MONTHLY AUDIT REPORT ON THE SOUTHEAST ENERGY EXCHANGE MARKET

July 2023

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I. OVERVIEW

This is the Auditor report for the month of July 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 trades among its trading participants. It has operated since November 2022 when the initial 18 members began trading. SEEM expanded in late June to include six new members: Seminole Electric Cooperative; Tampa Electric Company; Duke Energy Florida; Florida Power Corporation; TEA Gainesville Regional Utilities; and TEA JEA.[1] July is the first full month of participation by these new members. This participation contributed to trading volumes increasing substantially from 48,000 MWh in June to 71,000 MWh in July. The July trading volumes were substantially above the market-to-date monthly average of 44,000 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, 11 percent of the time availability was zero. Due to transmission constraints, transmission loss costs, and participant-specific constraints, 28,000 MWh of potential economic exchanges were left uncleared in 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 an automated market 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 market opened in November 2022 with 18 members: 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.

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 fulfils our duty to report on the reliability and accuracy of the SEEM system to the Board. Regarding reporting on complaints from participants, we did not receive any 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 did not receive any such requests during the period of this report.

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 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, the screens are calculated daily, and we have developed data processing procedures for each of the daily screens. We applied the screens to the July SEEM data and found that in all intervals the screens have indicated that requirements have been met.

For the monthly audit of the system 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 July and therefore we conclude the network map is accurate for the current sources and sinks participating in SEEM.

In a similar fashion, we evaluate changes to participant-specific constraints. These are counterparties and balancing areas acceptable to each participant for trades in SEEM, as well as any maximum price constraints. In each interval SEEM uses a set of participant-specific constraints for all participant bids and offers. We check each participant for any excluded sellers or buyers and any max price constraints and identify any constraints that changed during the month. There were a number of changes to these constraints due to the addition of a new member from Florida who joined early in July. All other new members from Florida joined in June. There were a number of other changes from participants enabling the new Florida entities in July, rather than immediately in June. No participants changed any maximum price constraints.

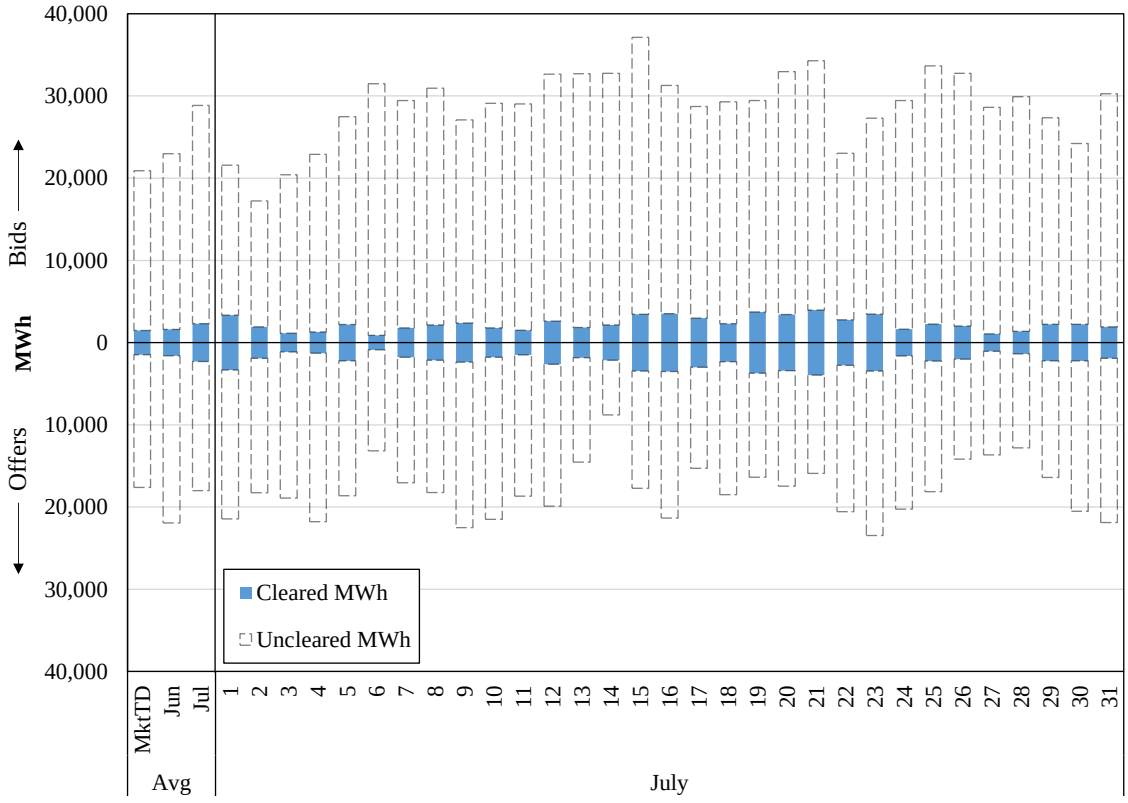
B. Market Activity

In this section, we summarize and discuss SEEM operations and outcomes to illuminate any potential operating or market issues. Our evaluation is in two main 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 over 71,000 MWh of energy in July, averaging approximately 2,300 MWh per day. Figure 1 illustrates daily SEEM bids and offers for July. Each bar represents the daily total MWh volume of SEEM activity. The bids and offers are divided between cleared bids to buy (blue bar above the x axis) and cleared offers to sell (blue bars below the x axis). The transparent bar stacked above the bids and below the offers are the uncleared bids and offers. 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 – July 2023 average).

Figure 1: Daily Bids and Offers
July 2023



The average daily bid and offer quantities were higher in July than in June and higher than the MktTD average. Much of this is likely related to the new participants that traded a full month in

July (they traded only three days in June). New participants sold 17,000 MWh and purchased 21,000 MWh in July. The increase in July over June was about 26,000 MWh, suggesting the increase was not just from Florida trades. This continues the overall trend of increased participation since the SEEM opening in November. As the left-side monthly and MktTD bars show, total liquidity (cleared and uncleared bids and offers) increased slightly.

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 are uncleared bids whose price is greater than some uncleared offer prices in the same interval. Some of this is possible due to transmission constraints and the cost of transmission losses that may render a trade physically infeasible or uneconomic. We found a much smaller volume of uncleared economic bids and offers when considering the average cost of losses. In particular, many of the uncleared economic bids/offers could not settle at a price that would pay for average transmission losses. About 28,000 MWh of bids/offers could settle at a price that could pay the average $2/MWh losses. In June, the amount was 12,000 MWh. Without a complex simulation, there is not a straightforward way to determine why this amount did not clear, but among the possibilities is 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 more detail on the matched bids and offers by showing the matches by market participant. 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 participant, each color corresponds to a different participant (whether the participant is a buyer or seller). We do not reveal the identity of the participants in order to respect commercial sensitivity.

Figure 2: Volumes of Matched Bids and Offers
July 2023

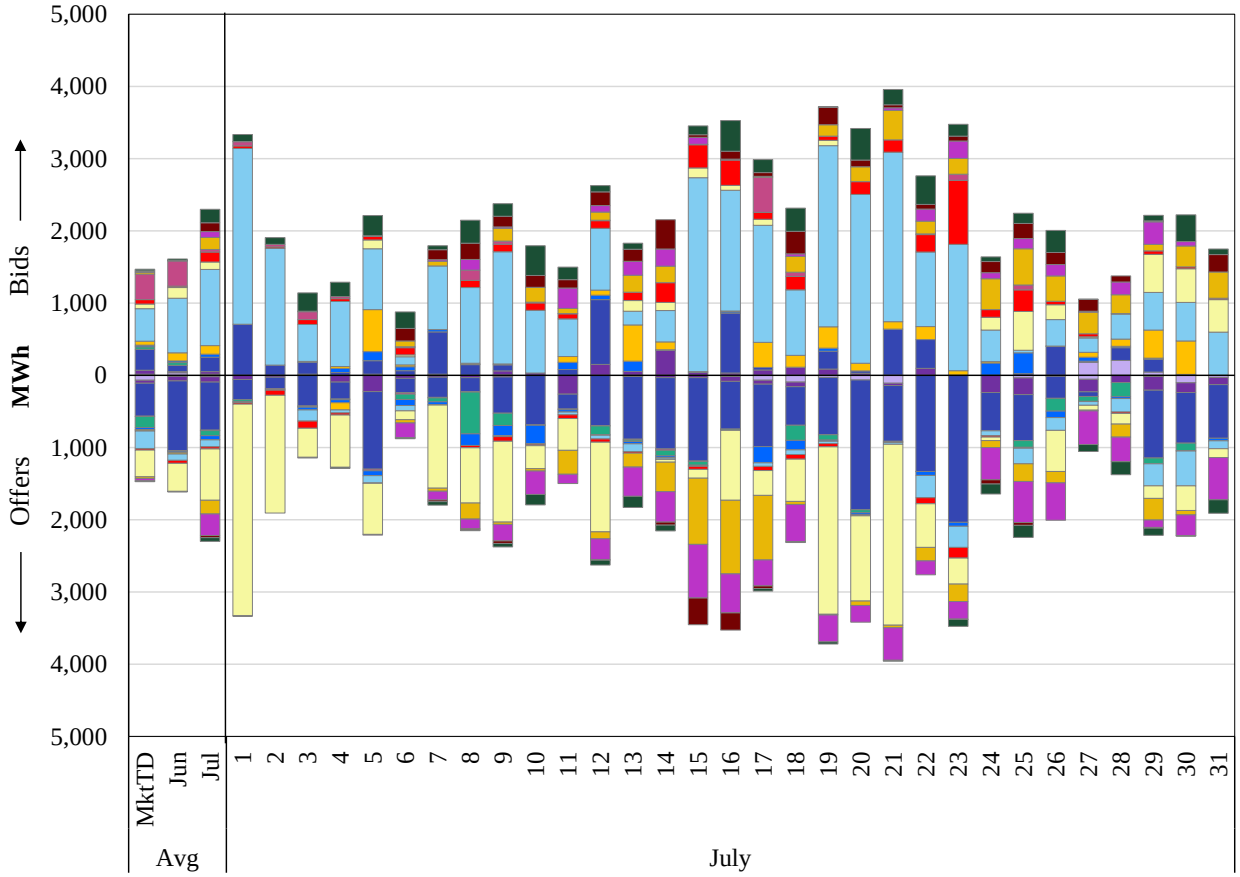
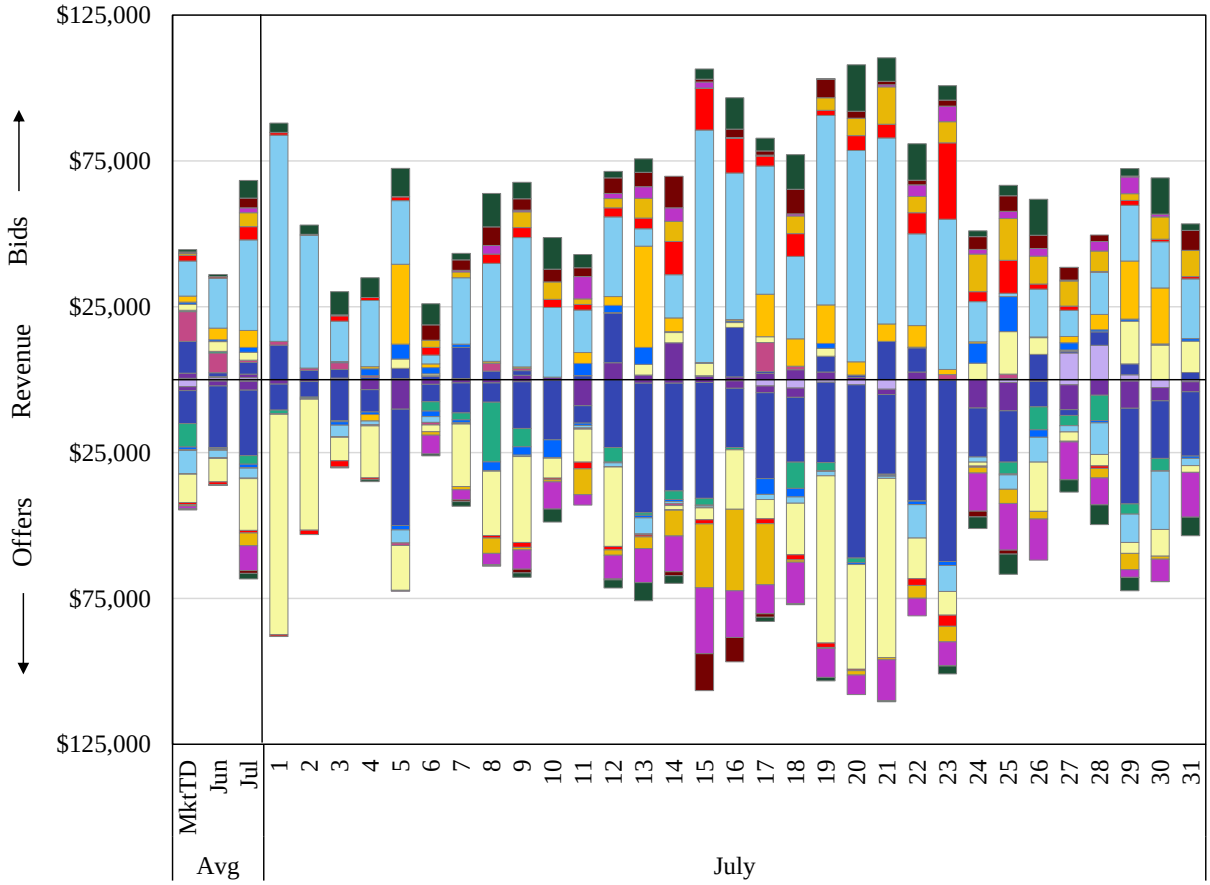


Figure 2 shows certain buyers and sellers comprise significant shares of the transaction activity. About 31 percent of the sales were made by a single participant and the two largest sellers accounted for 60 percent of the volume. On the buyer side, the largest buyer accounted for 46 percent of the cleared volume and the top two buyers accounted for 55 percent. Our findings in previous months indicate that the most active participants vary from month-to-month, both in identity and sales share, as can be observed by the left bar charts showing monthly and Market-to-Date (MktTD) averages. With the addition of new participants these concentration statistics fell significantly in July.

Figure 3 is similar to Figure 2, but shows the revenues of matched transactions rather than the volumes. These are highly correlated with the transaction volumes shown in Figure 2.

Figure 3: Revenues of Matched Transactions
July 2023



2. Network Usage

In this subsection, we report on the usage of the SEEM network. Figure 4 shows the average daily peak-hour prices for July and the prices on the highest-priced and lowest-priced paths for each day. Figure 5 is the same figure but for off-peak hours.

The figures show in the left column the July prices compared to the previous period. It shows the average prices for are roughly equal to the prices in June but are lower than the average since market opening. This downward price trend is likely the result of sustained lower natural gas prices.

Figure 4: Average SEEM Clearing Prices: System-Wide and by Path
Peak Hours – July 2023

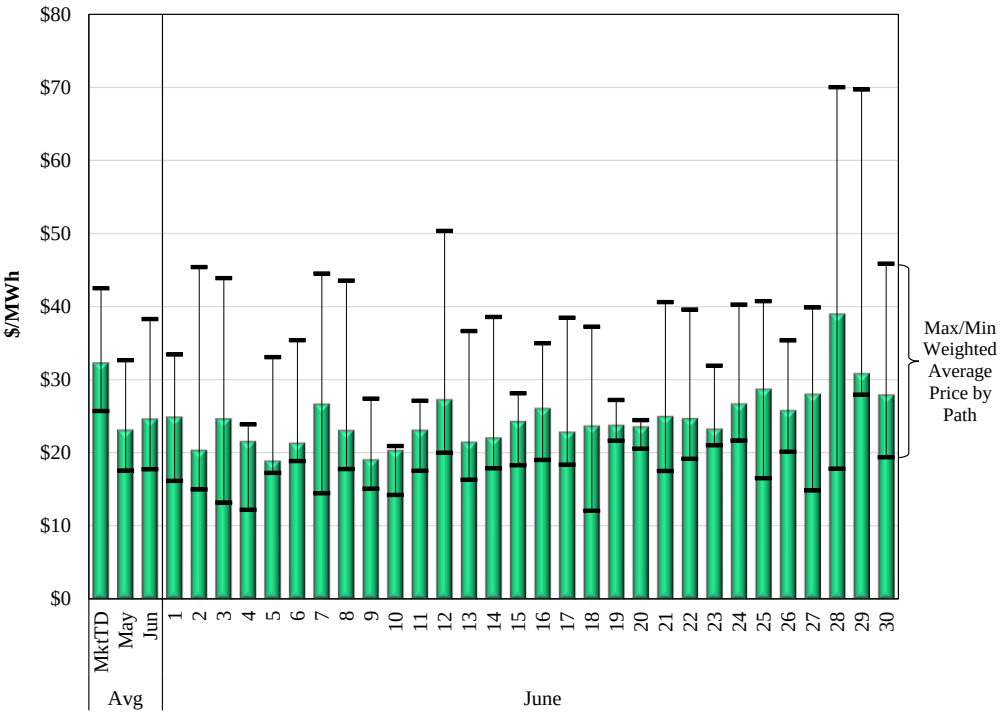
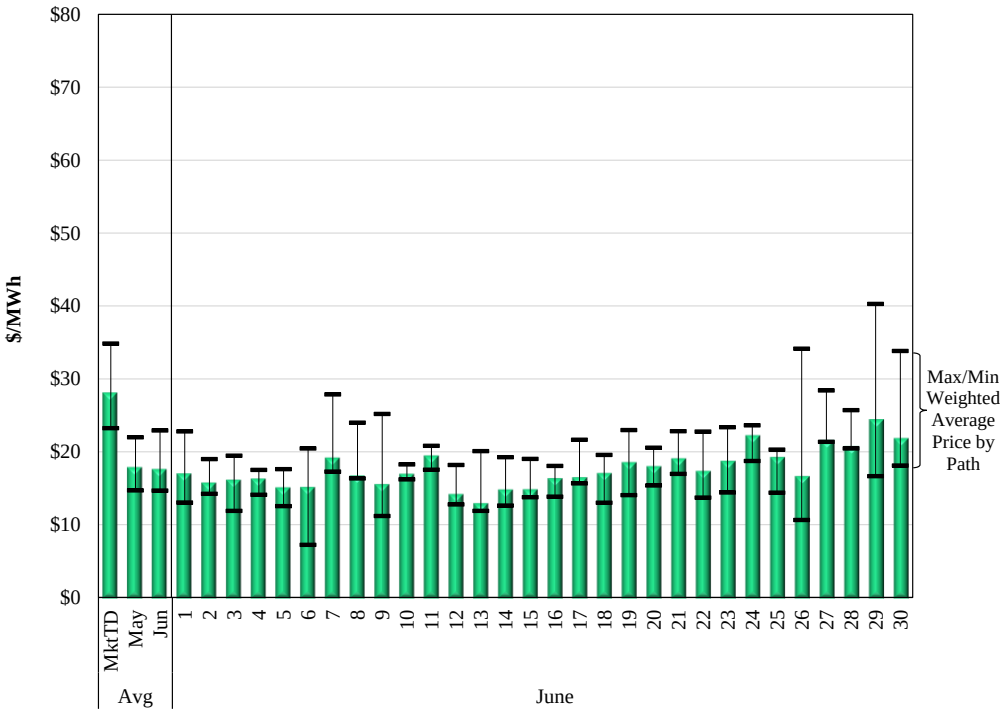


Figure 5: Average SEEM Clearing Prices: System-Wide and by Path
Off-Peak Hours – July 2022



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. With the addition of new members in June, SEEM uses 240 unique segments. We evaluated path 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.

Table 1 shows an excerpt of our statistics. The table displays the 28 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. In addition to the ATC and schedule volumes, the Table also shows 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. During the month, total segment intervals is the product of all 240 segments and the number of intervals during the month. In July, there were 714,240.[4] Of this total, the most common case in the data was 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 626,339 segment intervals or 88 percent of all segment-intervals. The second most common case was case (3), where ATC was not sufficient to clear any SEEM transactions (76,942). The third most common case was case (1), intervals where the

[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.

[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 July, SEEM operated in all intervals.

segment was partially used (10,695). Finally, in a small number of intervals, case (2) prevailed where the segment was completely scheduled in the interval (264).

Table 1: Most Utilized SEEM Segment Statistics

Segment	ATC				Loading	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max	MWhs	Factor	Intervals	%	Intervals	%	Intervals	%	Intervals	%
S/TVA/TVA-SOCO//	0	2,885	3,000	17,529	0.008847	421	*14%*	3	*0%*	140	*5%*	2412	*81%*
SS/SOCO/TVA-SOCO//	443	1,362	1,362	17,260	0.018497	458	*15%*	0	*0%*	0	*0%*	2518	*85%*
S/CPL/CPLE-DUK//	981	3,776	20,655	14,791	0.004976	598	*20%*	0	*0%*	0	*0%*	2378	*80%*
S/DUK/CPLE-SOCO//	414	2,011	2,335	12,427	0.008540	562	*19%*	0	*0%*	0	*0%*	2414	*81%*
SS/SOCO/DUK-SOCO//	-62	768	1,014	9,769	0.019128	298	*10%*	10	*0%*	32	*1%*	2636	*89%*
F/TEC/TEC-FPC//	0	1,856	2,754	9,291	0.007008	1,049	*35%*	4	*0%*	24	*1%*	1899	*64%*
F/FPC/TEC-FPC//	0	1,905	2,803	7,764	0.005696	916	*31%*	0	*0%*	12	*0%*	2048	*69%*
F/JEA/SOCO-JEA//	33	525	796	5,759	0.013804	756	*25%*	4	*0%*	0	*0%*	2216	*74%*
SS/SOCO/FL-SOCO//	114	229	295	4,808	0.028185	340	*11%*	0	*0%*	0	*0%*	2636	*89%*
S/TVA/TVA-DUK//	0	333	333	4,551	0.022125	120	*4%*	0	*0%*	450	*15%*	2406	*81%*
S/DUK/DUK-SOCO//	0	1,962	2,335	4,524	0.003215	381	*13%*	0	*0%*	3	*0%*	2592	*87%*
S/DUK/TVA-DUK//	0	692	692	4,428	0.009516	113	*4%*	4	*0%*	112	*4%*	2747	*92%*
F/FPC/FPC-SOCO//	0	0	113	3,359	0.436007	144	*5%*	57	*2%*	2,688	*90%*	87	*3%*
F/TEC/FPC-TEC//	0	2,490	3,335	2,526	0.001432	248	*8%*	0	*0%*	8	*0%*	2720	*91%*
F/FPC/FPC-TEC//	0	2,530	3,375	2,514	0.001402	246	*8%*	0	*0%*	8	*0%*	2722	*91%*
P/LGEE/LGEE-TVA//	0	1,623	1,623	2,273	0.002060	151	*5%*	0	*0%*	95	*3%*	2730	*92%*
S/TVA/DUK-TVA//	0	333	333	2,096	0.009147	82	*3%*	0	*0%*	27	*1%*	2867	*96%*
SS/SOCO/SOCO-SOCO//	43,156	43,556	43,556	2,081	0.000064	102	*3%*	0	*0%*	0	*0%*	2874	*97%*
S/TVA/LGEE-SOCO//	0	2,648	2,648	2,025	0.001038	135	*5%*	0	*0%*	4	*0%*	2837	*95%*
S/DUK/CPLE-TVA//	92	692	692	2,023	0.004090	60	*2%*	3	*0%*	0	*0%*	2913	*98%*
S/MEAG/DUK-MEAG//	0	113	243	1,955	0.022357	136	*5%*	17	*1%*	16	*1%*	2807	*94%*
SS/GTC/DUK-GTC//	0	484	638	1,953	0.006199	68	*2%*	15	*1%*	36	*1%*	2857	*96%*
F/JEA/JEA-SOCO//	50	318	363	1,666	0.007929	231	*8%*	0	*0%*	0	*0%*	2745	*92%*
S/DUK/SOCO-DUK//	0	1,743	2,220	1,593	0.001515	100	*3%*	0	*0%*	352	*12%*	2524	*85%*
F/FPC/TEC-SOCO//	0	0	113	1,527	0.198209	156	*5%*	0	*0%*	2,688	*90%*	132	*4%*
S/CPL/CPLE-SCEG//	0	297	2,377	1,457	0.006565	110	*4%*	0	*0%*	16	*1%*	2850	*96%*
S/SCEG/SCEG-SOCO//	1,293	2,717	5,032	1,441	0.000704	185	*6%*	0	*0%*	0	*0%*	2791	*94%*
S/MEAG/SOCO-MEAG//	2,620	2,945	3,000	1,009	0.000467	75	*3%*	0	*0%*	0	*0%*	2901	*97%*

These statistics indicate that among these most utilize segments, ATC remains available for SEEM trades. For example, many of the top paths have over 80 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. These two circumstances (Cases (2) and (3)) occur in over 54,000 segment-intervals and almost always because the ATC is insufficient to schedule (i.e., ATC < 4 MW) rather than because it is filled by a SEEM match.

Further insight on constrained segments can be gained from Table 2. It shows the segments most often unavailable to SEEM (i.e., unavailable at least 20 percent of the intervals). Like in previous months, paths that are unavailable due to no ATC, are generally unused when they are available.

The incidence of transmission capacity constraints increased slightly between June and July, as measured by the percentage of constrained segment intervals (9 percent in June and 11 percent in July). Because trading volumes were higher in July, the increased frequency of transmission constraints does not appear to significantly affect liquidity. however, as we explained above, a significant portion of economic exchanges remain uncleared.

Table 2: Most Constrained SEEM Segments

Segment	ATC				Loading	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max	MWhs	Factor	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/AECI-CPLW//	0	0	276	7	0.000423	1	0%	0	0%	2,718	91%	257	9%
F/FPC/SEC-SOCO/SSO-SOCO/	0	0	113	0	0.000000	0	0%	0	0%	2,696	91%	280	9%
F/FPC/FPC-SOCO//	0	0	113	3,359	0.436007	144	5%	57	2%	2,688	90%	87	3%
F/FPC/GVL-SOCO//	0	0	113	0	0.000000	0	0%	0	0%	2,688	90%	288	10%
F/FPC/SEC-SOCO/SSN-SOCO/	0	0	113	0	0.000000	0	0%	0	0%	2,688	90%	288	10%
F/FPC/TEC-SOCO//	0	0	113	1,527	0.198209	156	5%	0	0%	2,688	90%	132	4%
S/CPL/TVA-CPLW//	0	0	789	0	0.000000	0	0%	0	0%	2,580	87%	396	13%
S/CPL/DUK-TVA//	0	0	3,482	341	0.012396	14	0%	0	0%	2,577	87%	385	13%
S/CPL/TVA-DUK//	0	0	7,928	26	0.000890	2	0%	0	0%	2,577	87%	397	13%
S/CPL/CPLW-TVA//	0	0	288	0	0.000000	0	0%	0	0%	2,577	87%	399	13%
S/TVA/CPLW-AECI//	0	0	276	1	0.000044	1	0%	0	0%	2,530	85%	445	15%
S/TVA/SOCO-CPLW//	0	0	276	0	0.000000	0	0%	0	0%	2,512	84%	464	16%
S/TVA/CPLW-LGEE//	0	0	276	0	0.000000	0	0%	0	0%	2,504	84%	472	16%
S/TVA/DUK-CPLW//	0	0	276	0	0.000000	0	0%	0	0%	2,492	84%	484	16%
S/TVA/TVA-CPLW//	0	0	276	19	0.000572	1	0%	0	0%	2,492	84%	483	16%
S/TVA/LGEE-CPLW//	0	0	276	0	0.000000	0	0%	0	0%	2,488	84%	488	16%
S/TVA/CPLW-DUK//	0	0	276	0	0.000000	0	0%	0	0%	2,488	84%	488	16%
S/TVA/CPLW-SOCO//	0	0	276	0	0.000000	0	0%	0	0%	2,488	84%	488	16%
S/TVA/CPLW-TVA//	0	0	276	340	0.010097	13	0%	0	0%	2,488	84%	475	16%
S/AECI/TVA-AECI//	0	0	611	498	0.006965	36	1%	8	0%	1,637	55%	1295	44%
S/TVA/AECI-LGEE//	0	321	387	0	0.000000	0	0%	0	0%	1,064	36%	1912	64%
S/MEAG/MEAG-SCEG//	0	8	17	4	0.000688	1	0%	1	0%	960	32%	2014	68%
S/AECI/AECI-TVA//	0	108	837	615	0.006477	48	2%	1	0%	764	26%	2163	73%
S/TVA/AECI-DUK//	0	321	333	82	0.000490	10	0%	0	0%	746	25%	2220	75%
S/DUK/SOCO-CPLW//	0	337	554	0	0.000000	0	0%	0	0%	659	22%	2317	78%
S/DUK/SC-CPLW//	0	350	554	0	0.000000	0	0%	0	0%	659	22%	2317	78%
S/DUK/SCEG-CPLW//	0	347	554	0	0.000000	0	0%	0	0%	659	22%	2317	78%
S/TVA/AECI-SOCO//	0	336	387	352	0.001827	28	1%	0	0%	598	20%	2350	79%
S/TVA/AECI-TVA//	0	333	387	174	0.000912	12	0%	0	0%	598	20%	2366	80%

III. CONCLUSION

We reviewed the operation of SEEM for July 2023. We have developed operational procedures to validate the market rules and constraints of SEEM. All of 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. The addition of Florida entities has increased volumes substantially.

Appendix A

SEEM Path Usage

Segment	ATC				Loading	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max	MWhs	Factor	Intervals	%	Intervals	%	Intervals	%	Intervals	%
S/TVA/TVA-SOCO//	0	2,885	3,000	17,529	0.008847	421	*14%*	3	*0%*	140	*5%*	2412	*81%*
SS/SOCO/TVA-SOCO//	443	1,362	1,362	17,260	0.018497	458	*15%*	0	*0%*	0	*0%*	2518	*85%*
S/CPL/CPLE-DUK//	981	3,776	20,655	14,791	0.004976	598	*20%*	0	*0%*	0	*0%*	2378	*80%*
S/DUK/CPLE-SOCO//	414	2,011	2,335	12,427	0.008540	562	*19%*	0	*0%*	0	*0%*	2414	*81%*
SS/SOCO/DUK-SOCO//	-62	768	1,014	9,769	0.019128	298	*10%*	10	*0%*	32	*1%*	2636	*89%*
F/TEC/TEC-FPC//	0	1,856	2,754	9,291	0.007008	1,049	*35%*	4	*0%*	24	*1%*	1899	*64%*
F/FPC/TEC-FPC//	0	1,905	2,803	7,764	0.005696	916	*31%*	0	*0%*	12	*0%*	2048	*69%*
F/JEA/SOCO-JEA//	33	525	796	5,759	0.013804	756	*25%*	4	*0%*	0	*0%*	2216	*74%*
SS/SOCO/FL-SOCO//	114	229	295	4,808	0.028185	340	*11%*	0	*0%*	0	*0%*	2636	*89%*
S/TVA/TVA-DUK//	0	333	333	4,551	0.022125	120	*4%*	0	*0%*	450	*15%*	2406	*81%*
S/DUK/DUK-SOCO//	0	1,962	2,335	4,524	0.003215	381	*13%*	0	*0%*	3	*0%*	2592	*87%*
S/DUK/TVA-DUK//	0	692	692	4,428	0.009516	113	*4%*	4	*0%*	112	*4%*	2747	*92%*
F/FPC/FPC-SOCO//	0	0	113	3,359	0.436007	144	*5%*	57	*2%*	2,688	*90%*	87	*3%*
F/TEC/FPC-TEC//	0	2,490	3,335	2,526	0.001432	248	*8%*	0	*0%*	8	*0%*	2720	*91%*
F/FPC/FPC-TEC//	0	2,530	3,375	2,514	0.001402	246	*8%*	0	*0%*	8	*0%*	2722	*91%*
P/LGEE/LGEE-TVA//	0	1,623	1,623	2,273	0.002060	151	*5%*	0	*0%*	95	*3%*	2730	*92%*
S/TVA/DUK-TVA//	0	333	333	2,096	0.009147	82	*3%*	0	*0%*	27	*1%*	2867	*96%*
SS/SOCO/SOCO-SOCO//	43,156	43,556	43,556	2,081	0.000064	102	*3%*	0	*0%*	0	*0%*	2874	*97%*
S/TVA/LGEE-SOCO//	0	2,648	2,648	2,025	0.001038	135	*5%*	0	*0%*	4	*0%*	2837	*95%*
S/DUK/CPLE-TVA//	92	692	692	2,023	0.004090	60	*2%*	3	*0%*	0	*0%*	2913	*98%*
S/MEAG/DUK-MEAG//	0	113	243	1,955	0.022357	136	*5%*	17	*1%*	16	*1%*	2807	*94%*
SS/GTC/DUK-GTC//	0	484	638	1,953	0.006199	68	*2%*	15	*1%*	36	*1%*	2857	*96%*
F/JEA/JEA-SOCO//	50	318	363	1,666	0.007929	231	*8%*	0	*0%*	0	*0%*	2745	*92%*
S/DUK/SOCO-DUK//	0	1,743	2,220	1,593	0.001515	100	*3%*	0	*0%*	352	*12%*	2524	*85%*
F/FPC/TEC-SOCO//	0	0	113	1,527	0.198209	156	*5%*	0	*0%*	2,688	*90%*	132	*4%*
S/CPL/CPLE-SCEG//	0	297	2,377	1,457	0.006565	110	*4%*	0	*0%*	16	*1%*	2850	*96%*
S/SCEG/SCEG-SOCO//	1,293	2,717	5,032	1,441	0.000704	185	*6%*	0	*0%*	0	*0%*	2791	*94%*
S/MEAG/SOCO-MEAG//	2,620	2,945	3,000	1,009	0.000467	75	*3%*	0	*0%*	0	*0%*	2901	*97%*
SS/SOCO/SOCO-FL//	493	1,251	1,501	894	0.001002	129	*4%*	0	*0%*	0	*0%*	2847	*96%*
SS/SOCO/DUK-FL/MULTIPATHALIAS/	-62	747	1,014	880	0.001746	143	*5%*	4	*0%*	32	*1%*	2797	*94%*
S/SCEG/CPLE-SCEG//	0	475	639	833	0.002404	66	*2%*	0	*0%*	1	*0%*	2909	*98%*
S/CPL/CPLE-SC//	0	2,091	4,319	813	0.000528	52	*2%*	1	*0%*	16	*1%*	2907	*98%*
SS/GTC/SOCO-GTC//	12,566	13,142	14,238	803	0.000082	40	*1%*	0	*0%*	0	*0%*	2936	*99%*
SS/SOCO/SCEG-SOCO//	1	167	208	765	0.006088	57	*2%*	3	*0%*	4	*0%*	2912	*98%*
SS/SOCO/TVA-DUK/MULTIPATHALIAS	0	655	1,151	720	0.001611	28	*1%*	0	*0%*	12	*0%*	2936	*99%*
S/SC/CPLE-SOCO//	316	3,309	3,992	694	0.000284	39	*1%*	0	*0%*	0	*0%*	2937	*99%*
SS/GTC/SCEG-GTC//	0	91	114	642	0.009620	46	*2%*	13	*0%*	8	*0%*	2909	*98%*
SS/SOCO/SC-SOCO//	266	374	815	631	0.002185	40	*1%*	0	*0%*	0	*0%*	2936	*99%*
S/MEAG/TVA-MEAG//	44	95	240	631	0.007225	40	*1%*	8	*0%*	0	*0%*	2928	*98%*
S/SCEG/CPLE-SOCO//	158	475	639	624	0.001788	45	*2%*	0	*0%*	0	*0%*	2931	*98%*
S/TVA/SOCO-TVA//	0	2,149	2,940	618	0.000434	36	*1%*	0	*0%*	196	*7%*	2744	*92%*
S/AECI/AECI-TVA//	0	108	837	615	0.006477	48	*2%*	1	*0%*	764	*26%*	2163	*73%*
S/SC/SOCO-SC//	0	1,988	2,313	596	0.000427	45	*2%*	0	*0%*	3	*0%*	2928	*98%*
S/MEAG/MEAG-SOCO//	2,601	2,656	2,981	508	0.000253	23	*1%*	0	*0%*	0	*0%*	2953	*99%*
S/SCEG/SCEG-DUK//	480	684	957	499	0.000980	69	*2%*	0	*0%*	0	*0%*	2907	*98%*
S/AECI/TVA-AECI//	0	0	611	498	0.006965	36	*1%*	8	*0%*	1,637	*55%*	1295	*44%*
S/DUK/DUK-SC//	0	1,866	2,795	486	0.000357	64	*2%*	0	*0%*	3	*0%*	2909	*98%*
SS/SOCO/SOCO-TVA//	147	2,522	3,442	462	0.000261	27	*1%*	0	*0%*	0	*0%*	2949	*99%*
S/SC/DUK-SC//	1,342	2,365	2,796	432	0.000247	66	*2%*	0	*0%*	0	*0%*	2910	*98%*
S/CPL/SCEG-CPLE//	0	517	2,641	418	0.001175	58	*2%*	0	*0%*	257	*9%*	2661	*89%*

Appendix A (continued)

Segment	ATC				Loading	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max	MWhs	Factor	Intervals	%	Intervals	%	Intervals	%	Intervals	%
S/SCEG/SCEG-CPLE//	508	672	989	362	0.000718	49	2%	0	0%	0	0%	2927	98%
S/TVA/AECI-SOCO//	0	336	387	352	0.001827	28	1%	0	0%	598	20%	2350	79%
S/DUK/SCEG-DUK//	0	663	664	346	0.000793	49	2%	0	0%	204	7%	2723	92%
S/CPL/DUK-TVA//	0	0	3,482	341	0.012396	14	0%	0	0%	2,577	87%	385	13%
S/DUK/CPLE-CPLW//	0	442	554	341	0.001311	14	0%	0	0%	415	14%	2547	86%
S/TVA/CPLW-TVA//	0	0	276	340	0.010097	13	0%	0	0%	2,488	84%	475	16%
F/FPC/SOCO-FPC//	0	168	453	323	0.002179	72	2%	1	0%	538	18%	2365	79%
S/CPL/DUK-CPLE//	0	3,379	6,875	301	0.000116	35	1%	0	0%	12	0%	2929	98%
SS/SOCO/FL-DUK/MULTIPATHALIAS/	0	229	295	293	0.001789	52	2%	0	0%	12	0%	2912	98%
S/DUK/SC-DUK//	0	1,647	2,957	290	0.000238	46	2%	0	0%	92	3%	2838	95%
S/MEAG/FPC-MEAG//	0	31	214	284	0.010815	3	0%	31	1%	98	3%	2844	96%
S/DUK/DUK-TVA//	0	692	692	261	0.000528	31	1%	0	0%	3	0%	2942	99%
S/SC/SOCO-DUK//	1,744	2,407	2,803	254	0.000141	14	0%	0	0%	0	0%	2962	100%
SS/SOCO/FL-SC/MULTIPATHALIAS/	5	172	264	253	0.001997	21	1%	2	0%	0	0%	2953	99%
S/SCEG/DUK-SCEG//	0	325	529	252	0.001045	36	1%	0	0%	2	0%	2938	99%
S/TVA/SOCO-AECI//	0	316	600	232	0.001021	25	1%	0	0%	312	10%	2639	89%
SS/SOCO/SCEG-FL/MULTIPATHALIAS/	1	167	208	228	0.001814	57	2%	0	0%	4	0%	2915	98%
SS/SOCO/FL-TVA/MULTIPATHALIAS/	114	229	295	217	0.001275	18	1%	0	0%	0	0%	2958	99%
SS/SOCO/TVA-FL/MULTIPATHALIAS/	443	1,175	1,362	215	0.000256	20	1%	0	0%	0	0%	2956	99%
S/TVA/DUK-AECI//	0	316	333	195	0.001053	21	1%	0	0%	83	3%	2872	97%
S/TVA/AECI-TVA//	0	333	387	174	0.000912	12	0%	0	0%	598	20%	2366	80%
S/DUK/DUK-SCEG//	0	261	262	166	0.000871	20	1%	1	0%	5	0%	2950	99%
S/DUK/TVA-SCEG//	0	261	262	160	0.000841	15	1%	0	0%	5	0%	2956	99%
SS/GTC/JEA-GTC//	0	140	186	160	0.001706	27	1%	0	0%	24	1%	2925	98%
SS/SOCO/SOCO-DUK//	0	661	1,151	153	0.000342	21	1%	0	0%	12	0%	2943	99%
S/DUK/SOCO-CPLE//	0	1,865	2,220	151	0.000136	28	1%	0	0%	385	13%	2563	86%
SS/SOCO/TVA-SC/MULTIPATHALIAS/	5	227	598	148	0.000792	6	0%	0	0%	0	0%	2970	100%
S/MEAG/SC-MEAG//	21	31	78	145	0.005203	22	1%	13	0%	0	0%	2941	99%
S/DUK/TVA-CPLE//	0	692	692	140	0.000297	5	0%	1	0%	144	5%	2826	95%
S/MEAG/SCEG-MEAG//	16	19	24	134	0.009151	8	0%	27	1%	0	0%	2941	99%
S/MEAG/JEA-MEAG//	0	31	214	133	0.005065	6	0%	15	1%	98	3%	2857	96%
S/MEAG/MEAG-SC//	0	47	69	123	0.003790	10	0%	3	0%	440	15%	2523	85%
S/TVA/DUK-SOCO//	0	333	333	121	0.000524	2	0%	2	0%	11	0%	2961	100%
S/MEAG/MEAG-JEA//	0	191	209	120	0.000942	20	1%	0	0%	45	2%	2911	98%
S/SC/CPLE-SC//	0	2,461	3,187	119	0.000067	14	0%	0	0%	3	0%	2959	99%
S/DUK/SCEG-TVA//	92	663	664	115	0.000244	14	0%	0	0%	0	0%	2962	100%
S/DUK/SCEG-SOCO//	288	663	664	109	0.000225	16	1%	0	0%	0	0%	2960	99%
S/SCEG/DUK-SOCO//	52	325	529	109	0.000452	4	0%	0	0%	0	0%	2972	100%
S/SC/DUK-SOCO//	2,933	3,325	3,578	109	0.000044	2	0%	0	0%	0	0%	2974	100%
SS/SOCO/SCEG-TVA/MULTIPATHALIA	1	167	208	104	0.000828	13	0%	0	0%	4	0%	2959	99%
S/TVA/LGEE-DUK//	0	333	333	103	0.000421	11	0%	0	0%	4	0%	2961	100%
SS/GTC/GTC-SOCO//	20,000	20,000	20,000	100	0.000007	4	0%	0	0%	0	0%	2972	100%
SS/GTC/TVA-GTC//	0	321	321	96	0.000436	7	0%	0	0%	6	0%	2963	100%
S/MEAG/MEAG-DUK//	0	100	170	91	0.001339	11	0%	0	0%	164	6%	2801	94%
S/TVA/AECI-DUK//	0	321	333	82	0.000490	10	0%	0	0%	746	25%	2220	75%
SS/SOCO/SOCO-SC//	5	227	598	80	0.000428	10	0%	2	0%	0	0%	2964	100%
SS/SOCO/FL-SCEG/MULTIPATHALIAS/	0	72	137	76	0.001560	11	0%	9	0%	388	13%	2568	86%
S/TVA/LGEE-TVA//	0	2,648	2,648	75	0.000038	3	0%	0	0%	4	0%	2969	100%
S/SC/SC-SOCO//	999	2,647	3,535	71	0.000036	71	2%	0	0%	0	0%	2905	98%
S/SCEG/SOCO-DUK//	480	684	957	71	0.000139	10	0%	0	0%	0	0%	2966	100%
S/TVA/LGEE-AECI//	0	416	600	70	0.000274	6	0%	0	0%	52	2%	2918	98%
S/MEAG/MEAG-GTC//	2,302	2,643	3,029	60	0.000030	6	0%	0	0%	0	0%	2970	100%
SS/GTC/MEAG-GTC//	8,615	8,749	9,233	60	0.000009	6	0%	0	0%	0	0%	2970	100%
S/SCEG/SOCO-CPLE//	508	672	989	56	0.000111	13	0%	0	0%	0	0%	2963	100%
S/DUK/SOCO-SC//	0	1,814	2,220	55	0.000047	5	0%	0	0%	245	8%	2726	92%
SS/SOCO/SC-FL/MULTIPATHALIAS/	266	374	815	48	0.000167	15	1%	0	0%	0	0%	2961	100%
SS/SOCO/TVA-SCEG/MULTIPATHALIA	0	72	149	42	0.000847	2	0%	1	0%	388	13%	2585	87%
S/CPL/SC-CPLE//	0	1,581	3,020	40	0.000036	34	1%	0	0%	251	8%	2691	90%
S/SCEG/SOCO-SCEG//	0	1,352	3,001	35	0.000036	13	0%	0	0%	416	14%	2547	86%
S/MEAG/MEAG-FPC//	0	191	209	35	0.000275	5	0%	0	0%	45	2%	2926	98%
S/DUK/SOCO-SCEG//	0	261	262	35	0.000195	7	0%	0	0%	152	5%	2817	95%
SS/SOCO/DUK-TVA/MULTIPATHALIAS	-62	746	1,014	33	0.000066	3	0%	0	0%	32	1%	2941	99%
S/SC/SC-DUK//	844	2,277	3,349	33	0.000020	33	1%	0	0%	0	0%	2943	99%
S/SC/SC-CPLE//	873	2,594	3,504	28	0.000015	28	1%	0	0%	0	0%	2948	99%
S/CPL/TVA-DUK//	0	0	7,928	26	0.000890	2	0%	0	0%	2,577	87%	397	13%
S/MEAG/MEAG-TVA//	0	133	173	25	0.000344	2	0%	0	0%	512	17%	2462	83%