	540	894	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/SEC-SOCO/SSN-SOCO/	0	0	263	0	0.00%	0	0%	0	0%	1,584	53%	1392	47%
F/FPC/SEC-SOCO/SSO-SOCO/	0	0	263	0	0.00%	0	0%	0	0%	1,584	53%	1392	47%
F/FPC/SEC-TEC/SSN-TEC/	538	777	1,399	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/SEC-TEC/SSO-TEC/	29	540	894	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/SOCO-FPC/SOCO-FPCS/	0	271	501	0	0.00%	0	0%	0	0%	248	8%	2728	92%
F/FPC/SOCO-GVL//	0	196	313	0	0.00%	0	0%	0	0%	248	8%	2728	92%
F/FPC/SOCO-SEC/SOCO-SSN/	0	272	501	0	0.00%	0	0%	0	0%	248	8%	2728	92%
F/FPC/TEC-FPC/TEC-FPCS/	1,076	2,495	3,278	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/TEC-GVL//	160	245	335	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/TEC-SEC/TEC-SSN/	780	1,076	1,456	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/JEA/JEA-SEC/JEA-SSN/	292	518	518	0	0.00%	0	0%	0	0%	0	0%	2976	100%

Appendix A (continued)

Segment	ATC			MWhs	Loading Factor	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max			Intervals	%	Intervals	%	Intervals	%	Intervals	%
F/JEA/SEC-JEA/SSN-JEA/	203	589	589	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/JEA/SEC-SOCO/SSN-SOCO/	3	582	637	0	0.00%	0	0%	0	0%	4	0%	2972	100%
F/JEA/SOCO-SEC/SOCO-SSN/	131	502	522	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/SEC/FPC-JEA//	14	637	637	0	0.00%	0	0%	0	0%	0	0%	713	24%
F/SEC/FPC-SEC/FPC-SSN/	14	1,021	1,424	0	0.00%	0	0%	0	0%	0	0%	713	24%
F/SEC/JEA-FPC//	411	637	637	0	0.00%	0	0%	0	0%	0	0%	713	24%
F/SEC/JEA-SEC/JEA-SSN/	411	637	637	0	0.00%	0	0%	0	0%	0	0%	713	24%
F/SEC/SEC-FPC/SSN-FPC/	0	437	770	0	0.00%	0	0%	0	0%	69	2%	644	22%
F/SEC/SEC-FPC/SSO-FPC/	228	527	889	0	0.00%	0	0%	0	0%	0	0%	713	24%
F/SEC/SEC-JEA/SSN-JEA/	572	637	637	0	0.00%	0	0%	0	0%	0	0%	713	24%
F/SEC/SEC-TEC/SSO-TEC/	98	620	729	0	0.00%	0	0%	0	0%	0	0%	713	24%
F/SEC/TEC-FPC//	253	552	729	0	0.00%	0	0%	0	0%	0	0%	713	24%
F/SEC/TEC-SEC/TEC-SSO/	330	605	729	0	0.00%	0	0%	0	0%	0	0%	713	24%
F/TEC/SEC-FPC/SSO-FPC/	29	540	729	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/TEC/SEC-TEC/SSO-TEC/	29	540	729	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/TEC/TEC-SEC/TEC-SSO/	330	605	729	0	0.00%	0	0%	0	0%	0	0%	2976	100%
P/LGEE/TVA-LGEE//	0	1,389	1,424	0	0.00%	0	0%	0	0%	30	1%	2946	99%
S/CPL/CPLW-DUK//	256	902	1,216	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/CPL/CPLW-TVA//	224	276	276	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/CPL/DUK-CPLW//	245	530	530	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/CPL/DUK-SC//	468	1,981	3,424	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/CPL/DUK-SCEG//	89	363	363	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/CPL/SC-DUK//	204	2,499	4,530	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/CPL/SCEG-DUK//	260	618	618	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/CPL/SCEG-SC//	260	618	618	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/CPL/SC-SCEG//	89	363	363	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/CPL/TVA-CPLW//	0	276	276	0	0.00%	0	0%	0	0%	43	1%	2933	99%
S/DUK/CPLE-DUK//	0	3,111	6,571	0	0.00%	0	0%	0	0%	224	8%	2752	92%
S/DUK/CPLE-SC//	0	1,502	2,752	0	0.00%	0	0%	0	0%	72	2%	2904	98%
S/DUK/CPLE-SCEG//	0	103	150	0	0.00%	0	0%	0	0%	607	20%	2369	80%
S/DUK/CPLW-SC//	0	1,093	1,243	0	0.00%	0	0%	0	0%	4	0%	2972	100%
S/DUK/CPLW-SCEG//	0	103	150	0	0.00%	0	0%	0	0%	544	18%	2432	82%
S/DUK/CPLW-SOCO//	0	1,093	1,243	0	0.00%	0	0%	0	0%	3	0%	2973	100%
S/DUK/CPLW-TVA//	0	692	692	0	0.00%	0	0%	0	0%	1	0%	2975	100%
S/DUK/DUK-CPLW//	0	248	454	0	0.00%	0	0%	0	0%	777	26%	2199	74%
S/DUK/DUK-SCEG//	0	103	150	0	0.00%	0	0%	0	0%	562	19%	2414	81%
S/DUK/SC-CPLW//	0	188	454	0	0.00%	0	0%	0	0%	880	30%	2096	70%
S/DUK/SC-DUK//	0	2,066	2,901	0	0.00%	0	0%	0	0%	202	7%	2774	93%
S/DUK/SCEG-CPLW//	0	189	454	0	0.00%	0	0%	0	0%	886	30%	2090	70%
S/DUK/SCEG-SC//	152	648	650	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/DUK/SC-SCEG//	0	103	150	0	0.00%	0	0%	0	0%	541	18%	2435	82%
S/DUK/SC-SOCO//	441	2,094	2,335	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/DUK/SC-TVA//	0	692	692	0	0.00%	0	0%	0	0%	25	1%	2951	99%
S/DUK/SOCO-CPLW//	0	198	454	0	0.00%	0	0%	0	0%	871	29%	2105	71%
S/DUK/SOCO-SCEG//	0	103	150	0	0.00%	0	0%	0	0%	603	20%	2373	80%
S/DUK/SOCO-TVA//	385	692	692	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/DUK/TVA-CPLW//	0	207	454	0	0.00%	0	0%	0	0%	867	29%	2109	71%
S/DUK/TVA-SCEG//	0	103	150	0	0.00%	0	0%	0	0%	604	20%	2372	80%
S/MEAG/DUK-MEAG//	0	130	191	0	0.00%	0	0%	0	0%	112	4%	2864	96%
S/MEAG/GTC-MEAG//	1,370	1,970	2,150	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/MEAG/MEAG-GTC//	2,521	2,701	3,004	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/MEAG/MEAG-TVA//	1	126	147	0	0.00%	0	0%	0	0%	64	2%	2912	98%
S/MEAG/SCEG-MEAG//	0	15	21	0	0.00%	0	0%	0	0%	6	0%	2970	100%
S/MEAG/TVA-MEAG//	0	56	198	0	0.00%	0	0%	0	0%	32	1%	2944	99%
S/SC/CPLE-DUK//	3,431	3,650	3,963	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SC/CPLE-SCEG//	0	1,210	2,138	0	0.00%	0	0%	0	0%	84	3%	2892	97%
S/SC/DUK-SCEG//	1,532	2,138	3,939	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SC/DUK-SOCO//	3,082	3,516	3,862	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SC/SC-CPLE//	0	2,950	4,196	0	0.00%	0	0%	0	0%	13	0%	2963	100%
S/SC/SC-DUK//	1,451	2,375	3,338	0	0.00%	0	0%	0	0%	0	0%	2976	100%

Appendix A (continued)

Segment	ATC			Loading		Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max	MWhs	Factor	Intervals	%	Intervals	%	Intervals	%	Intervals	%
S/SC/SCEG-SOCO//	2,724	3,070	3,112	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SC/SOCO-DUK//	0	2,174	2,654	0	0.00%	0	0%	0	0%	28	1%	2948	99%
S/SC/SOCO-SCEG//	0	1,448	2,223	0	0.00%	0	0%	0	0%	94	3%	2882	97%
S/SCEG/CPLE-DUK//	183	377	549	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SCEG/CPLE-SC//	183	377	549	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SCEG/CPLE-SCEG//	0	377	508	0	0.00%	0	0%	0	0%	280	9%	2696	91%
S/SCEG/DUK-CPLE//	62	113	535	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SCEG/DUK-SC//	62	113	535	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SCEG/DUK-SCEG//	0	109	334	0	0.00%	0	0%	0	0%	314	11%	2662	89%
S/SCEG/DUK-SOCO//	62	113	535	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SCEG/SC-CPLE//	249	632	826	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SCEG/SC-DUK//	263	741	792	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SCEG/SC-SCEG//	0	2,142	4,263	0	0.00%	0	0%	0	0%	26	1%	2950	99%
S/TVA/AECI-LGEE//	0	0	387	0	0.00%	0	0%	0	0%	1,737	58%	1239	42%
S/TVA/CPLW-DUK//	0	276	276	0	0.00%	0	0%	0	0%	19	1%	2957	99%
S/TVA/CPLW-LGEE//	0	276	276	0	0.00%	0	0%	0	0%	1,241	42%	1735	58%
S/TVA/CPLW-SOCO//	0	276	276	0	0.00%	0	0%	0	0%	19	1%	2957	99%
S/TVA/CPLW-TVA//	0	276	276	0	0.00%	0	0%	0	0%	31	1%	2945	99%
S/TVA/DUK-CPLW//	0	276	276	0	0.00%	0	0%	0	0%	19	1%	2957	99%
S/TVA/DUK-LGEE//	0	321	357	0	0.00%	0	0%	0	0%	1,245	42%	1731	58%
S/TVA/DUK-SOCO//	0	357	357	0	0.00%	0	0%	0	0%	19	1%	2957	99%
S/TVA/LGEE-TVA//	0	2,648	2,648	0	0.00%	0	0%	0	0%	71	2%	2905	98%
S/TVA/SOCO-CPLW//	0	276	276	0	0.00%	0	0%	0	0%	19	1%	2957	99%
S/TVA/SOCO-LGEE//	0	306	2,647	0	0.00%	0	0%	0	0%	1,317	44%	1659	56%
S/TVA/TVA-AECI//	0	600	600	0	0.00%	0	0%	0	0%	91	3%	2885	97%
S/TVA/TVA-LGEE//	0	347	2,622	0	0.00%	0	0%	0	0%	1,245	42%	1731	58%
SS/GTC/GTC-FPC//	271	812	1,351	0	0.00%	0	0%	0	0%	0	0%	2976	100%
SS/GTC/GTC-GTC//	25,113	25,522	25,721	0	0.00%	0	0%	0	0%	0	0%	2976	100%
SS/GTC/GTC-MEAG//	9,387	9,899	9,999	0	0.00%	0	0%	0	0%	0	0%	2976	100%
SS/GTC/GTC-SCEG//	0	39	46	0	0.00%	0	0%	0	0%	4	0%	2972	100%
SS/GTC/GTC-TVA//	0	584	692	0	0.00%	0	0%	0	0%	4	0%	2972	100%
SS/GTC/MEAG-GTC//	8,599	8,801	9,311	0	0.00%	0	0%	0	0%	0	0%	2976	100%
SS/SOCO/DUK-SC/MULTIPATHALIAS/	0	146	538	0	0.00%	0	0%	0	0%	44	1%	2932	99%
SS/SOCO/DUK-SCEG/MULTIPATHALIAS/	0	72	83	0	0.00%	0	0%	0	0%	4	0%	2972	100%
SS/SOCO/DUK-TVA/MULTIPATHALIAS/	49	587	849	0	0.00%	0	0%	0	0%	0	0%	2976	100%
SS/SOCO/SC-DUK/MULTIPATHALIAS/	1	78	326	0	0.00%	0	0%	0	0%	8	0%	2968	100%
SS/SOCO/SCEG-DUK/MULTIPATHALIAS/	0	125	178	0	0.00%	0	0%	0	0%	12	0%	2964	100%
SS/SOCO/SCEG-SC/MULTIPATHALIAS/	0	125	173	0	0.00%	0	0%	0	0%	48	2%	2928	98%
SS/SOCO/SC-SCEG/MULTIPATHALIAS/	0	65	78	0	0.00%	0	0%	0	0%	4	0%	2972	100%
SS/SOCO/SC-TVA/MULTIPATHALIAS/	7	78	326	0	0.00%	0	0%	0	0%	0	0%	2976	100%