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

FOR October 2023

Prepared by:

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Independent Market Auditor

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I. OVERVIEW

This is the Auditor report for the month of October 2023 on the Southeast Energy Exchange Market (SEEM). SEEM is a regional energy market that uses a centralized intra-hour energy exchange to create bilateral trade among its trading participants. It has operated since November 2022 and now has 24 members.¹ Trading volumes increased from 66,000 MWh in September to 76,000 MWh in October, which was substantially above the market-to-date monthly average of 52,000 MWh.

SEEM relies on individual transmission segments connecting each member to evaluate and clear trades, including trades spanning 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, seven percent of the time availability was zero. Due to transmission constraints, transmission loss costs, and participant-specific constraints, about 18,000 MWh of potential economic exchanges were left uncleared in October. 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 an automated multi-lateral market that accepts bids and offers from the SEEM members and clears individual bilateral trades every 15 minutes using available transmission capability (ATC) of the SEEM members under a transmission service designed for SEEM called Non-Firm Energy Exchange Transmission Service (NFEETS). The trades are cleared to maximize the trading benefit among all participants. The 15-minute trading extends the prevailing hour-ahead bilateral trading in the region and allows for fuller utilization of the transmission system.

SEEM is governed by the SEEM Membership Board. The automated architecture of SEEM was developed and is operated by Hartigen and 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

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 June 2023 are: Seminole Electric Cooperative; Tampa Electric Company; Duke Energy Florida; Florida Power Corporation; TEA Gainesville Regional Utilities; and TEA JEA.

respond to inquiries made by regulators and other oversight authorities, including FERC. We received no such inquiries during the period of this report.

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). Section II of this report fulfills our duty 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 inquiries in October. An inquiry concerning data confidentiality was received in September and is being resolved by the SEEM Board.

In the remainder of the report (Section II), we provide the results of our analysis of the first main area of responsibility: to analyze of 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 data from the SEEM market to support the calculation of these screens. With the exception of 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 October 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. The SEEM model uses a static path configuration database to retrieve possible paths associated with the sources and sinks offered and bid in each interval. We saved a snapshot of this database and compared it to the path configuration database used at the start of each month. We identify and evaluate any changes. We found no changes in October and therefore we conclude the network map is accurate for the current sources and sinks participating in SEEM.

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

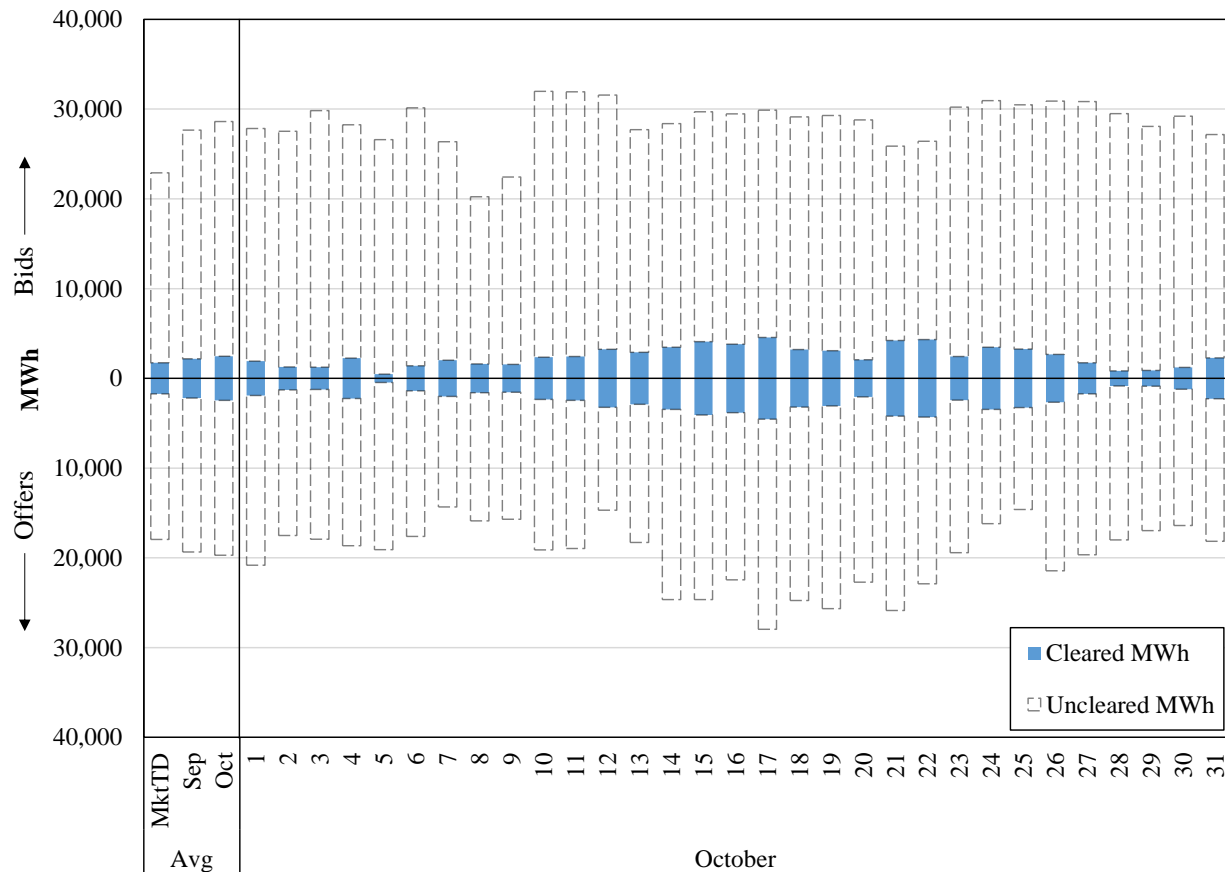
B. Market Activity

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 66,000 MWh of energy in October, averaging approximately 2,100 MWh per day. Figure 1 shows the daily SEEM bids and offers for October. 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. The left side columns show activity relative to the previous month and relative to the market to date (MktTD). MktTD is the monthly average of all months since SEEM began in November 2022 (i.e., the November 2022 – October 2023 average).

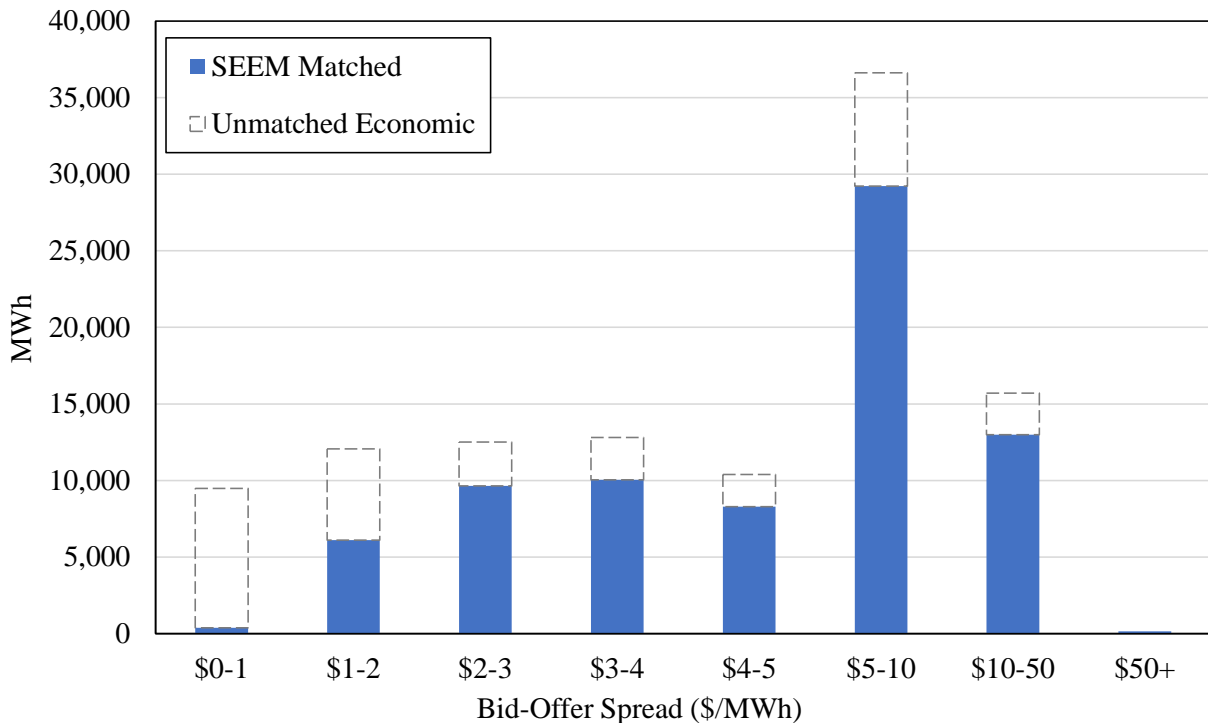
Figure 1: Daily Bids and Offers
October 2023



The average daily bid and offer quantities were higher in October than in September and higher than the MktTD average. Much of the volume increase relative to MktTD is linked to the new participants that started trading at the end of June. The increase in October over September continues the overall trend of increased participation since the SEEM opening in November 2022. As the left-side monthly and MktTD bars show, total liquidity (cleared and uncleared bids and offers) increased modestly.

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 is 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 2 shows a summary of the cleared and uncleared matches. Each stacked bar shows the SEEM matches and the economic unmatched at the given bid-offer spread. For example, the first bar shows SEEM matches where bids exceed offers by up to \$1. The shadow boxes show the uncleared economic bids and offers that did not clear at each spread.

Figure 2: Cleared and Uncleared Economic Matches
October 2023



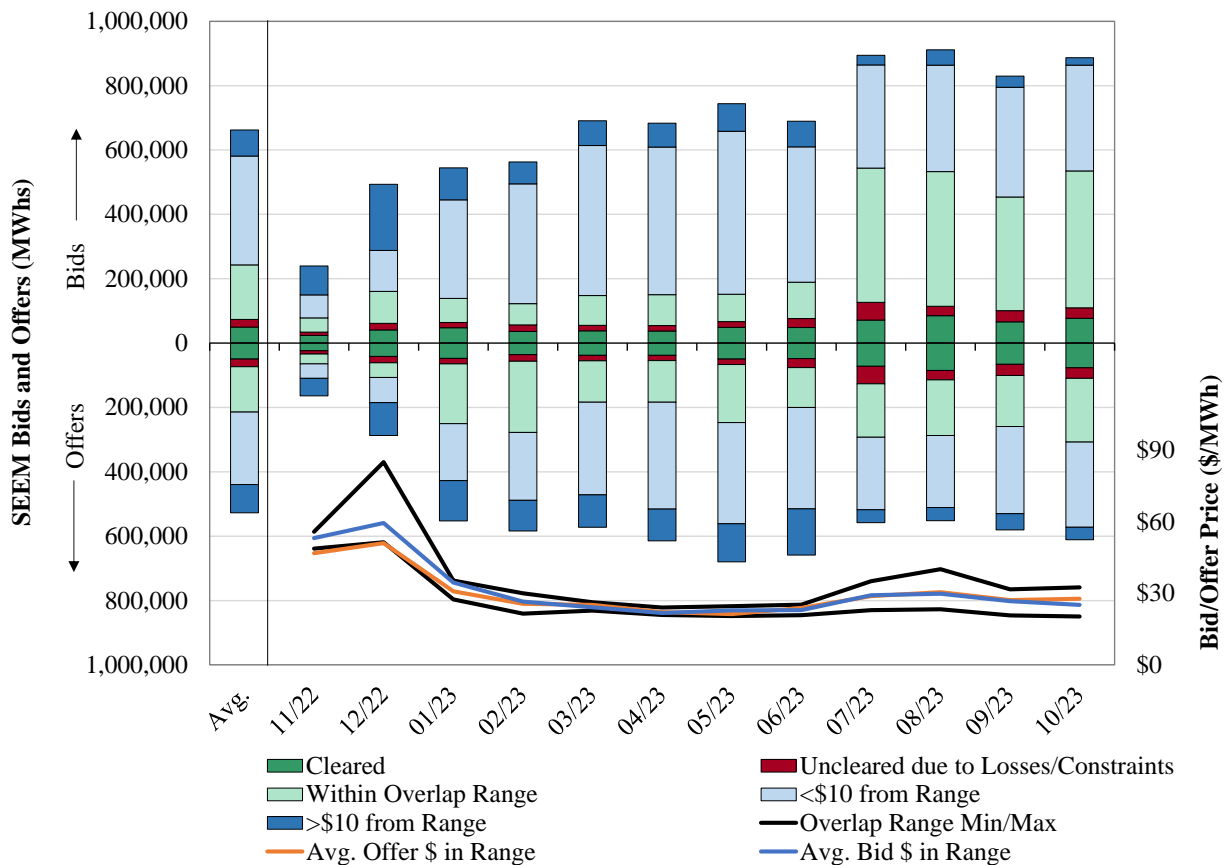
Average loss costs on the SEEM system is about \$2/MWh. About 18,000 MWh of uncleared bids/offers could settle at a price that could pay the average \$2/MWh losses. In September, the

amount was 20,000 MWh. Without a complex simulation, there is not a straightforward way to determine why these bids and offers did not clear. Among the possibilities are transmission constraints and the need to use segments that had higher-than-average cost of losses. Counterparty constraints could also explain unmatched bids and offers.

There are also rare instances when transactions are matched but fail to clear the transmission scheduling process. These instances are attributable to occasional delays in approving transmission service requests (TSRs), so the tag is denied for being late. It may also result from insufficient ATC when the TSR is processed. SEEM downloads ATC values from OASIS twice an hour, so it is possible that real-time changes occur that result in insufficient ATC by the time the TSR is submitted. These failed transactions were less than 1/10 percent of the total bid/offered quantities.

Figure 2 shows a monthly comparison of bids, offers, and prices.

Figure 3: Bid and Offer Evaluation



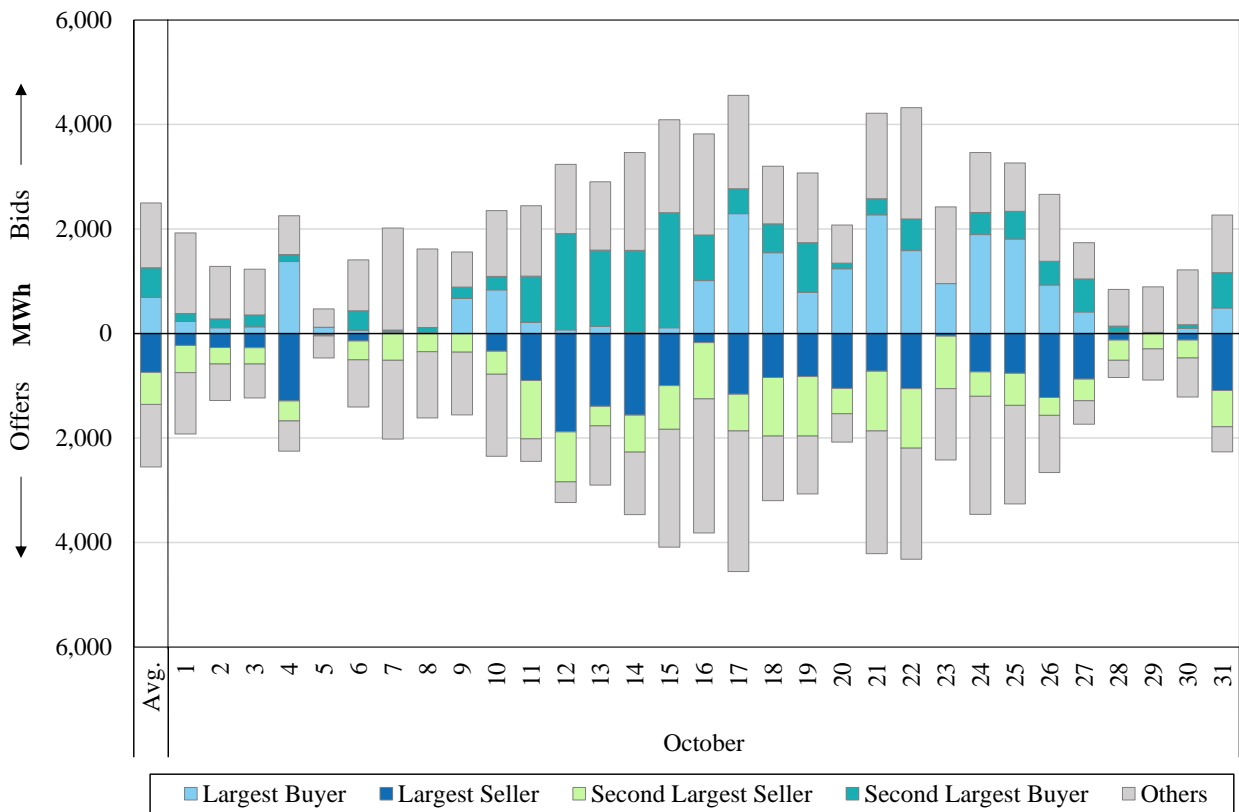
Each bar is divided to show volume of cleared bids/offers (dark green) and various categories of uncleared MW. The red segment shows uncleared economic bids and offers. These are the

uncleared bids and offers discussed in Figure 2. The light green bars show bids and offers that were not cleared but were within the cleared bid-offer spread - bids that are higher than the lowest cleared bid and offers that are lower than the highest cleared offer. The bid-offer spread is shown in the black lines in the bottom panel of the figure. These did not clear because potential trades with economic bids or offers were cleared to other counterparties.

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 – participants likely do not expect these to clear.

Figure 4 shows more detail on the matched bids and offers by showing the matches by market largest 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 4: Volumes of Matched Bids and Offers
October 2023



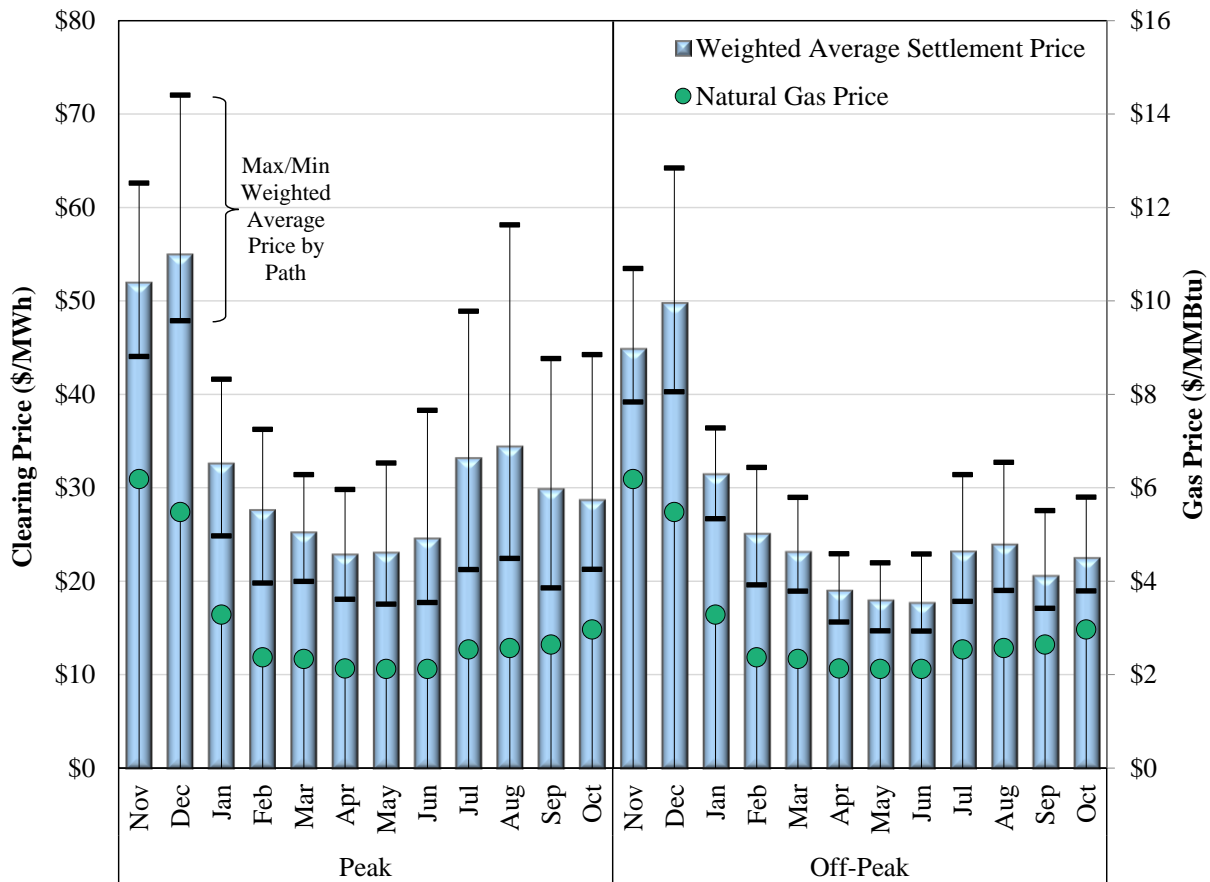
The figure shows certain buyers and sellers comprise significant shares of the transaction activity. Twenty-eight percent of the sales were made by a single seller and 26 percent of the purchases

were made by a single buyer. With the addition of new participants these concentration statistics have fallen since June.

2. Network Usage

In this subsection, we report on the usage of the SEEM network. Figure 5 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 in many hours. The figure also shows a price spread that is caused by differences in location.

Figure 5: Monthly Clearing Prices and Natural Gas Costs



We evaluate the price spreads in more detail in the following two figures. Figure 4 shows the average daily peak-hour prices for October and the prices on the highest-priced and lowest-priced paths for each day. Figure 7 is the same figure but for off-peak hours. The figures shown in the left column are the October prices compared to the previous month. It shows the average prices are slightly lower than the prices in September and lower than the average prices since market opening.

Figure 6: Average SEEM Clearing Prices: System-Wide and by Path
Peak Hours – October 2023

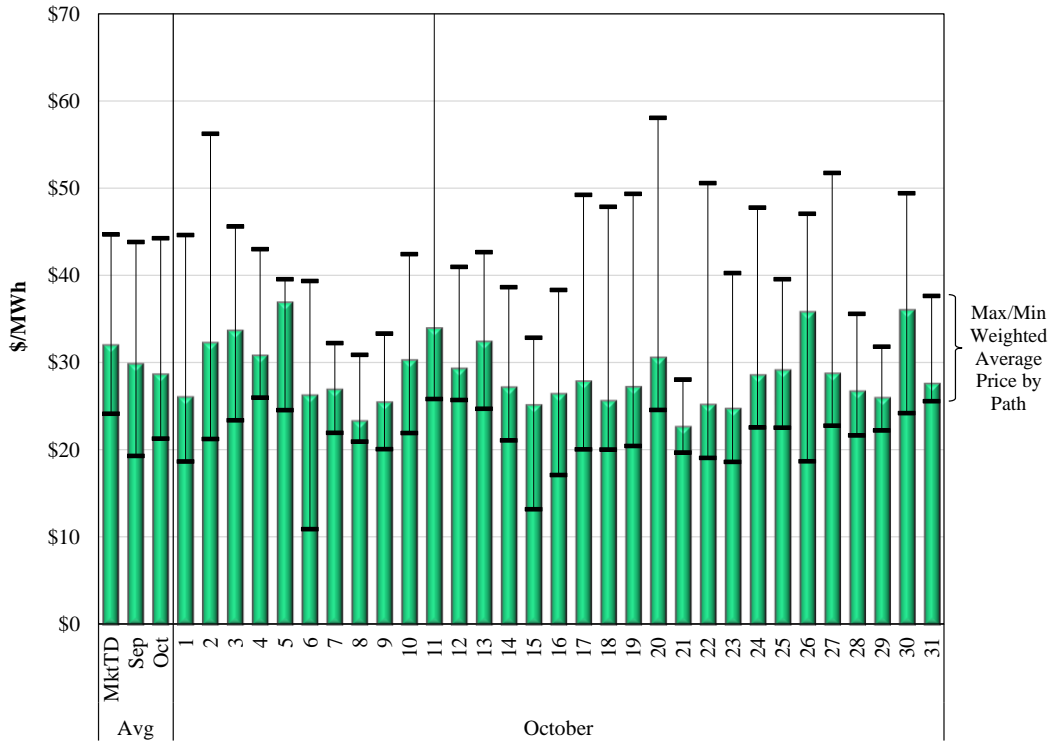
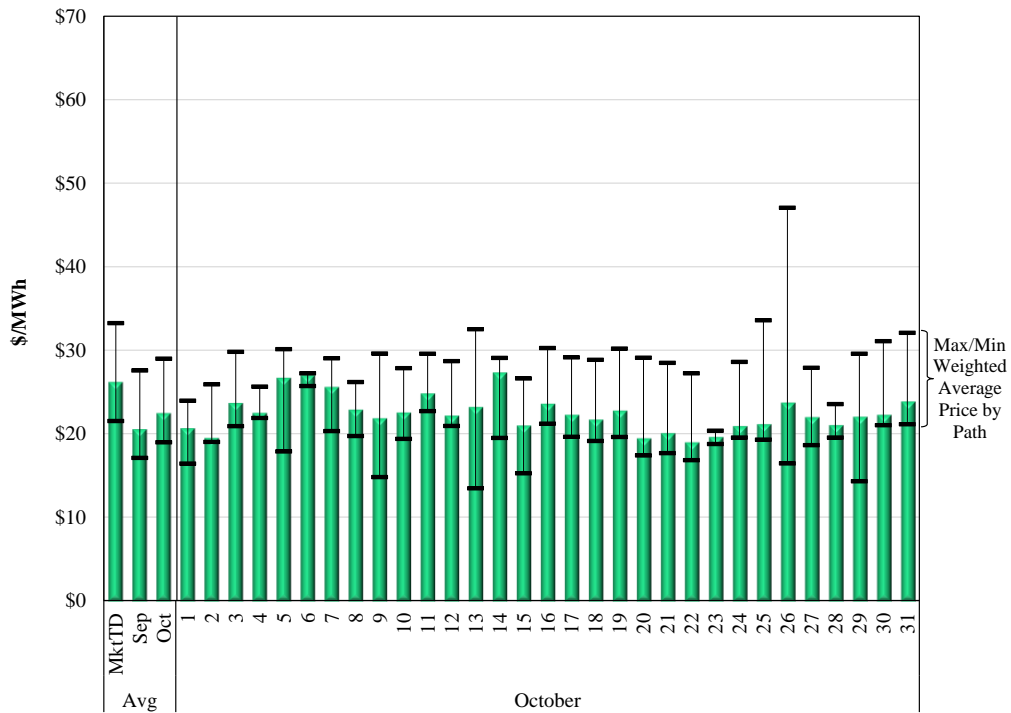


Figure 7: Average SEEM Clearing Prices: System-Wide and by Path
Off-Peak Hours – October 2023



The two figures show that the value of transactions can vary significantly by path, 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. There are 240 unique segments used in SEEM. We evaluated data including the median, maximum, and minimum ATC values over all intervals for each segment, as well as the total MWh that cleared over each segment. We 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 the ATC and schedule volumes, 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);
- (2) Fully Used, ATC was used up for the interval;²
- (3) Unavailable, no ATC;³ and
- (4) Uncleared (no schedules on the segment).

In reporting the usage of each segment, we refer to a “segment-intervals” which is an observation in a single interval on one segment. Table 1 shows an excerpt of our statistics. The table displays the 33 segments that had more than 1,000 MWh of transactions scheduled during the month. The full data for all segments with at least 20 MWh scheduled during the month is provided in Appendix A.

² ATC less the MW schedule was less than 4 MW (i.e., no additional SEEM transaction could be cleared).

³ ATC was less than 4 MW at the start of the interval.

Table 1: Most Utilized SEEM Segment Statistics
October 2023

Segment	ATC			Loading		Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max	MWhs	Factor	Intervals	%	Intervals	%	Intervals	%	Intervals	%
F/TEC/TEC-FPC//	0	1,459	2,489	18,865	0.018101	1,906	64%	0	0%	72	2%	998	34%
F/FPC/FPC-SOCO//	0	0	281	16,046	0.251182	720	24%	44	1%	1,604	54%	608	20%
SS/SOCO/FL-SOCO//	199	649	1,043	12,796	0.026604	806	27%	0	0%	0	0%	2170	73%
S/TVA/TVA-DUK//	0	355	355	10,979	0.042205	352	12%	6	0%	1	0%	2617	88%
F/FPC/TEC-SOCO//	0	0	281	9,660	0.148924	879	30%	94	3%	1,568	53%	435	15%
S/DUK/TVA-DUK//	0	692	692	9,525	0.021000	309	10%	17	1%	113	4%	2537	85%
S/TVA/TVA-SOCO//	0	2,920	2,945	9,220	0.004327	305	10%	0	0%	1	0%	2670	90%
F/FPC/TEC-FPC//	0	1,509	2,538	9,205	0.008537	1,187	40%	0	0%	60	2%	1729	58%
SS/SOCO/TVA-SOCO//	399	1,326	1,543	9,180	0.009731	296	10%	0	0%	0	0%	2680	90%
F/JEA/JEA-SOCO//	39	487	771	7,717	0.020207	962	32%	4	0%	0	0%	2010	68%
S/SC/SOCO-SC//	0	673	2,204	4,728	0.009099	378	13%	15	1%	569	19%	2014	68%
S/DUK/SOCO-DUK//	0	1,215	2,114	4,647	0.005444	348	12%	3	0%	112	4%	2513	84%
S/CPL/DUK-CPLE//	993	3,285	6,519	3,799	0.001529	376	13%	0	0%	0	0%	2600	87%
SS/SOCO/SOCO-FL//	366	1,265	1,498	3,599	0.003942	430	14%	0	0%	0	0%	2546	86%
SS/SOCO/SOCO-SOCO//	39,816	43,556	43,556	3,051	0.000094	148	5%	0	0%	0	0%	2828	95%
SS/SOCO/FL-SC/MULTIPATHALIAS/	0	444	696	2,665	0.008244	260	9%	9	0%	6	0%	2701	91%
S/DUK/TVA-CPLE//	0	692	692	2,548	0.005274	182	6%	4	0%	40	1%	2750	92%
S/SCEG/SOCO-SCEG//	0	327	1,561	2,468	0.009056	215	7%	1	0%	701	24%	2059	69%
SS/SOCO/SOCO-DUK//	-45	516	1,018	2,172	0.005611	178	6%	7	0%	7	0%	2784	94%
S/CPL/CPLE-DUK//	1,368	6,038	6,838	2,115	0.000498	138	5%	0	0%	0	0%	2838	95%
SS/SOCO/FL-SCEG/MULTIPATHALIAS/	5	113	154	2,072	0.024635	201	7%	21	1%	0	0%	2754	93%
SS/SOCO/FL-DUK/MULTIPATHALIAS/	-45	467	863	1,832	0.005449	196	7%	7	0%	7	0%	2766	93%
S/DUK/CPL-SOCO//	0	1,397	2,335	1,781	0.001906	130	4%	0	0%	471	16%	2375	80%
P/LGEE/LGEE-TVA//	0	1,623	1,623	1,747	0.001555	171	6%	0	0%	75	3%	2730	92%
SS/GTC/SOCO-GTC//	13,090	13,672	14,838	1,653	0.000161	66	2%	0	0%	0	0%	2910	98%
S/CPL/SCEG-CPLE//	202	517	632	1,492	0.003931	243	8%	0	0%	0	0%	2733	92%
S/SC/DUK-SC//	1,380	2,235	2,990	1,454	0.000880	154	5%	0	0%	0	0%	2822	95%
F/JEA/JEA-SOCO//	0	637	803	1,399	0.003174	268	9%	0	0%	96	3%	2612	88%
S/DUK/SOCO-CPLE//	0	1,372	2,185	1,251	0.001242	223	7%	1	0%	60	2%	2692	90%
S/CPL/CPLE-SC//	0	2,817	4,319	1,224	0.000587	97	3%	0	0%	4	0%	2875	97%
S/SCEG/SCEG-CPLE//	461	672	1,091	1,122	0.002249	185	6%	0	0%	0	0%	2791	94%
S/TVA/SOCO-TVA//	0	2,940	2,940	1,068	0.000545	59	2%	0	0%	1	0%	2916	98%
S/SCEG/SCEG-SOCO//	773	2,405	5,026	1,010	0.000545	132	4%	0	0%	0	0%	2844	96%

These statistics indicate that among these most utilized segments, ATC remains available for SEEM trades. For example, many of the top paths have over 90 percent of their intervals uncleared. There are, however, numerous instances when segments are constrained. A constrained segment is one where either ATC is insufficient (less than 4 MW) prior to SEEM matching, or the segment is completely used by SEEM in at least one interval during the hour.

Table 2 show the summary usage for all segments. During the month, total segment intervals is the product of all 240 segments and the number of intervals during the month. In October, there were 714,240 segment intervals.⁴ The two circumstances (Cases (2) and (3)) when a segment is constrained occur in over 77,000 segment-intervals and almost always because the ATC was insufficient to schedule (i.e., ATC < 4 MW) rather than because it is filled by a SEEM match. The most common case in the data was “Uncleared” (Case 4), where ATC was available, but the segment was not used because no beneficial transactions were cleared by the SEEM model over the intervals. These cases represent over 621,000 segment intervals or 87 percent of all segment-

⁴ The maximum number of segment intervals in a month is (240 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 October, SEEM operated in all intervals.

intervals. The second most common case was case “Unavailable” (Case 3), where ATC was not sufficient to clear any SEEM transactions (77,315 or about 11 percent). The third most common case was “Partially Used” (Case 1), where the segment was partially used (14,847 or 2 percent). Finally, in a small number of intervals, the Segment ATC was “Fully Used” (Case 2), where the segment was completely scheduled in the interval (392).

Table 2: Summary of All Segments
October 2023

Segment	Case 1		Case 2		Case 3		Case 4	
	Partially Used		Fully Used		Unavailable		Uncleared	
	Intervals	%	Intervals	%	Intervals	%	Intervals	%
All Segments	14,847	2.1%	392	0.1%	77,315	10.8%	621,686	87.0%

Measuring transmission capacity using Case 2 and 3, the percentage of constrained segment intervals increased from 7 percent in September to 11 percent in October.

Further insight on constrained segments can be gained from Table 3. It shows the segments most often unavailable to SEEM (i.e., unavailable at least 20 percent of the intervals). There are a large number of paths with no ATC posted in any interval during the month, and so there is no activity recorded. For the other paths shown, like in previous months, these frequently-unavailable paths are generally unused when they are available (as indicated by the “Uncleared” column).

Table 3: Most Constrained SEEM Segments
October 2023

Segment	ATC			MWhs	Loading Factor	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max			Intervals	%	Intervals	%	Intervals	%	Intervals	%
F/JEA/SEC-JEA/SSN-JEA/	0	0	0	0	N/A	0	0%	0	0%	2,976	100%	0	0%
S/TVA/DUK-CPLW//	0	0	0	0	N/A	0	0%	0	0%	2,976	100%	0	0%
S/TVA/CPLW-DUK//	0	0	0	0	N/A	0	0%	0	0%	2,976	100%	0	0%
S/TVA/AECI-CPLW//	0	0	0	0	N/A	0	0%	0	0%	2,976	100%	0	0%
S/TVA/CPLW-AECI//	0	0	0	0	N/A	0	0%	0	0%	2,976	100%	0	0%
S/TVA/CPLW-LGEE//	0	0	0	0	N/A	0	0%	0	0%	2,976	100%	0	0%
S/TVA/CPLW-SOCO//	0	0	0	0	N/A	0	0%	0	0%	2,976	100%	0	0%
S/TVA/CPLW-TVA//	0	0	0	0	N/A	0	0%	0	0%	2,976	100%	0	0%
S/CPL/CPLW-TVA//	0	0	0	0	N/A	0	0%	0	0%	2,976	100%	0	0%
S/TVA/LGEE-CPLW//	0	0	0	0	N/A	0	0%	0	0%	2,976	100%	0	0%
S/TVA/SOCO-CPLW//	0	0	0	0	N/A	0	0%	0	0%	2,976	100%	0	0%
S/TVA/TVA-CPLW//	0	0	0	0	N/A	0	0%	0	0%	2,976	100%	0	0%
S/CPL/TVA-CPLW//	0	0	0	0	N/A	0	0%	0	0%	2,976	100%	0	0%
S/CPL/DUK-TVA//	0	0	0	0	N/A	0	0%	0	0%	2,976	100%	0	0%
S/CPL/TVA-DUK//	0	0	0	0	N/A	0	0%	0	0%	2,976	100%	0	0%
F/FPC/FPC-SOCO//	0	0	281	16,046	0.251182	720	24%	44	1%	1,604	54%	608	20%
F/FPC/SEC-SOCO/SSO-SOCO/	0	0	281	0	0.000000	0	0%	0	0%	1,588	53%	1,388	47%
F/FPC/TEC-SOCO//	0	0	281	9,660	0.148924	879	30%	94	3%	1,568	53%	435	15%
S/AECI/AECI-TVA//	0	1	664	376	0.003939	67	2%	0	0%	1,515	51%	1,394	47%
F/FPC/GVL-SOCO//	0	0	281	0	0.000000	0	0%	0	0%	1,496	50%	1,480	50%
F/FPC/SEC-SOCO/SSN-SOCO/	0	0	281	0	0.000000	0	0%	0	0%	1,496	50%	1,480	50%
S/MEAG/MEAG-DUK//	0	67	159	145	0.003011	20	1%	2	0%	840	28%	2,114	71%
S/TVA/DUK-TVA//	0	355	355	159	0.000859	7	0%	7	0%	827	28%	2,135	72%
S/TVA/DUK-AECI//	0	355	355	40	0.000213	3	0%	0	0%	803	27%	2,170	73%
S/SCEG/SOCO-SCEG//	0	327	1,561	2,468	0.009056	215	7%	1	0%	701	24%	2,059	69%
S/TVA/DUK-LGEE//	0	355	355	0	0.000000	0	0%	0	0%	615	21%	2,361	79%
S/SC/CPL-SCEG//	0	521	1,884	0	0.000000	0	0%	0	0%	581	20%	2,395	80%
S/SC/SOCO-SC//	0	673	2,204	4,728	0.009099	378	13%	15	1%	569	19%	2,014	68%

III. CONCLUSION

We reviewed the operation of SEEM for October 2023. 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 -- October 2023

Segment	ATC			Loading		Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max	MWhs	Factor	Intervals	%	Intervals	%	Intervals	%	Intervals	%
F/TEC/TEC-FPC//	0	1,459	2,489	18,865	0.018101	1,906	64%	0	0%	72	2%	998	34%
F/FPC/FPC-SOCO//	0	0	281	16,046	0.251182	720	24%	44	1%	1,604	54%	608	20%
SS/SOCO/FL-SOCO//	199	649	1,043	12,796	0.026604	806	27%	0	0%	0	0%	2170	73%
S/TVA/TVA-DUK//	0	355	355	10,979	0.042205	352	12%	6	0%	1	0%	2617	88%
F/FPC/TEC-SOCO//	0	0	281	9,660	0.148924	879	30%	94	3%	1,568	53%	435	15%
S/DUK/TVA-DUK//	0	692	692	9,525	0.021000	309	10%	17	1%	113	4%	2537	85%
S/TVA/TVA-SOCO//	0	2,920	2,945	9,220	0.004327	305	10%	0	0%	1	0%	2670	90%
F/FPC/TEC-FPC//	0	1,509	2,538	9,205	0.008537	1,187	40%	0	0%	60	2%	1729	58%
SS/SOCO/TVA-SOCO//	399	1,326	1,543	9,180	0.009731	296	10%	0	0%	0	0%	2680	90%
F/JEA/SOCO-JEA//	39	487	771	7,717	0.020207	962	32%	4	0%	0	0%	2010	68%
S/SC/SOCO-SC//	0	673	2,204	4,728	0.009099	378	13%	15	1%	569	19%	2014	68%
S/DUK/SOCO-DUK//	0	1,215	2,114	4,647	0.005444	348	12%	3	0%	112	4%	2513	84%
S/CPL/DUK-CPLE//	993	3,285	6,519	3,799	0.001529	376	13%	0	0%	0	0%	2600	87%
SS/SOCO/SOCO-FL//	366	1,265	1,498	3,599	0.003942	430	14%	0	0%	0	0%	2546	86%
SS/SOCO/SOCO-SOCO//	39,816	43,556	43,556	3,051	0.000094	148	5%	0	0%	0	0%	2828	95%
SS/SOCO/FL-SC/MULTIPATHALIAS//	0	444	696	2,665	0.008244	260	9%	9	0%	6	0%	2701	91%
S/DUK/TVA-CPLE//	0	692	692	2,548	0.005274	182	6%	4	0%	40	1%	2750	92%
S/SCEG/SOCO-SCEG//	0	327	1,561	2,468	0.009056	215	7%	1	0%	701	24%	2059	69%
SS/SOCO/SOCO-DUK//	-45	516	1,018	2,172	0.005611	178	6%	7	0%	7	0%	2784	94%
S/CPL/CPLE-DUK//	1,368	6,038	6,838	2,115	0.000498	138	5%	0	0%	0	0%	2838	95%
SS/SOCO/FL-SCEG/MULTIPATHALIAS//	5	113	154	2,072	0.024635	201	7%	21	1%	0	0%	2754	93%
SS/SOCO/FL-DUK/MULTIPATHALIAS//	-45	467	863	1,832	0.005449	196	7%	7	0%	7	0%	2766	93%
S/DUK/CPLE-SOCO//	0	1,397	2,335	1,781	0.001906	130	4%	0	0%	471	16%	2375	80%
P/LGEE/LGEE-TVA//	0	1,623	1,623	1,747	0.001555	171	6%	0	0%	75	3%	2730	92%
SS/GTC/SOCO-GTC//	13,090	13,672	14,838	1,653	0.000161	66	2%	0	0%	0	0%	2910	98%
S/CPL/SCEG-CPLE//	202	517	632	1,492	0.003931	243	8%	0	0%	0	0%	2733	92%
S/SC/DUK-SC//	1,380	2,235	2,990	1,454	0.000880	154	5%	0	0%	0	0%	2822	95%
F/JEA/JEA-SOCO//	0	637	803	1,399	0.003174	268	9%	0	0%	96	3%	2612	88%
S/DUK/SOCO-CPLE//	0	1,372	2,185	1,251	0.001242	223	7%	1	0%	60	2%	2692	90%
S/CPL/CPLE-SC//	0	2,817	4,319	1,224	0.000587	97	3%	0	0%	4	0%	2875	97%
S/SCEG/SCEG-CPLE//	461	672	1,091	1,122	0.002249	185	6%	0	0%	0	0%	2791	94%
S/TVA/SOCO-TVA//	0	2,940	2,940	1,068	0.000545	59	2%	0	0%	1	0%	2916	98%
S/SCEG/SCEG-SOCO//	773	2,405	5,026	1,010	0.000545	132	4%	0	0%	0	0%	2844	96%
S/TVA/LGEE-DUK//	0	355	355	911	0.003502	130	4%	0	0%	1	0%	2845	96%
S/SC/CPLE-SC//	0	473	2,349	866	0.002098	64	2%	2	0%	569	19%	2341	79%
S/TVA/LGEE-SOCO//	0	2,828	2,828	819	0.000394	64	2%	0	0%	1	0%	2911	98%
S/MEAG/FPC-MEAG//	0	110	260	781	0.009262	75	3%	8	0%	18	1%	2875	97%
F/FPC/SOCO-FPC//	0	319	485	759	0.003694	62	2%	23	1%	132	4%	2759	93%
SS/SOCO/SOCO-SCEG//	5	113	154	739	0.008786	61	2%	19	1%	0	0%	2896	97%
S/CPL/CPLE-SCEG//	0	297	412	714	0.003294	50	2%	3	0%	2	0%	2921	98%
SS/GTC/GTC-SOCO//	20,000	20,000	20,000	709	0.000048	20	1%	0	0%	0	0%	2956	99%
S/CPL/SC-CPLE//	0	1,388	2,382	637	0.000623	110	4%	0	0%	3	0%	2863	96%
S/SC/SOCO-CPLE//	751	2,400	2,848	637	0.000356	110	4%	0	0%	0	0%	2866	96%
S/SC/SCEG-SC//	1,141	1,650	2,528	590	0.000487	58	2%	0	0%	0	0%	2918	98%
S/DUK/SOCO-SC//	0	841	2,182	585	0.000991	57	2%	3	0%	508	17%	2408	81%
S/DUK/SCEG-SC//	288	664	664	582	0.001207	41	1%	0	0%	0	0%	2935	99%
S/MEAG/SOCO-MEAG//	2,935	3,086	3,485	559	0.000242	49	2%	0	0%	0	0%	2927	98%
S/SCEG/SOCO-SC//	0	4,724	6,174	548	0.000198	49	2%	2	0%	184	6%	2741	92%
S/SCEG/CPLE-SOCO//	0	475	643	539	0.001590	39	1%	1	0%	65	2%	2871	96%
SS/SOCO/SCEG-SOCO//	0	191	208	509	0.003851	43	1%	6	0%	6	0%	2921	98%
S/SCEG/SOCO-DUK//	202	683	852	507	0.001014	36	1%	0	0%	0	0%	2940	99%
SS/GTC/DUK-GTC//	373	553	673	482	0.001137	27	1%	0	0%	0	0%	2949	99%
S/DUK/DUK-SOCO//	0	722	2,335	420	0.000676	77	3%	0	0%	538	18%	2361	79%
SS/SOCO/SCEG-FL/MULTIPATHALIAS//	0	191	208	399	0.003019	69	2%	0	0%	6	0%	2901	97%
SS/SOCO/TVA-DUK/MULTIPATHALIAS//	-45	516	1,018	385	0.000995	23	1%	0	0%	7	0%	2946	99%
S/SCEG/SOCO-CPLE//	184	672	1,091	379	0.000761	86	3%	0	0%	0	0%	2890	97%
SS/SOCO/DUK-SOCO//	470	868	1,070	377	0.000576	33	1%	0	0%	0	0%	2943	99%
S/AECI/AECI-TVA//	0	1	664	376	0.003939	67	2%	0	0%	1,515	51%	1394	47%
SS/GTC/FPC-GTC//	0	307	586	375	0.001624	35	1%	0	0%	8	0%	2933	99%
S/SCEG/DUK-SCEG//	0	326	616	373	0.001526	54	2%	0	0%	38	1%	2884	97%
S/SC/CPLE-SOCO//	0	2,607	3,824	358	0.000211	31	1%	1	0%	106	4%	2838	95%

Appendix A (continued)

Segment	ATC			Loading		Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max	MWhs	Factor	Intervals	%	Intervals	%	Intervals	%	Intervals	%
S/MEAG/DUK-MEAG//	43	155	266	316	0.002530	30	1%	2	0%	0	0%	2944	99%
SS/GTC/SCEG-GTC//	57	104	114	306	0.004044	37	1%	0	0%	0	0%	2939	99%
SS/SOCO/SOCO-SC//	0	451	831	301	0.000859	64	2%	1	0%	6	0%	2905	98%
SS/SOCO/DUK-FL/MULTIPATHALIAS/	366	868	1,070	285	0.000440	32	1%	0	0%	0	0%	2944	99%
S/TVA/AECI-SOCO//	0	8	362	275	0.006587	22	1%	27	1%	363	12%	2564	86%
S/DUK/SOCO-SCEG//	0	262	263	255	0.001737	30	1%	1	0%	522	18%	2423	81%
S/DUK/CPL-TEC//	0	692	692	245	0.000481	17	1%	0	0%	16	1%	2943	99%
F/TEC/FPC-TEC//	0	1,856	3,058	240	0.000189	20	1%	0	0%	168	6%	2788	94%
F/FPC/FPC-TEC//	0	1,896	3,098	240	0.000185	20	1%	0	0%	168	6%	2788	94%
S/MEAG/MEAG-JEA//	0	149	208	202	0.002037	29	1%	0	0%	189	6%	2758	93%
S/DUK/DUK-SC//	0	400	2,052	198	0.000554	45	2%	0	0%	531	18%	2400	81%
SS/SOCO/FL-TVA/MULTIPATHALIAS/	199	649	1,043	194	0.000403	20	1%	0	0%	0	0%	2956	99%
S/SCEG/SCEG-DUK//	134	683	852	186	0.000372	33	1%	0	0%	0	0%	2943	99%
SS/GTC/GTC-DUK//	0	273	700	171	0.000811	6	0%	1	0%	116	4%	2853	96%
S/MEAG/MEAG-SOCO//	2,251	2,650	2,801	164	0.000084	15	1%	0	0%	0	0%	2961	100%
SS/SOCO/TVA-FL/MULTIPATHALIAS/	366	1,156	1,451	161	0.000188	18	1%	0	0%	0	0%	2958	99%
S/TVA/DUK-TVA//	0	355	355	159	0.000859	7	0%	7	0%	827	28%	2135	72%
S/MEAG/MEAG-DUK//	0	67	159	145	0.003011	20	1%	2	0%	840	28%	2114	71%
SS/SOCO/SOCO-TVA//	630	2,449	3,320	140	0.000080	6	0%	0	0%	0	0%	2970	100%
S/DUK/SCEG-DUK//	0	664	664	132	0.000301	24	1%	1	0%	124	4%	2827	95%
S/TVA/SOCO-DUK//	0	355	355	127	0.000488	11	0%	0	0%	1	0%	2964	100%
S/MEAG/TVA-MEAG//	0	71	184	114	0.002071	12	0%	2	0%	32	1%	2930	98%
S/MEAG/MEAG-SC//	0	54	89	108	0.003232	10	0%	6	0%	480	16%	2480	83%
SS/GTC/GTC-JEA//	207	847	984	106	0.000173	13	0%	0	0%	0	0%	2963	100%
S/TVA/AECI-DUK//	0	8	355	101	0.002441	11	0%	10	0%	363	12%	2592	87%
S/SCEG/CPL-SCEG//	0	351	643	90	0.000426	7	0%	1	0%	548	18%	2420	81%
S/DUK/CPL-SC//	0	519	2,713	89	0.000195	8	0%	0	0%	525	18%	2443	82%
S/SCEG/CPL-DUK//	56	475	643	85	0.000240	7	0%	0	0%	0	0%	2969	100%
S/DUK/DUK-SCEG//	0	243	263	73	0.000548	19	1%	0	0%	545	18%	2412	81%
SS/GTC/SC-GTC//	42	142	194	72	0.000736	4	0%	1	0%	0	0%	2971	100%
S/TVA/DUK-SOCO//	0	355	355	67	0.000274	6	0%	0	0%	209	7%	2761	93%
SS/SOCO/SC-SOCO//	35	375	511	64	0.000248	6	0%	0	0%	0	0%	2970	100%
SS/GTC/JEA-GTC//	0	307	586	63	0.000273	11	0%	0	0%	8	0%	2957	99%
S/MEAG/MEAG-TVA//	0	129	184	61	0.000677	8	0%	0	0%	76	3%	2892	97%
SS/SOCO/SC-FL/MULTIPATHALIAS/	35	375	511	60	0.000232	8	0%	0	0%	0	0%	2968	100%
SS/SOCO/TVA-SCEG/MULTIPATHALIAS/	5	113	154	57	0.000678	8	0%	0	0%	0	0%	2968	100%
SS/GTC/TVA-GTC//	161	332	365	52	0.000221	4	0%	0	0%	0	0%	2972	100%
S/DUK/TVA-SCEG//	0	262	263	45	0.000316	4	0%	0	0%	525	18%	2447	82%
S/MEAG/SC-MEAG//	9	41	101	45	0.001246	0	0%	4	0%	0	0%	2972	100%
S/MEAG/MEAG-GTC//	2,366	2,611	2,934	45	0.000023	4	0%	0	0%	0	0%	2972	100%
SS/GTC/MEAG-GTC//	8,699	8,709	9,204	45	0.000007	4	0%	0	0%	0	0%	2972	100%
S/DUK/SCEG-SOCO//	0	664	664	43	0.000090	6	0%	0	0%	16	1%	2954	99%
S/SCEG/SCEG-SC//	794	2,408	6,145	42	0.000022	7	0%	0	0%	0	0%	2969	100%
S/MEAG/SCEG-MEAG//	17	22	24	41	0.002531	1	0%	8	0%	0	0%	2967	100%
S/AECI/TVA-AECI//	0	816	856	40	0.000074	3	0%	0	0%	95	3%	2878	97%
S/TVA/DUK-AECI//	0	355	355	40	0.000213	3	0%	0	0%	803	27%	2170	73%
S/MEAG/MEAG-SCEG//	0	13	18	40	0.003978	0	0%	14	0%	8	0%	2954	99%
SS/SOCO/TVA-SC/MULTIPATHALIAS/	0	451	831	36	0.000103	2	0%	0	0%	6	0%	2968	100%
SS/GTC/GTC-FPC//	207	847	984	30	0.000049	5	0%	0	0%	0	0%	2971	100%
S/SCEG/SC-SCEG//	218	817	6,203	26	0.000019	6	0%	0	0%	0	0%	2970	100%
S/SC/SOCO-SCEG//	0	1,198	2,133	26	0.000034	6	0%	0	0%	284	10%	2686	90%
SS/GTC/GTC-SC//	0	321	419	24	0.000103	3	0%	0	0%	4	0%	2969	100%
S/DUK/SCEG-TVA//	0	664	664	21	0.000044	4	0%	0	0%	3	0%	2969	100%
SS/SOCO/SCEG-TVA/MULTIPATHALIAS/	0	191	208	21	0.000159	1	0%	0	0%	6	0%	2969	100%
SS/GTC/GTC-SCEG//	2	62	85	20	0.000420	3	0%	0	0%	6	0%	2967	100%