2024 RTO Membership Analysis
Appendix 7

MONTHLY AUDIT REPORT ON THE SOUTHEAST ENERGY EXCHANGE MARKET

FOR

August 2024

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I. Overview

This is the August 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 August were slightly less than 106,000 MWh, which is the second highest volume on record for SEEM. This is higher than the 68,000 MWh in July and higher than the 12-month rolling average of 81,000 MWh. 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, 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 August, which is comparable to the level July. 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 members 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 August.

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 August 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 August 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 several changes to participant-specific constraints among participants in August to temporarily exclude trading partners and two constraints were changed to create trading partners.

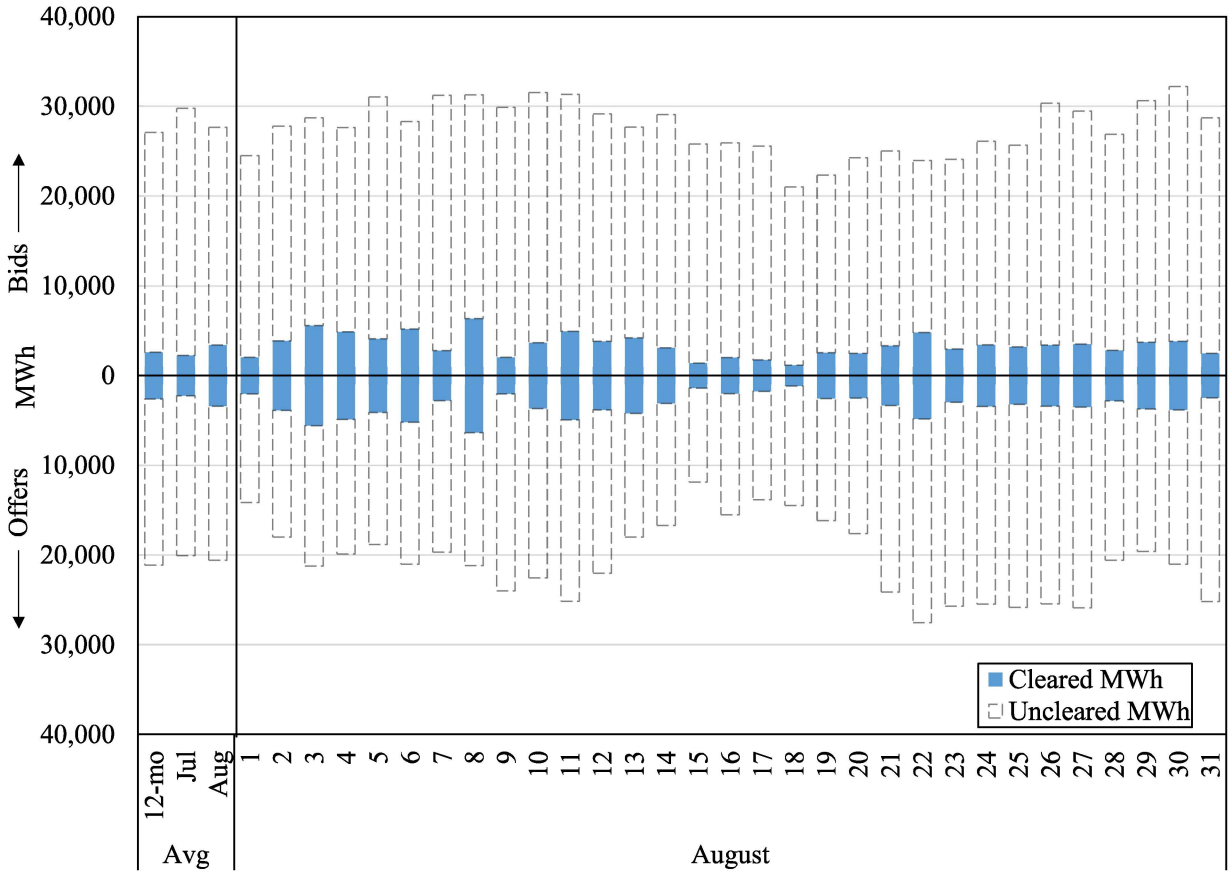
B. Market Activity

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 105,600 MWh of energy in August, which is the second highest monthly volume since SEEM inception. Figure 1 shows the daily SEEM bids and offers for August. 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
August 2024

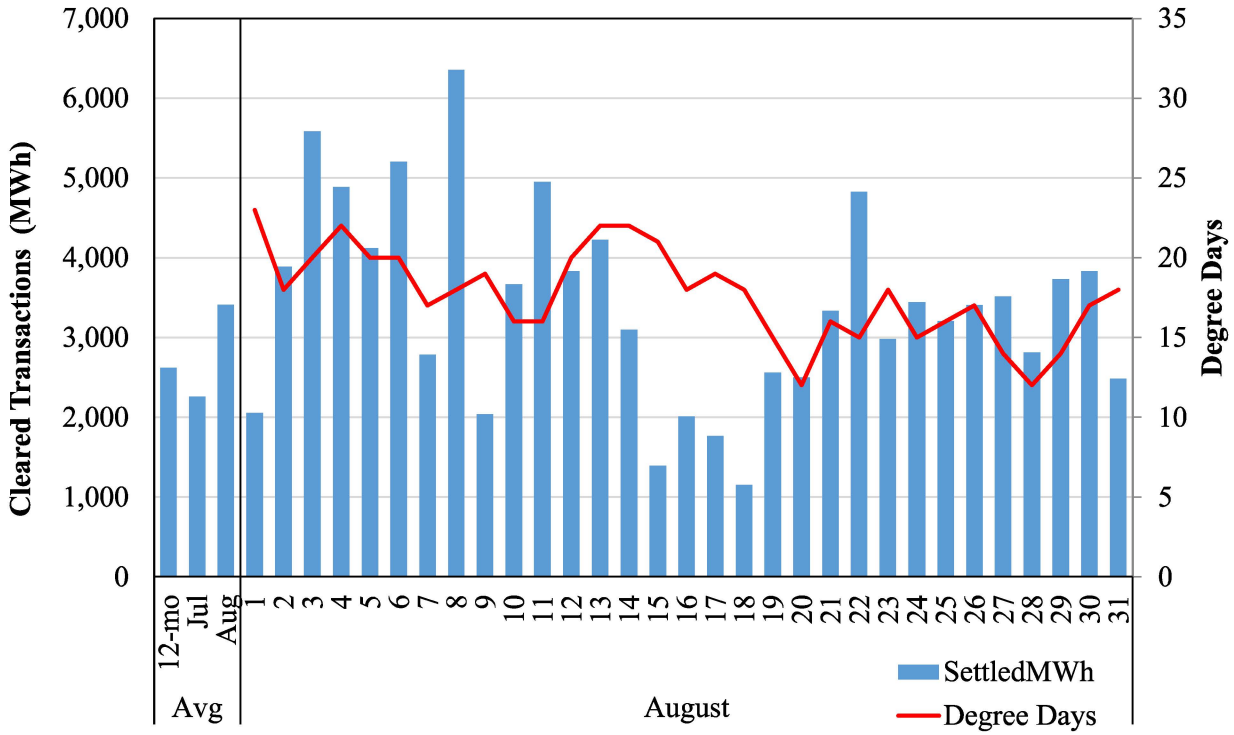


The left side columns show activity relative to the previous month and relative to the 12-month rolling average. As the left-side monthly and the 12-month average bars show, total liquidity

(cleared and uncleared bids and offers) was comparable to the 12-month average but slightly lower than July'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 system 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 periods of high demand driven by extreme weather. Hence, we find it useful to determine how activity changes when underlying system demand changes, using degree Days as demand proxy.

The Figure does not reveal an obvious relationship. Therefore, we made some measurements using a correlation coefficient[3] between the cleared transactions and Degree Days and found a

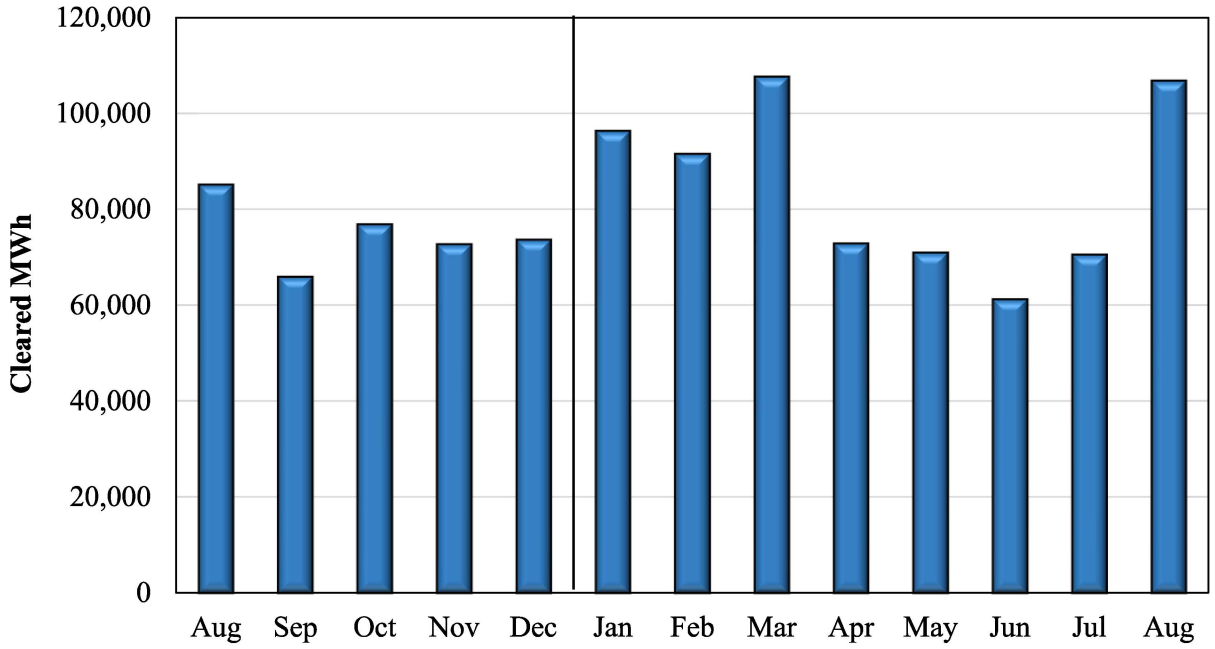
[2] According to the US National Weather Service, "Degree days are the difference between the daily temperature mean, (high temperature plus low temperature divided by two) and 65°F. If the temperature mean is above 65°F, we subtract 65 from the mean and the result is ***Cooling Degree Days***. If the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

statistically insignificant[4] relationship. We further calculated the correlation between Degree Days and offered quantities, to test the hypothesis that high demand days lack adequate supply response and found a negative, statistically insignificant correlation. We measured a statistically significant correlation coefficient of +0.58 for Degree Days and bid quantities, meaning buyers responded to increases in demand by placing more bids. Therefore, for August anyway, activity is not strongly correlated with demand fluctuations (limited to correlation with higher bids, but not lower offers). In July there was a stronger relationship. We will continue to track the data.

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 fell off in the Spring but recovered in August.

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



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

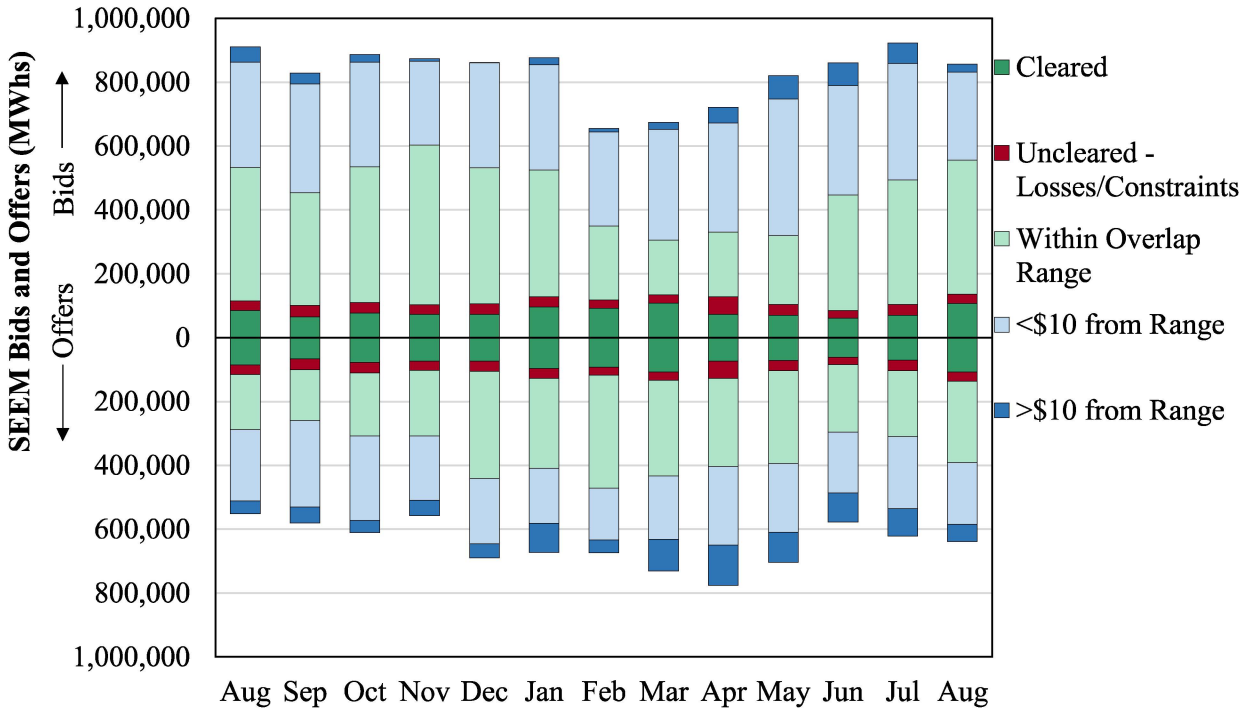
same direction while a negative correlation coefficient indicates the variables tend to move in opposite directions. A correlation coefficient at or close to zero means there is no linear relationship.

[4] Statistically significant means the value of the calculated correlation coefficient is not likely to be the result of random chance and is measured by estimating the standard error of the calculation.

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

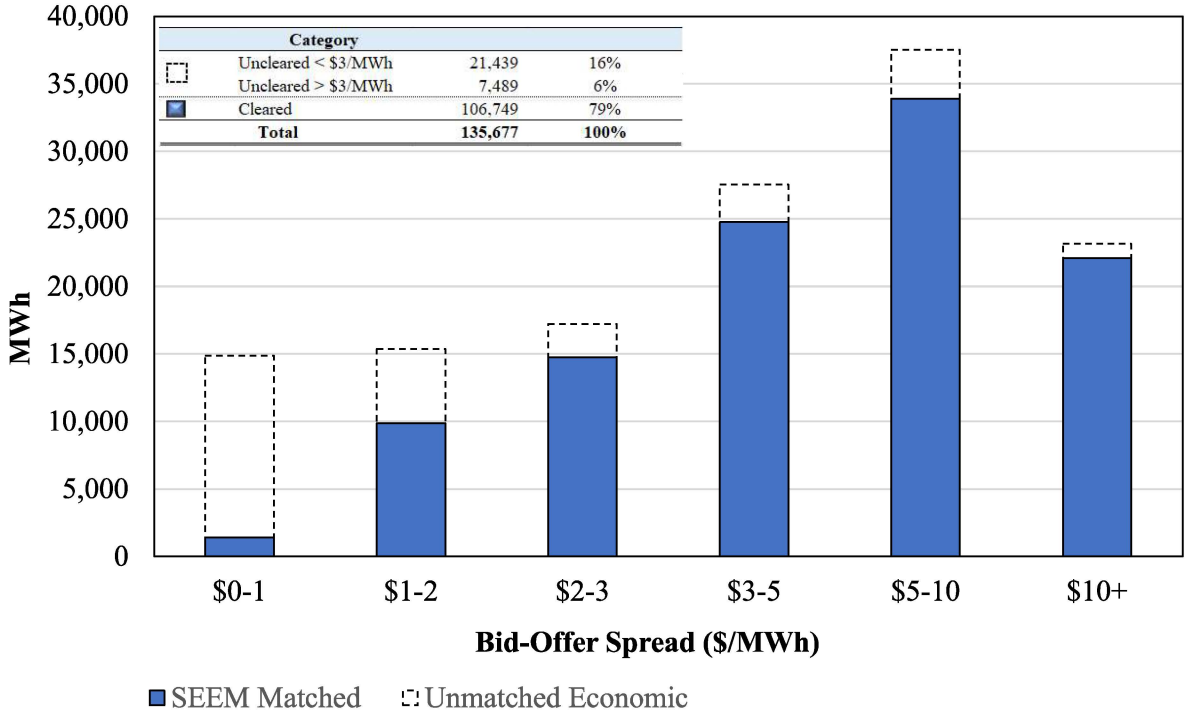


In Figure 4, the total size of the stacked bars (both bids and offers) are an indication of market liquidity. In general, there tends to be more bids (around 800,000 MWh) than offers (around 600,00 MWh). Since the end of 2023, liquidity declined slightly, even though cleared matches increased significantly in August. Liquidity in July and August continued to skew toward buyers

(bids > offers). 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.

Like in previous months, our evaluation of 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
August 2024

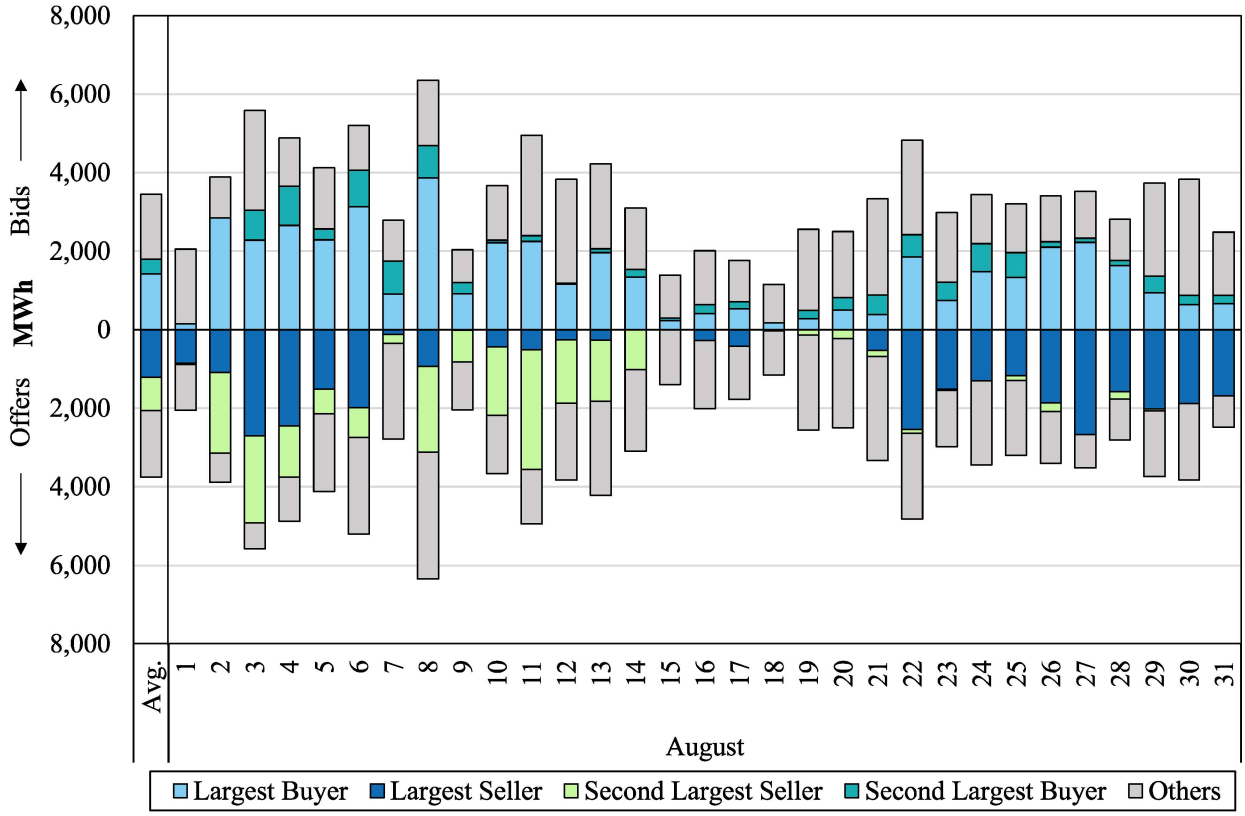


To understand why economic bids and offers may not have cleared, it is useful to examine the bid-offer spread. Average loss charges are roughly $2 per MWh, although some potential economic matches would incur higher loss costs. Therefore, in the inset table, we divide totals between bid-offer spreads 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, 80 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
August 2024

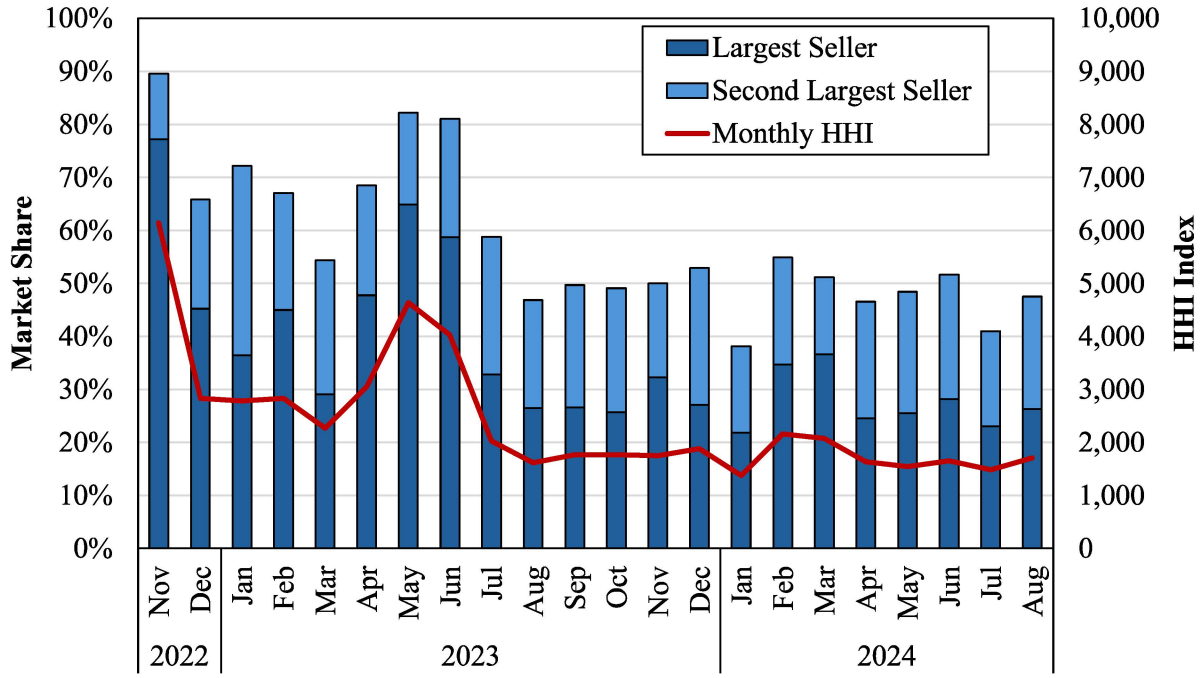


The figure shows certain buyers and sellers comprise significant shares of the transaction activity. For the month, 26 percent of the sales were made by a single seller and 24 percent of the purchases were made by a single buyer.

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 – August 2024

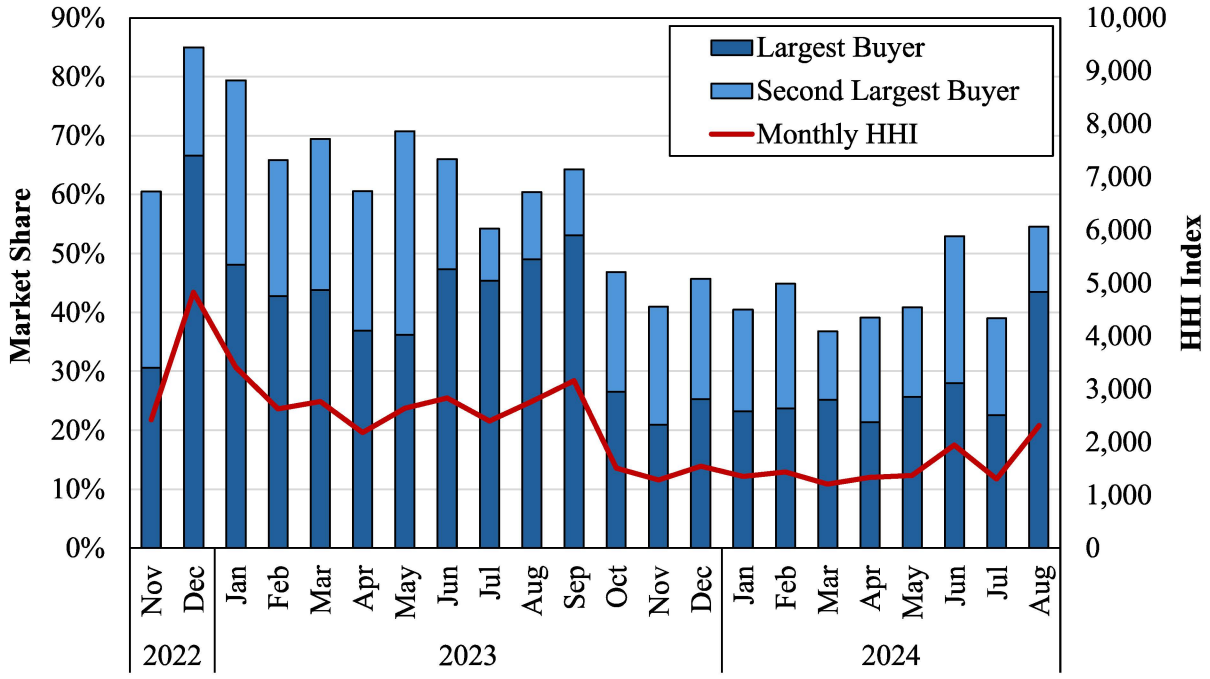


Not surprisingly, the share of the top seller, as well as the share of the top two, declined once the Florida participants fully joined in August 2023. The chart also shows the HHI has declined. The HHI is a measure of market concentration and is used to determine market competitiveness, often on a relative 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 August 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 – August 2024

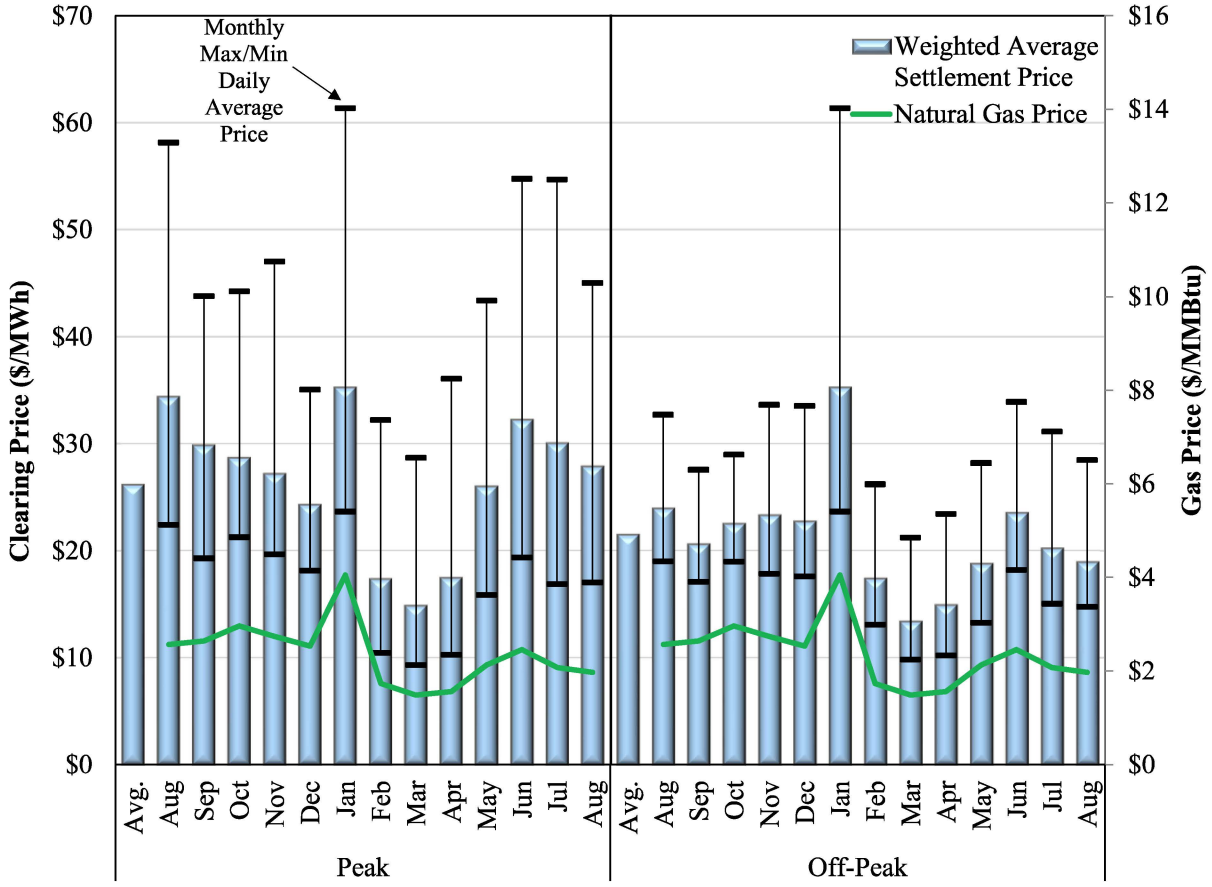


The statistics for buyer market shares show a large buyer was in the market in August. The entry of Florida participants coincided with a decline in buyer concentration. These declines, together with the uptrend in matched trades are indicative of a market evolving to greater liquidity and competitiveness.

2. Network Usage

In this subsection, we report on the usage of the SEEM network. Figure 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 August relative to July 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 August, there were 287 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

[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.

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 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.

[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 1: Statistics for Most Utilized SEEM Segments
August 2024

Segment	ATC				Loading	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max	MWhs	Factor	Intervals	%	Intervals	%	Intervals	%	Intervals	%
F/FPC/FPC-SOCO//	0	191	266	32,371	29.54%	1,080	36%	138	5%	668	22%	1090	37%
SS/SOCO/FL-SOCO//	416	805	1,364	24,939	3.89%	1,339	45%	0	0%	0	0%	1637	55%
F/TEC/TEC-FPC//	0	2,673	3,496	17,445	0.92%	1,546	52%	0	0%	4	0%	1426	48%
SS/SOCO/TVA-SOCO//	287	1,012	1,290	17,006	2.36%	439	15%	0	0%	0	0%	2537	85%
S/TVA/TVA-SOCO//	0	4,826	4,995	16,313	0.48%	404	14%	0	0%	40	1%	2532	85%
F/FPC/TEC-SOCO//	0	191	266	13,263	12.09%	1,206	41%	78	3%	668	22%	1024	34%
F/JEA/SOCO-JEA//	0	692	824	10,590	2.16%	1,421	48%	0	0%	4	0%	1551	52%
SS/SOCO/SOCO-SOCO//	43,700	44,230	44,230	7,952	0.02%	502	17%	0	0%	0	0%	2474	83%
S/TVA/SOCO-TVA//	0	3,897	4,940	7,594	0.28%	255	9%	0	0%	112	4%	2609	88%
S/SC/SOCO-SC//	0	236	1,867	6,236	2.12%	490	16%	20	1%	1,050	35%	1416	48%
SS/SOCO/FL-TVA/MULTIPATHALIAS/	0	780	1,364	5,257	0.88%	253	9%	1	0%	23	1%	2699	91%
S/CPL/CPLE-DUK//	689	5,628	6,964	4,749	0.12%	206	7%	0	0%	0	0%	2770	93%
S/DUK/TVA-DUK//	0	692	692	4,296	0.97%	115	4%	4	0%	287	10%	2570	86%
S/TVA/TVA-DUK//	0	357	357	4,292	1.65%	109	4%	8	0%	48	2%	2811	94%
F/FPC/TEC-FPC//	9	2,716	3,545	4,182	0.22%	578	19%	0	0%	0	0%	2398	81%
SS/SOCO/SOCO-FL//	317	1,154	1,964	4,093	0.47%	552	19%	0	0%	0	0%	2424	81%
S/DUK/CPLE-SOCO//	0	2,065	2,335	3,771	0.26%	184	6%	1	0%	35	1%	2756	93%
S/MEAG/SOCO-MEAG//	2,666	3,034	3,135	3,674	0.16%	287	10%	0	0%	0	0%	2689	90%
SS/SOCO/DUK-SOCO//	0	486	650	3,383	1.00%	128	4%	19	1%	15	1%	2814	95%
S/MEAG/SOCO-JEA//	None	None	None	3,355	0.00%	516	17%	0	0%	0	0%	2460	0%
SS/SOCO/FL-SC/MULTIPATHALIAS/	0	112	298	3,179	3.84%	279	9%	76	3%	155	5%	2466	83%
SS/GTC/SOCO-GTC//	12,851	13,553	14,826	3,178	0.03%	146	5%	0	0%	0	0%	2830	95%
SS/GTC/FPC-GTC//	89	490	857	3,104	0.79%	133	4%	0	0%	0	0%	2843	96%
S/DUK/SOCO-DUK//	0	2,045	2,220	2,693	0.21%	154	5%	0	0%	259	9%	2563	86%
S/SCEG/SCEG-SOCO//	76	2,682	4,628	2,589	0.13%	283	10%	0	0%	0	0%	2693	90%
S/SC/SCEG-SC//	706	1,454	2,725	2,585	0.25%	211	7%	0	0%	0	0%	2765	93%
S/MEAG/FPC-TVA//	None	None	None	2,043	0.00%	160	5%	0	0%	0	0%	2816	0%
S/SCEG/SCEG-SC//	0	2,228	6,459	1,913	0.08%	173	6%	0	0%	12	0%	2791	94%
SS/SOCO/SCEG-SOCO//	0	113	131	1,710	2.21%	117	4%	49	2%	40	1%	2770	93%
SS/SOCO/SOCO-DUK//	0	423	630	1,681	0.57%	73	2%	5	0%	18	1%	2880	97%
S/SCEG/SOCO-SCEG//	0	185	1,234	1,642	0.85%	173	6%	0	0%	945	32%	1858	62%
F/TEC/FPC-TEC//	0	2,021	3,399	1,639	0.12%	141	5%	0	0%	92	3%	2743	92%
S/DUK/DUK-SOCO//	0	1,826	2,335	1,634	0.13%	195	7%	1	0%	50	2%	2730	92%
SS/SOCO/FL-DUK/MULTIPATHALIAS/	0	423	630	1,507	0.51%	188	6%	11	0%	18	1%	2759	93%
F/FPC/FPC-TEC//	0	2,284	3,439	1,506	0.10%	131	4%	0	0%	88	3%	2757	93%
SS/SOCO/SOCO-TVA//	0	1,707	2,716	1,477	0.12%	66	2%	0	0%	23	1%	2887	97%
S/CPL/CPLE-SCEG//	0	363	363	1,462	0.58%	99	3%	2	0%	150	5%	2725	92%
S/AECI/TVA-AECI//	0	811	1,022	1,432	0.24%	102	3%	0	0%	11	0%	2863	96%
S/MEAG/FPC-SOCO//	None	None	None	1,389	0.00%	210	7%	0	0%	0	0%	2766	0%
S/MEAG/FPC-SC//	None	None	None	1,347	0.00%	147	5%	0	0%	0	0%	2829	0%
S/CPL/CPLE-SC//	0	2,344	4,270	1,307	0.07%	101	3%	0	0%	133	4%	2742	92%
S/TVA/SOCO-AECI//	0	600	600	1,297	0.34%	96	3%	0	0%	196	7%	2684	90%
SS/SOCO/FL-SCEG/MULTIPATHALIAS/	1	65	83	1,209	2.43%	143	5%	43	1%	20	1%	2770	93%
F/JEA/JEA-SOCO//	365	637	762	1,111	0.24%	250	8%	0	0%	0	0%	2726	92%
SS/GTC/DUK-GTC//	0	295	408	1,079	0.55%	65	2%	7	0%	50	2%	2854	96%

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 August, there were 1,044,576 segment intervals.[8] The two circumstances (Cases (2) and (3)) when a segment is

[8] The maximum number of segment intervals in a month is (351 segments x 4 intervals x 24 hours x #days in the

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 (4.4 percent of the time). The third most common case was "Partially Used" (Case 1), where the segment was partially used (1.8 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 (632).

Table 2: Summary of All Segments
August 2024

Segment	Case 1 Partially Used		Case 2 Fully Used		Case 3 Unavailable		Case 4 Uncleared	
	Intervals	%	Intervals	%	Intervals	%	Intervals	%
All Segments	19,269	1.8%	632	0.1%	46,263	4.4%	978,412	93.7%

Measuring transmission capacity congestion by adding Case 2 and 3, the percentage of constrained segment intervals was 4.5 percent in August (versus 4.2 percent in July). 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 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.

month). This is the maximum because occasionally the system requires shutting down for short periods to perform upgrades and other patches. In August, SEEM operated in all intervals.

Table 3: Most Constrained SEEM Segments

August 2024

Segment	ATC				Loading	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max	MWhs	Factor	Intervals	%	Intervals	%	Intervals	%	Intervals	%
S/MEAG/MEAG-SC//	0	1	56	57	0.61%	5	*0%*	2	*0%*	2,148	*72%*	821	*28%*
S/TVA/AECI-LGEE//	0	0	345	0	0.00%	0	*0%*	0	*0%*	1,832	*62%*	1144	*38%*
S/TVA/SOCO-LGEE//	0	182	2,648	0	0.00%	0	*0%*	0	*0%*	1,376	*46%*	1600	*54%*
S/TVA/DUK-LGEE//	0	193	357	0	0.00%	0	*0%*	0	*0%*	1,332	*45%*	1644	*55%*
S/TVA/TVA-LGEE//	0	280	2,648	0	0.00%	0	*0%*	0	*0%*	1,280	*43%*	1696	*57%*
S/TVA/CPLW-LGEE//	0	276	276	0	0.00%	0	*0%*	0	*0%*	1,276	*43%*	1700	*57%*
S/DUK/SCEG-CPLW//	0	133	454	0	0.00%	0	*0%*	0	*0%*	1,131	*38%*	1845	*62%*
S/SC/SOCO-SC//	0	236	1,867	6,236	2.12%	490	*16%*	20	*1%*	1,050	*35%*	1416	*48%*
S/DUK/SC-CPLW//	0	149	454	0	0.00%	0	*0%*	0	*0%*	1,046	*35%*	1930	*65%*
S/TVA/AECI-CPLW//	0	41	276	4	0.01%	1	*0%*	0	*0%*	989	*33%*	1986	*67%*
S/DUK/SOCO-CPLW//	0	196	454	18	0.01%	4	*0%*	0	*0%*	986	*33%*	1986	*67%*
S/TVA/AECI-TVA//	0	41	346	83	0.11%	5	*0%*	4	*0%*	981	*33%*	1986	*67%*
S/TVA/AECI-DUK//	0	41	346	10	0.01%	1	*0%*	1	*0%*	977	*33%*	1997	*67%*
S/TVA/AECI-SOCO//	0	41	346	770	1.00%	52	*2%*	9	*0%*	969	*33%*	1946	*65%*
S/SCEG/SOCO-SCEG//	0	185	1,234	1,642	0.85%	173	*6%*	0	*0%*	945	*32%*	1858	*62%*
S/DUK/CPLE-CPLW//	0	235	454	334	0.20%	23	*1%*	0	*0%*	893	*30%*	2060	*69%*
S/DUK/TVA-CPLW//	0	227	454	0	0.00%	0	*0%*	0	*0%*	886	*30%*	2090	*70%*
S/SCEG/DUK-SCEG//	0	105	353	347	0.54%	49	*2%*	5	*0%*	856	*29%*	2066	*69%*
S/DUK/DUK-CPLW//	0	259	454	0	0.00%	0	*0%*	0	*0%*	855	*29%*	2121	*71%*
F/FPC/SEC-SOCO/SSO-SOCO/	0	179	266	0	0.00%	0	*0%*	0	*0%*	800	*27%*	2176	*73%*

III. Conclusion

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

Segment	ATC				Loading	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max	MWhs	Factor	Intervals	%	Intervals	%	Intervals	%	Intervals	%
F/FPC/FPC-SOCO//	0	191	266	32,371	29.54%	1,080	36%	138	5%	668	22%	1090	37%
SS/SOCO/FL-SOCO//	416	805	1,364	24,939	3.89%	1,339	45%	0	0%	0	0%	1637	55%
F/TEC/TEC-FPC//	0	2,673	3,496	17,445	0.92%	1,546	52%	0	0%	4	0%	1426	48%
SS/SOCO/TVA-SOCO//	287	1,012	1,290	17,006	2.36%	439	15%	0	0%	0	0%	2537	85%
S/TVA/TVA-SOCO//	0	4,826	4,995	16,313	0.48%	404	14%	0	0%	40	1%	2532	85%
F/FPC/TEC-SOCO//	0	191	266	13,263	12.09%	1,206	41%	78	3%	668	22%	1024	34%
F/JEA/SOCO-JEA//	0	692	824	10,590	2.16%	1,421	48%	0	0%	4	0%	1551	52%
SS/SOCO/SOCO-SOCO//	43,700	44,230	44,230	7,952	0.02%	502	17%	0	0%	0	0%	2474	83%
S/TVA/SOCO-TVA//	0	3,897	4,940	7,594	0.28%	255	9%	0	0%	112	4%	2609	88%
S/SC/SOCO-SC//	0	236	1,867	6,236	2.12%	490	16%	20	1%	1,050	35%	1416	48%
SS/SOCO/FL-TVA/MULTIPATHALIAS/	0	780	1,364	5,257	0.88%	253	9%	1	0%	23	1%	2699	91%
S/CPL/CPLE-DUK//	689	5,628	6,964	4,749	0.12%	206	7%	0	0%	0	0%	2770	93%
S/DUK/TVA-DUK//	0	692	692	4,296	0.97%	115	4%	4	0%	287	10%	2570	86%
S/TVA/TVA-DUK//	0	357	357	4,292	1.65%	109	4%	8	0%	48	2%	2811	94%
F/FPC/TEC-FPC//	9	2,716	3,545	4,182	0.22%	578	19%	0	0%	0	0%	2398	81%
SS/SOCO/SOCO-FL//	317	1,154	1,964	4,093	0.47%	552	19%	0	0%	0	0%	2424	81%
S/DUK/CPLE-SOCO//	0	2,065	2,335	3,771	0.26%	184	6%	1	0%	35	1%	2756	93%
S/MEAG/SOCO-MEAG//	2,666	3,034	3,135	3,674	0.16%	287	10%	0	0%	0	0%	2689	90%
SS/SOCO/DUK-SOCO//	0	486	650	3,383	1.00%	128	4%	19	1%	15	1%	2814	95%
S/MEAG/SOCO-JEA//	None	None	None	3,355	0.00%	516	17%	0	0%	0	0%	2460	0%
SS/SOCO/FL-SC/MULTIPATHALIAS/	0	112	298	3,179	3.84%	279	9%	76	3%	155	5%	2466	83%
SS/GTC/SOCO-GTC//	12,851	13,553	14,826	3,178	0.03%	146	5%	0	0%	0	0%	2830	95%
SS/GTC/FPC-GTC//	89	490	857	3,104	0.79%	133	4%	0	0%	0	0%	2843	96%
S/DUK/SOCO-DUK//	0	2,045	2,220	2,693	0.21%	154	5%	0	0%	259	9%	2563	86%
S/SCEG/SCEG-SOCO//	76	2,682	4,628	2,589	0.13%	283	10%	0	0%	0	0%	2693	90%
S/SC/SCEG-SC//	706	1,454	2,725	2,585	0.25%	211	7%	0	0%	0	0%	2765	93%
S/MEAG/FPC-TVA//	None	None	None	2,043	0.00%	160	5%	0	0%	0	0%	2816	0%
S/SCEG/SCEG-SC//	0	2,228	6,459	1,913	0.08%	173	6%	0	0%	12	0%	2791	94%
SS/SOCO/SCEG-SOCO//	0	113	131	1,710	2.21%	117	4%	49	2%	40	1%	2770	93%
SS/SOCO/SOCO-DUK//	0	423	630	1,681	0.57%	73	2%	5	0%	18	1%	2880	97%
S/SCEG/SOCO-SCEG//	0	185	1,234	1,642	0.85%	173	6%	0	0%	945	32%	1858	62%
F/TEC/FPC-TEC//	0	2,021	3,399	1,639	0.12%	141	5%	0	0%	92	3%	2743	92%
S/DUK/DUK-SOCO//	0	1,826	2,335	1,634	0.13%	195	7%	1	0%	50	2%	2730	92%
SS/SOCO/FL-DUK/MULTIPATHALIAS/	0	423	630	1,507	0.51%	188	6%	11	0%	18	1%	2759	93%
F/FPC/FPC-TEC//	0	2,284	3,439	1,506	0.10%	131	4%	0	0%	88	3%	2757	93%
SS/SOCO/SOCO-TVA//	0	1,707	2,716	1,477	0.12%	66	2%	0	0%	23	1%	2887	97%
S/CPL/CPLE-SCEG//	0	363	363	1,462	0.58%	99	3%	2	0%	150	5%	2725	92%
S/AECI/TVA-AECI//	0	811	1,022	1,432	0.24%	102	3%	0	0%	11	0%	2863	96%
S/MEAG/FPC-SOCO//	None	None	None	1,389	0.00%	210	7%	0	0%	0	0%	2766	0%
S/MEAG/FPC-SC//	None	None	None	1,347	0.00%	147	5%	0	0%	0	0%	2829	0%
S/CPL/CPLE-SC//	0	2,344	4,270	1,307	0.07%	101	3%	0	0%	133	4%	2742	92%
S/TVA/SOCO-AECI//	0	600	600	1,297	0.34%	96	3%	0	0%	196	7%	2684	90%
SS/SOCO/FL-SCEG/MULTIPATHALIAS/	1	65	83	1,209	2.43%	143	5%	43	1%	20	1%	2770	93%
F/JEA/JEA-SOCO//	365	637	762	1,111	0.24%	250	8%	0	0%	0	0%	2726	92%
SS/GTC/DUK-GTC//	0	295	408	1,079	0.55%	65	2%	7	0%	50	2%	2854	96%
SS/SOCO/SOCO-SC//	0	112	298	984	1.19%	91	3%	17	1%	155	5%	2713	91%
S/TVA/DUK-TVA//	0	343	357	936	0.40%	77	3%	3	0%	148	5%	2748	92%
S/SC/DUK-SC//	0	1,632	2,854	934	0.08%	153	5%	1	0%	164	6%	2658	89%
S/SC/CPLE-SC//	0	1,366	2,833	897	0.10%	66	2%	0	0%	301	10%	2609	88%
S/CPL/SCEG-CPLE//	0	618	618	882	0.21%	146	5%	0	0%	199	7%	2631	88%
SS/SOCO/SOCO-SCEG//	1	65	83	876	1.76%	88	3%	31	1%	20	1%	2837	95%
S/AECI/AECI-TVA//	0	100	766	867	0.65%	65	2%	8	0%	372	13%	2531	85%
S/CPL/DUK-CPLE//	0	3,855	7,147	861	0.03%	152	5%	0	0%	2	0%	2822	95%
S/SCEG/CPLE-SOCO//	0	377	504	851	0.31%	66	2%	0	0%	6	0%	2904	98%
S/TVA/AECI-SOCO//	0	41	346	770	1.00%	52	2%	9	0%	969	33%	1946	65%
SS/GTC/FPC-SC//	None	None	None	723	0.00%	67	2%	0	0%	0	0%	2909	0%
S/MEAG/MEAG-SOCO//	2,563	2,702	2,974	713	0.04%	46	2%	0	0%	0	0%	2930	98%
S/SCEG/SCEG-DUK//	57	737	848	710	0.13%	77	3%	0	0%	0	0%	2899	97%
SS/SOCO/SCEG-FL/MULTIPATHALIAS/	0	113	131	682	0.88%	114	4%	6	0%	40	1%	2816	95%
S/DUK/SOCO-CPLE//	0	1,780	2,220	674	0.06%	125	4%	0	0%	306	10%	2545	86%

Appendix A (continued)

Segment	ATC				Loading	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max	MWhs	Factor	Intervals	%	Intervals	%	Intervals	%	Intervals	%
S/MEAG/DUK-JEA//	None	None	None	657	0.00%	140	5%	0	0%	0	0%	2836	0%
SS/SOCO/DUK-FL/MULTIPATHALIAS/	0	486	650	613	0.18%	93	3%	5	0%	15	1%	2863	96%
S/DUK/CPLE-TVA//	0	692	692	608	0.12%	36	1%	0	0%	5	0%	2935	99%
S/SCEG/SOCO-CPLE//	0	632	1,001	579	0.14%	96	3%	0	0%	148	5%	2732	92%
S/MEAG/FPC-DUK//	None	None	None	546	0.00%	98	3%	0	0%	0	0%	2878	0%
SS/GTC/SCEG-GTC//	0	62	72	540	1.22%	37	1%	18	1%	48	2%	2873	97%
S/DUK/SOCO-SC//	0	1,351	2,220	532	0.05%	62	2%	0	0%	136	5%	2778	93%
P/LGEE/LGEE-TVA//	0	1,623	1,623	530	0.05%	45	2%	2	0%	78	3%	2851	96%
S/DUK/SCEG-SOCO//	254	649	650	502	0.12%	53	2%	0	0%	0	0%	2923	98%
SS/SOCO/TVA-FL/MULTIPATHALIAS/	287	925	1,290	496	0.07%	62	2%	0	0%	0	0%	2914	98%
S/SCEG/CPLE-SC//	0	377	504	439	0.16%	24	1%	0	0%	27	1%	2925	98%
S/TVA/LGEE-SOCO//	0	2,648	2,648	410	0.02%	36	1%	0	0%	16	1%	2924	98%
S/DUK/DUK-SC//	0	1,238	2,726	389	0.04%	98	3%	0	0%	183	6%	2695	91%
S/SC/CPLE-SOCO//	0	3,466	3,895	381	0.02%	37	1%	0	0%	28	1%	2911	98%
S/CPL/DUK-TVA//	0	276	276	352	0.17%	26	1%	0	0%	23	1%	2927	98%
S/SCEG/DUK-SCEG//	0	105	353	347	0.54%	49	2%	5	0%	856	29%	2066	69%
S/DUK/CPLE-CPLW//	0	235	454	334	0.20%	23	1%	0	0%	893	30%	2060	69%
S/MEAG/FPC-MEAG//	21	104	187	329	0.40%	65	2%	1	0%	0	0%	2910	98%
S/MEAG/MEAG-JEA//	0	196	266	328	0.23%	54	2%	0	0%	13	0%	2909	98%
S/TVA/CPLW-TVA//	0	276	276	312	0.15%	22	1%	0	0%	8	0%	2946	99%
S/DUK/DUK-SCEG//	0	109	157	306	0.43%	51	2%	0	0%	502	17%	2423	81%
S/SCEG/SCEG-CPLE//	0	632	1,001	303	0.06%	50	2%	0	0%	6	0%	2920	98%
S/SCEG/SOCO-SC//	0	345	2,479	303	0.07%	47	2%	0	0%	770	26%	2159	73%
SS/GTC/GTC-DUK//	0	287	396	274	0.14%	6	0%	0	0%	85	3%	2885	97%
S/MEAG/JEA-MEAG//	21	104	187	264	0.32%	60	2%	0	0%	0	0%	2916	98%
S/SCEG/CPLE-SCEG//	0	377	416	256	0.14%	32	1%	0	0%	677	23%	2267	76%
S/DUK/SOCO-TVA//	208	692	692	248	0.05%	10	0%	0	0%	0	0%	2966	100%
S/MEAG/SCEG-JEA//	None	None	None	246	0.00%	90	3%	0	0%	0	0%	2886	0%
SS/SOCO/SC-SOCO//	52	66	163	245	0.45%	10	0%	9	0%	0	0%	2957	99%
F/FPC/SOCO-FPC//	0	211	473	244	0.16%	52	2%	5	0%	280	9%	2639	89%
SS/GTC/SC-GTC//	0	25	62	222	1.09%	8	0%	21	1%	20	1%	2927	98%
S/MEAG/FPC-SCEG//	None	None	None	221	0.00%	127	4%	0	0%	0	0%	2849	0%
SS/GTC/FPC-SOCO//	None	None	None	212	0.00%	32	1%	0	0%	0	0%	2944	0%
S/DUK/DUK-TVA//	0	692	692	199	0.04%	46	2%	0	0%	54	2%	2876	97%
SS/GTC/FPC-SCEG//	None	None	None	191	0.00%	28	1%	0	0%	0	0%	2948	0%
S/CPL/TVA-DUK//	29	276	276	176	0.09%	18	1%	0	0%	0	0%	2958	99%
SS/GTC/GTC-SOCO//	20,000	20,000	20,000	159	0.00%	3	0%	0	0%	0	0%	2973	100%
SS/GTC/SOCO-JEA//	None	None	None	152	0.00%	25	1%	0	0%	0	0%	2951	0%
S/SCEG/SC-SCEG//	0	1,136	5,138	150	0.01%	20	1%	0	0%	212	7%	2744	92%
SS/GTC/JEA-GTC//	89	490	857	150	0.04%	36	1%	0	0%	0	0%	2940	99%
S/DUK/SCEG-DUK//	0	648	650	148	0.04%	14	0%	0	0%	198	7%	2764	93%
S/DUK/CPLW-DUK//	0	1,043	1,243	147	0.02%	11	0%	0	0%	107	4%	2858	96%
S/TVA/DUK-SOCO//	0	343	357	146	0.06%	7	0%	1	0%	96	3%	2872	97%
S/SC/SC-SOCO//	679	2,824	3,779	141	0.01%	15	1%	0	0%	0	0%	2961	99%
S/TVA/TVA-CPLW//	0	276	276	141	0.07%	10	0%	0	0%	40	1%	2926	98%
S/MEAG/DUK-SOCO//	None	None	None	134	0.00%	7	0%	0	0%	0	0%	2969	0%
F/FPC/SOCO-TEC//	0	211	473	133	0.08%	14	0%	2	0%	288	10%	2672	90%
S/DUK/SCEG-TVA//	0	648	650	128	0.03%	15	1%	0	0%	39	1%	2922	98%
S/CPL/DUK-SCEG//	3	363	363	126	0.05%	20	1%	0	0%	2	0%	2954	99%
S/DUK/DUK-CPLE//	0	1,974	6,236	126	0.01%	20	1%	0	0%	157	5%	2799	94%
S/SC/SOCO-SCEG//	0	1,348	2,461	120	0.01%	17	1%	0	0%	190	6%	2769	93%
SS/SOCO/SCEG-TVA/MULTIPATHALIAS/	0	113	131	117	0.15%	8	0%	3	0%	63	2%	2902	98%
S/DUK/SC-CPLE//	0	2,088	2,901	104	0.01%	10	0%	0	0%	122	4%	2844	96%
S/TVA/DUK-AECI//	0	343	357	101	0.05%	14	0%	0	0%	220	7%	2742	92%
S/TVA/LGEE-DUK//	0	357	357	99	0.04%	10	0%	0	0%	4	0%	2962	100%
SS/GTC/FPC-DUK//	None	None	None	96	0.00%	15	1%	0	0%	0	0%	2961	0%
S/DUK/SOCO-SCEG//	0	109	157	90	0.13%	19	1%	0	0%	559	19%	2398	81%
S/SC/SCEG-DUK//	1,355	3,020	3,386	85	0.00%	9	0%	0	0%	0	0%	2967	100%
S/TVA/AECI-TVA//	0	41	346	83	0.11%	5	0%	4	0%	981	33%	1986	67%
S/MEAG/MEAG-GTC//	2,554	2,786	3,208	79	0.00%	5	0%	0	0%	0	0%	2971	100%

Appendix A (continued)

Segment	ATC				Loading	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max	MWhs	Factor	Intervals	%	Intervals	%	Intervals	%	Intervals	%
SS/SOCO/SC-FL/MULTIPATHALIAS/	52	66	163	70	0.13%	7	0%	1	0%	0	0%	2968	100%
S/MEAG/MEAG-DUK//	0	57	123	69	0.22%	5	0%	3	0%	228	8%	2740	92%
SS/GTC/SCEG-JEA//	None	None	None	67	0.00%	14	0%	0	0%	0	0%	2962	0%
S/MEAG/SOCO-DUK//	None	None	None	61	0.00%	4	0%	0	0%	0	0%	2972	0%
S/DUK/TVA-SOCO//	92	692	692	60	0.01%	3	0%	0	0%	0	0%	2973	100%
S/MEAG/MEAG-SC//	0	1	56	57	0.61%	5	0%	2	0%	2,148	72%	821	28%
S/MEAG/DUK-FPC//	None	None	None	56	0.00%	15	1%	0	0%	0	0%	2961	0%
S/SCEG/DUK-SC//	0	117	415	54	0.06%	9	0%	1	0%	10	0%	2956	99%
S/MEAG/TVA-JEA//	None	None	None	50	0.00%	6	0%	0	0%	0	0%	2970	0%
SS/GTC/MEAG-GTC//	8,679	8,885	9,274	47	0.00%	5	0%	0	0%	0	0%	2971	100%
S/MEAG/SCEG-SOCO//	None	None	None	46	0.00%	18	1%	0	0%	0	0%	2958	0%
S/SCEG/SOCO-DUK//	418	737	848	45	0.01%	8	0%	0	0%	0	0%	2968	100%
SS/GTC/MEAG-SC//	None	None	None	44	0.00%	2	0%	0	0%	0	0%	2974	0%
S/SCEG/CPLE-DUK//	8	377	529	42	0.02%	1	0%	0	0%	0	0%	2975	100%
S/MEAG/SOCO-SCEG//	None	None	None	39	0.00%	21	1%	0	0%	0	0%	2955	0%
S/SC/SCEG-SOCO//	1,011	2,867	3,232	39	0.00%	10	0%	0	0%	0	0%	2966	100%
SS/SOCO/TVA-SC/MULTIPATHALIAS/	0	112	298	39	0.05%	9	0%	0	0%	155	5%	2812	94%
S/CPL/SC-CPLE//	0	1,627	2,975	38	0.00%	10	0%	0	0%	153	5%	2813	95%
S/SC/SOCO-CPLE//	0	683	2,570	38	0.01%	10	0%	0	0%	683	23%	2283	77%
SS/GTC/SCEG-SOCO//	None	None	None	38	0.00%	4	0%	0	0%	0	0%	2972	0%
S/DUK/TVA-CPLE//	0	692	692	37	0.01%	8	0%	0	0%	260	9%	2708	91%
SS/GTC/TVA-GTC//	0	211	305	37	0.03%	2	0%	1	0%	104	3%	2869	96%
S/DUK/CPLE-SCEG//	0	109	157	36	0.05%	2	0%	0	0%	625	21%	2349	79%
SS/GTC/DUK-JEA//	None	None	None	35	0.00%	4	0%	0	0%	0	0%	2972	0%
S/TVA/CPLW-AECI//	0	276	276	34	0.02%	4	0%	0	0%	192	6%	2780	93%
S/SCEG/DUK-SOCO//	6	117	436	31	0.03%	1	0%	1	0%	0	0%	2974	100%
S/SC/CPLE-SCEG//	0	1,364	4,314	30	0.00%	3	0%	0	0%	191	6%	2782	93%
S/DUK/CPLW-CPLE//	0	1,009	1,243	29	0.00%	7	0%	0	0%	242	8%	2727	92%
S/MEAG/GTC-MEAG//	1,495	1,885	2,112	25	0.00%	2	0%	0	0%	0	0%	2974	100%
S/MEAG/SOCO-SC//	None	None	None	25	0.00%	3	0%	0	0%	0	0%	2973	0%
SS/GTC/GTC-MEAG//	9,424	9,814	9,999	25	0.00%	2	0%	0	0%	0	0%	2974	100%
SS/GTC/SOCO-SCEG//	None	None	None	25	0.00%	4	0%	0	0%	0	0%	2972	0%
S/TVA/LGEE-CPLW//	0	276	276	21	0.01%	5	0%	0	0%	36	1%	2935	99%
S/SC/SOCO-DUK//	0	2,145	2,585	19	0.00%	5	0%	0	0%	132	4%	2839	95%
S/DUK/SCEG-CPLE//	0	648	650	18	0.00%	4	0%	0	0%	195	7%	2777	93%
S/DUK/SOCO-CPLW//	0	196	454	18	0.01%	4	0%	0	0%	986	33%	1986	67%
S/MEAG/MEAG-FPC//	0	196	266	18	0.01%	4	0%	0	0%	13	0%	2959	99%
S/MEAG/SC-JEA//	None	None	None	18	0.00%	3	0%	0	0%	0	0%	2973	0%
S/MEAG/SCEG-FPC//	None	None	None	13	0.00%	6	0%	0	0%	0	0%	2970	0%
S/DUK/TVA-SC//	0	692	692	12	0.00%	1	0%	0	0%	152	5%	2823	95%
S/MEAG/JEA-SC//	None	None	None	11	0.00%	4	0%	0	0%	0	0%	2972	0%
S/MEAG/TVA-FPC//	None	None	None	11	0.00%	4	0%	0	0%	0	0%	2972	0%
S/MEAG/JEA-DUK//	None	None	None	10	0.00%	4	0%	0	0%	0	0%	2972	0%
S/TVA/AECI-DUK//	0	41	346	10	0.01%	1	0%	1	0%	977	33%	1997	67%
S/TVA/SOCO-CPLW//	197	276	276	10	0.00%	2	0%	0	0%	0	0%	2974	100%
SS/GTC/JEA-DUK//	None	None	None	9	0.00%	4	0%	0	0%	0	0%	2972	0%
S/MEAG/MEAG-SCEG//	7	8	10	7	0.11%	0	0%	4	0%	0	0%	2972	100%
S/MEAG/DUK-GTC//	None	None	None	6	0.00%	1	0%	0	0%	0	0%	2975	0%
S/MEAG/SC-MEAG//	4	59	68	6	0.02%	0	0%	2	0%	0	0%	2974	100%
S/MEAG/SCEG-GTC//	None	None	None	6	0.00%	2	0%	0	0%	0	0%	2974	0%
S/MEAG/SCEG-MEAG//	11	13	15	6	0.06%	0	0%	2	0%	0	0%	2974	100%
S/MEAG/SCEG-TVA//	None	None	None	6	0.00%	2	0%	0	0%	0	0%	2974	0%
S/SC/SC-SCEG//	756	2,583	9,195	6	0.00%	2	0%	0	0%	0	0%	2974	100%
S/SCEG/SC-SOCO//	1,427	4,479	6,075	6	0.00%	2	0%	0	0%	0	0%	2974	100%
S/TVA/CPLW-SOCO//	100	276	276	6	0.00%	1	0%	0	0%	0	0%	2975	100%
S/MEAG/JEA-TVA//	None	None	None	5	0.00%	4	0%	0	0%	0	0%	2972	0%
S/MEAG/TVA-SC//	None	None	None	4	0.00%	1	0%	0	0%	0	0%	2975	0%
S/TVA/AECI-CPLW//	0	41	276	4	0.01%	1	0%	0	0%	989	33%	1986	67%
S/TVA/SOCO-DUK//	157	357	357	4	0.00%	2	0%	0	0%	0	0%	2974	100%
SS/GTC/DUK-FPC//	None	None	None	4	0.00%	1	0%	0	0%	0	0%	2975	0%

Appendix A (continued)

Segment	ATC				Loading	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max	MWhs	Factor	Intervals	%	Intervals	%	Intervals	%	Intervals	%
S/MEAG/JEA-SOCO//	None	None	None	3	0.00%	1	0%	0	0%	0	0%	2975	0%
SS/GTC/GTC-JEA//	86	843	1,249	3	0.00%	3	0%	0	0%	0	0%	2973	100%
S/MEAG/TVA-DUK//	None	None	None	2	0.00%	1	0%	0	0%	0	0%	2975	0%
S/CPL/DUK-SC//	0	1,886	4,270	1	0.00%	1	0%	0	0%	36	1%	2939	99%
S/DUK/SCEG-SC//	254	649	650	1	0.00%	1	0%	0	0%	0	0%	2975	100%
SS/GTC/JEA-SCEG//	None	None	None	1	0.00%	1	0%	0	0%	0	0%	2975	0%
F/FPC/GVL-FPC//	0	377	463	0	0.00%	0	0%	0	0%	4	0%	2972	100%
F/FPC/GVL-FPC/GVL-FPCS/	0	377	463	0	0.00%	0	0%	0	0%	4	0%	2972	100%
F/FPC/GVL-SEC/GVL-SSN/	171	394	459	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/GVL-SOCO//	0	191	266	0	0.00%	0	0%	0	0%	668	22%	2308	78%
F/FPC/GVL-TEC//	171	394	465	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/SEC-FPC/SSN-FPC/	0	167	713	0	0.00%	0	0%	0	0%	728	24%	2248	76%
F/FPC/SEC-FPC/SSN-FPCS/	0	167	713	0	0.00%	0	0%	0	0%	728	24%	2248	76%
F/FPC/SEC-FPC/SSO-FPC/	171	523	1,185	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/SEC-FPC/SSO-FPCS/	171	523	1,185	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/SEC-GVL/SSN-GVL/	117	248	318	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/SEC-GVL/SSO-GVL/	0	195	327	0	0.00%	0	0%	0	0%	216	7%	2760	93%
F/FPC/SEC-SEC/SSO-SSN/	0	370	895	0	0.00%	0	0%	0	0%	216	7%	2760	93%
F/FPC/SEC-SOCO/SSN-SOCO/	0	191	266	0	0.00%	0	0%	0	0%	668	22%	2308	78%
F/FPC/SEC-SOCO/SSO-SOCO/	0	179	266	0	0.00%	0	0%	0	0%	800	27%	2176	73%
F/FPC/SEC-TEC/SSN-TEC/	538	748	1,100	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/SEC-TEC/SSO-TEC/	0	370	895	0	0.00%	0	0%	0	0%	216	7%	2760	93%
F/FPC/SOCO-FPC/SOCO-FPCS/	0	211	473	0	0.00%	0	0%	0	0%	300	10%	2676	90%
F/FPC/SOCO-GVL//	0	171	309	0	0.00%	0	0%	0	0%	284	10%	2692	90%
F/FPC/SOCO-SEC/SOCO-SSN/	0	211	473	0	0.00%	0	0%	0	0%	280	9%	2696	91%
F/FPC/TEC-FPC/TEC-FPCS/	9	2,463	3,307	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/TEC-GVL//	116	248	327	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/FPC/TEC-SEC/TEC-SSN/	188	1,070	1,471	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/JEA/JEA-SEC/JEA-SSN/	273	518	518	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/JEA/SEC-JEA/SSN-JEA/	487	487	487	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/JEA/SEC-SOCO/SSN-SOCO/	365	637	637	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/JEA/SOCO-SEC/SOCO-SSN/	0	502	522	0	0.00%	0	0%	0	0%	4	0%	2972	100%
F/SEC/FPC-JEA//	0	637	637	0	0.00%	0	0%	0	0%	16	1%	2960	99%
F/SEC/FPC-SEC/FPC-SSN/	0	1,028	1,430	0	0.00%	0	0%	0	0%	16	1%	2960	99%
F/SEC/JEA-FPC//	0	637	637	0	0.00%	0	0%	0	0%	12	0%	2964	100%
F/SEC/JEA-SEC/JEA-SSN/	391	637	637	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/SEC/SEC-FPC/SSN-FPC/	0	383	970	0	0.00%	0	0%	0	0%	143	5%	2833	95%
F/SEC/SEC-FPC/SSO-FPC/	171	523	1,185	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/SEC/SEC-JEA/SSN-JEA/	611	637	637	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/SEC/SEC-TEC/SSO-TEC/	0	370	729	0	0.00%	0	0%	0	0%	216	7%	2760	93%
F/SEC/TEC-FPC//	58	729	729	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/SEC/TEC-SEC/TEC-SSO/	168	529	729	0	0.00%	0	0%	0	0%	0	0%	2976	100%
F/TEC/SEC-FPC/SSO-FPC/	0	370	729	0	0.00%	0	0%	0	0%	220	7%	2756	93%
F/TEC/SEC-TEC/SSO-TEC/	0	370	729	0	0.00%	0	0%	0	0%	216	7%	2760	93%
F/TEC/TEC-SEC/TEC-SSO/	168	529	729	0	0.00%	0	0%	0	0%	0	0%	2976	100%
P/LGEE/TVA-LGEE//	0	1,361	1,424	0	0.00%	0	0%	0	0%	77	3%	2899	97%
S/CPL/CPLW-DUK//	0	713	1,216	0	0.00%	0	0%	0	0%	129	4%	2847	96%
S/CPL/CPLW-TVA//	0	276	276	0	0.00%	0	0%	0	0%	145	5%	2831	95%
S/CPL/DUK-CPLW//	73	530	530	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/CPL/SC-DUK//	1,229	2,966	4,530	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/CPL/SC-SCEG//	3	363	363	0	0.00%	0	0%	0	0%	2	0%	2974	100%
S/CPL/SCEG-DUK//	0	618	618	0	0.00%	0	0%	0	0%	39	1%	2937	99%
S/CPL/SCEG-SC//	474	618	618	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%	128	4%	2848	96%
S/DUK/CPLE-DUK//	0	4,095	7,235	0	0.00%	0	0%	0	0%	219	7%	2757	93%
S/DUK/CPLE-SC//	0	1,518	2,752	0	0.00%	0	0%	0	0%	275	9%	2701	91%
S/DUK/CPLW-SC//	0	1,007	1,243	0	0.00%	0	0%	0	0%	160	5%	2816	95%
S/DUK/CPLW-SCEG//	0	109	157	0	0.00%	0	0%	0	0%	494	17%	2482	83%
S/DUK/CPLW-SOCO//	0	1,069	1,243	0	0.00%	0	0%	0	0%	46	2%	2930	98%
S/DUK/CPLW-TVA//	0	692	692	0	0.00%	0	0%	0	0%	22	1%	2954	99%

Appendix A (continued)

Segment	ATC				Loading	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max	MWhs	Factor	Intervals	%	Intervals	%	Intervals	%	Intervals	%
S/DUK/DUK-CPLW//	0	259	454	0	0.00%	0	0%	0	0%	855	29%	2121	71%
S/DUK/SC-CPLW//	0	149	454	0	0.00%	0	0%	0	0%	1,046	35%	1930	65%
S/DUK/SC-DUK//	0	2,030	2,901	0	0.00%	0	0%	0	0%	165	6%	2811	94%
S/DUK/SC-SCEG//	0	109	157	0	0.00%	0	0%	0	0%	477	16%	2499	84%
S/DUK/SC-SOCO//	727	2,058	2,335	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/DUK/SC-TVA//	208	692	692	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/DUK/SCEG-CPLW//	0	133	454	0	0.00%	0	0%	0	0%	1,131	38%	1845	62%
S/DUK/TVA-CPLW//	0	227	454	0	0.00%	0	0%	0	0%	886	30%	2090	70%
S/DUK/TVA-SCEG//	0	109	157	0	0.00%	0	0%	0	0%	581	20%	2395	80%
S/MEAG/DUK-MEAG//	0	85	152	0	0.00%	0	0%	0	0%	202	7%	2774	93%
S/MEAG/MEAG-TVA//	0	122	175	0	0.00%	0	0%	0	0%	348	12%	2628	88%
S/MEAG/TVA-MEAG//	0	60	183	0	0.00%	0	0%	0	0%	138	5%	2838	95%
S/SC/CPLE-DUK//	3,311	3,625	4,303	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SC/DUK-CPLE//	2,982	3,745	4,059	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SC/DUK-SCEG//	1,329	1,923	4,059	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SC/DUK-SOCO//	601	3,497	3,881	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SC/SC-CPLE//	0	2,454	4,442	0	0.00%	0	0%	0	0%	6	0%	2970	100%
S/SC/SC-DUK//	604	2,489	4,303	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SC/SCEG-CPLE//	0	2,230	3,146	0	0.00%	0	0%	0	0%	6	0%	2970	100%
S/SCEG/DUK-CPLE//	6	117	436	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/SCEG/SC-CPLE//	0	632	1,001	0	0.00%	0	0%	0	0%	4	0%	2972	100%
S/SCEG/SC-DUK//	418	737	848	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/TVA/AECI-LGEE//	0	0	345	0	0.00%	0	0%	0	0%	1,832	62%	1144	38%
S/TVA/CPLW-DUK//	100	276	276	0	0.00%	0	0%	0	0%	0	0%	2976	100%
S/TVA/CPLW-LGEE//	0	276	276	0	0.00%	0	0%	0	0%	1,276	43%	1700	57%
S/TVA/DUK-CPLW//	0	276	276	0	0.00%	0	0%	0	0%	96	3%	2880	97%
S/TVA/DUK-LGEE//	0	193	357	0	0.00%	0	0%	0	0%	1,332	45%	1644	55%
S/TVA/LGEE-AECI//	0	600	600	0	0.00%	0	0%	0	0%	44	1%	2932	99%
S/TVA/LGEE-TVA//	0	2,648	2,648	0	0.00%	0	0%	0	0%	16	1%	2960	99%
S/TVA/SOCO-LGEE//	0	182	2,648	0	0.00%	0	0%	0	0%	1,376	46%	1600	54%
S/TVA/TVA-AECI//	0	600	600	0	0.00%	0	0%	0	0%	52	2%	2924	98%
S/TVA/TVA-LGEE//	0	280	2,648	0	0.00%	0	0%	0	0%	1,280	43%	1696	57%
SS/GTC/GTC-FPC//	86	843	1,249	0	0.00%	0	0%	0	0%	0	0%	2976	100%
SS/GTC/GTC-GTC//	25,192	25,692	25,935	0	0.00%	0	0%	0	0%	0	0%	2976	100%
SS/GTC/GTC-SC//	0	248	293	0	0.00%	0	0%	0	0%	176	6%	2800	94%
SS/GTC/GTC-SCEG//	0	36	46	0	0.00%	0	0%	0	0%	28	1%	2948	99%
SS/GTC/GTC-TVA//	0	524	657	0	0.00%	0	0%	0	0%	72	2%	2904	98%
SS/SOCO/DUK-SC/MULTIPATHALIAS/	0	109	276	0	0.00%	0	0%	0	0%	170	6%	2806	94%
SS/SOCO/DUK-SCEG/MULTIPATHALIAS/	0	65	83	0	0.00%	0	0%	0	0%	35	1%	2941	99%
SS/SOCO/DUK-TVA/MULTIPATHALIAS/	0	465	650	0	0.00%	0	0%	0	0%	38	1%	2938	99%
SS/SOCO/SC-DUK/MULTIPATHALIAS/	0	66	163	0	0.00%	0	0%	0	0%	18	1%	2958	99%
SS/SOCO/SC-SCEG/MULTIPATHALIAS/	1	59	83	0	0.00%	0	0%	0	0%	20	1%	2956	99%
SS/SOCO/SC-TVA/MULTIPATHALIAS/	0	66	163	0	0.00%	0	0%	0	0%	23	1%	2953	99%
SS/SOCO/SCEG-DUK/MULTIPATHALIAS/	0	113	131	0	0.00%	0	0%	0	0%	58	2%	2918	98%
SS/SOCO/SCEG-SC/MULTIPATHALIAS/	0	95	125	0	0.00%	0	0%	0	0%	195	7%	2781	93%
SS/SOCO/TVA-DUK/MULTIPATHALIAS/	0	423	630	0	0.00%	0	0%	0	0%	18	1%	2958	99%
SS/SOCO/TVA-SCEG/MULTIPATHALIAS/	1	65	83	0	0.00%	0	0%	0	0%	20	1%	2956	99%