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

April 2023

Prepared by:



Independent Market Auditor

May 26, 2023

I. OVERVIEW

This is the Auditor report for the month of April 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. The 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. 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 was created and 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 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. We have developed data processing procedures for each one of the daily screens listed above. We applied the screens to the April 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 strung 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 April and therefore can 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 five participant-specific constraint changes in April involving allowable counterparties. Three were to restrict trade with a counterparty and two were to open trade. No participants changed any maximum price constraints.

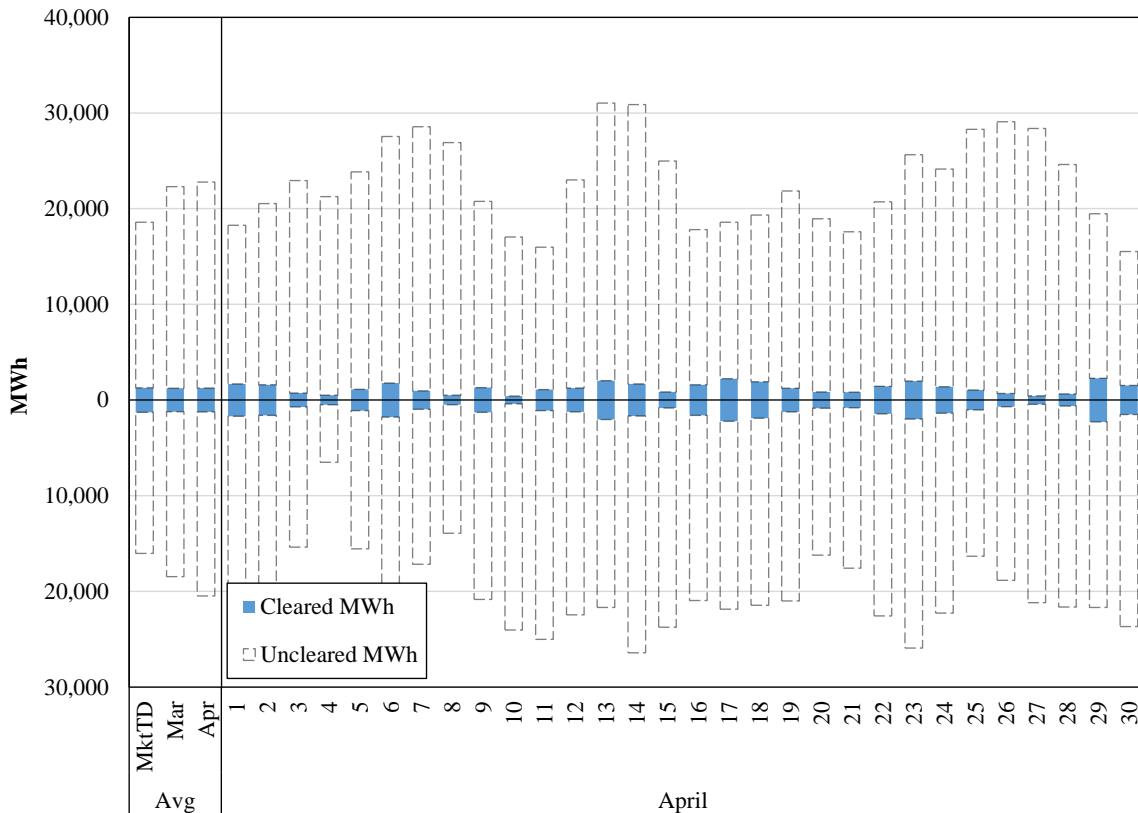
B. Market Activity

In this section, we summarize and discuss SEEM operations and outcomes. This discussion is intended to illuminate system operations and outcomes. Our discussion 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

Figure 1 illustrates daily SEEM bids and offers for April. Each bar represents a day 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 figure also shows 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, which is the November 2022 – April 2023 average.

Figure 1: Daily Bids and Offers
April 2023



The April bid and offer quantities were slightly higher than in March and higher than the MktTD average. Cleared volumes were slightly higher than in March but slightly lower than the MktTD average. Even though bids and offers have generally increased since market opening, there has been no commensurate increase in cleared volumes.

We have 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 bids whose price is greater than some offer prices in the same interval. Some of this is possible due to transmission constraints and some economic uncleared matches may exist because the cost of transmission losses must be accounted for. Minding transmission losses, we found a much smaller volume of bids and offers are separated by more than the average cost of losses. This means most of these apparently economic uncleared bids/offers could not settle at a price that would pay for transmission losses. Only about 7,300 MWh of bids/offers could settle at a price that could pay the average \$2/MWh losses. Without a complex simulation, there is not a straightforward way to determine why this small amount did not clear, but among the possibilities is transmission constraints and the need for segments that had higher cost of losses. With 7,300 MWh of uncleared economic bid-offer pairs, this means that 84 percent of economic matches were cleared. Only about one percent of the uncleared offers were economic.

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 bid 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
April 2023

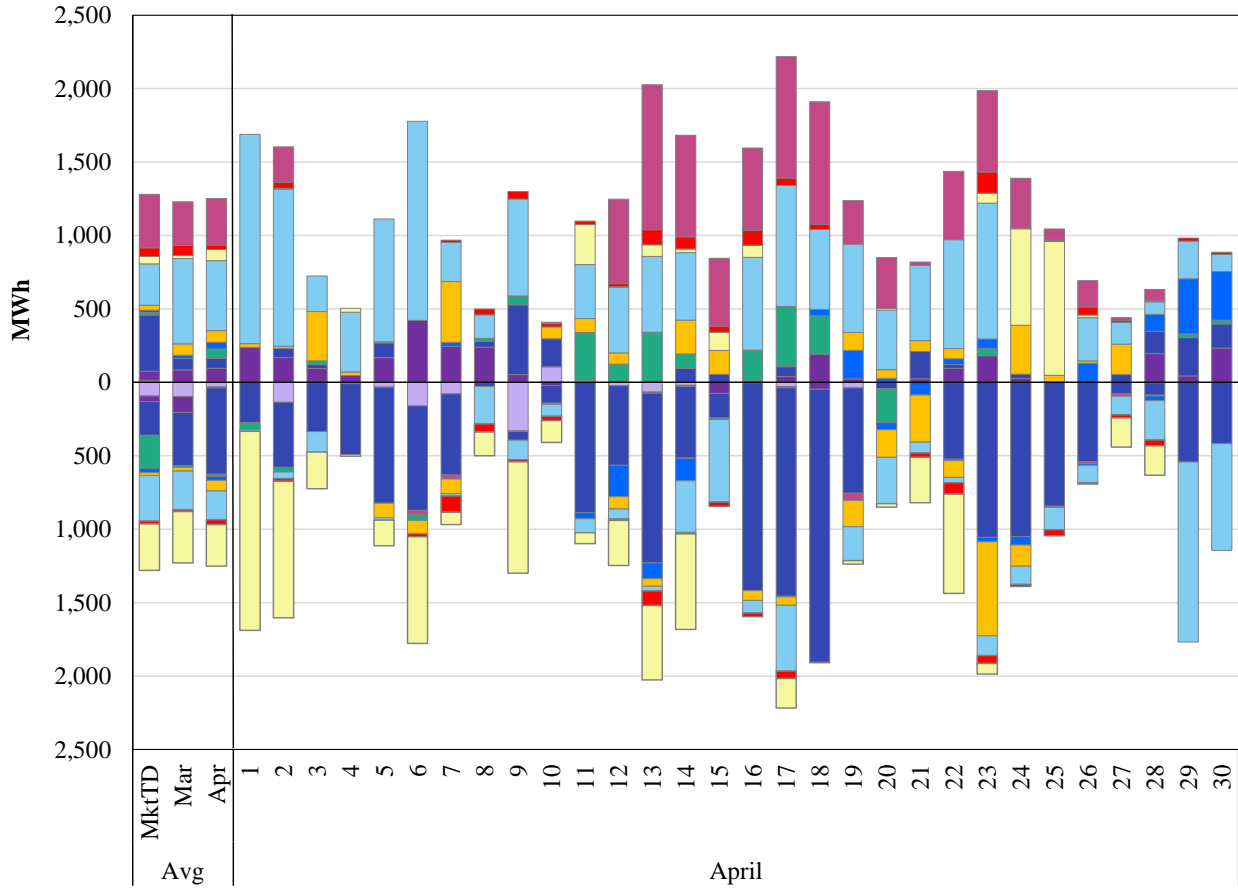
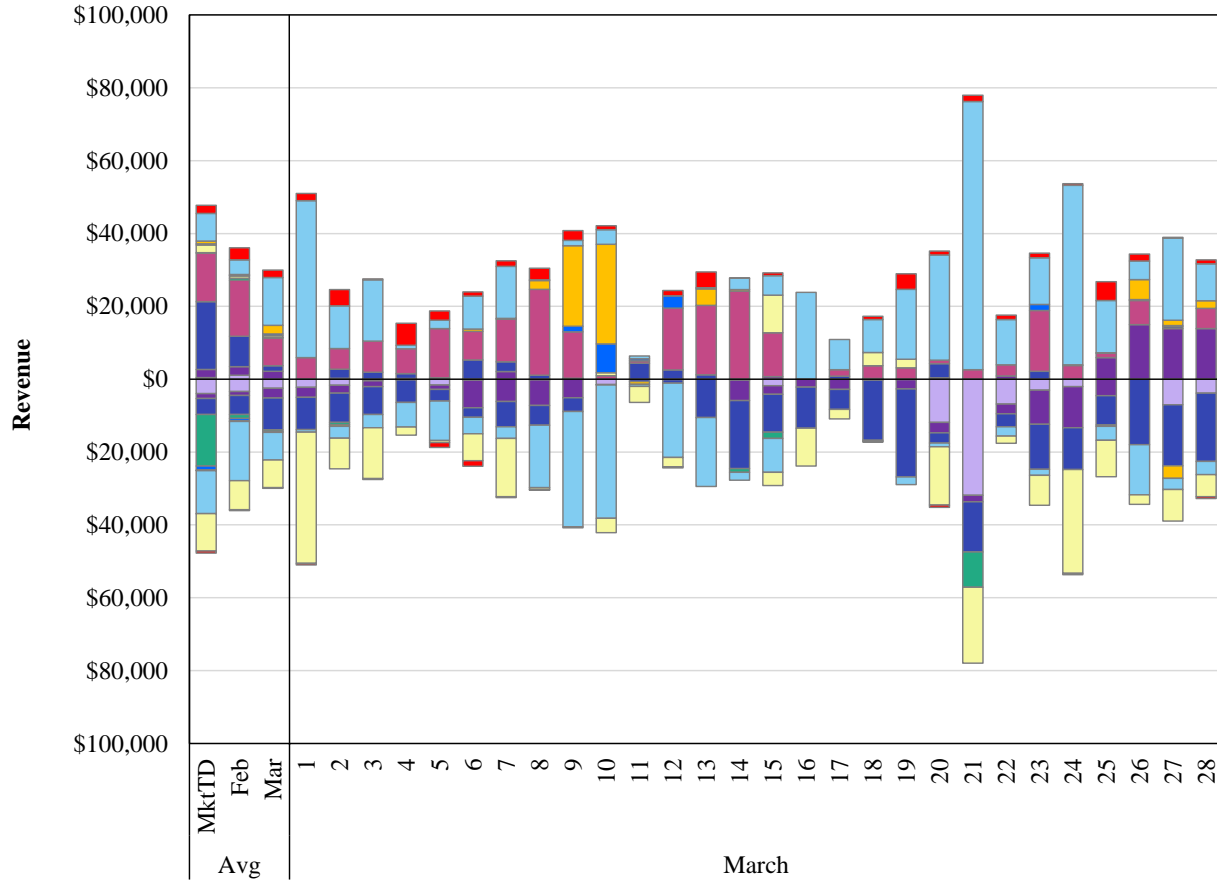


Figure 2 shows certain buyers and sellers comprise significant shares of the transaction activity. About 30 percent of the sales were made by a single participant and the two largest sellers accounted for 50 percent of the volume. On the buyer side, the largest buyer accounted for 47 percent of the cleared volume and the top two buyers accounted for 71 percent. 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.

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
April 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 April 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 April prices compared to the previous period. It shows the average prices for both peak and off peak have declined relative to March and relative to the market-to-date average. This continues a downward price trend since the market opening. Some of this prices decline is likely the result of lower natural gas prices and the moving into the shoulder peak season.

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

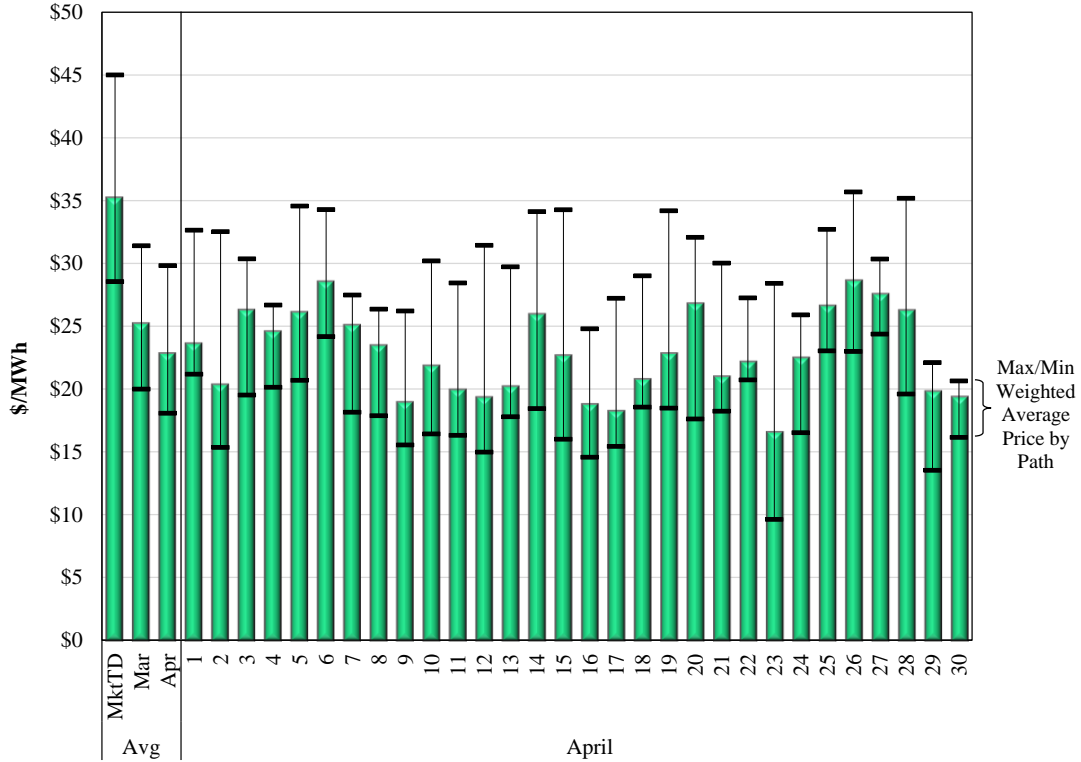
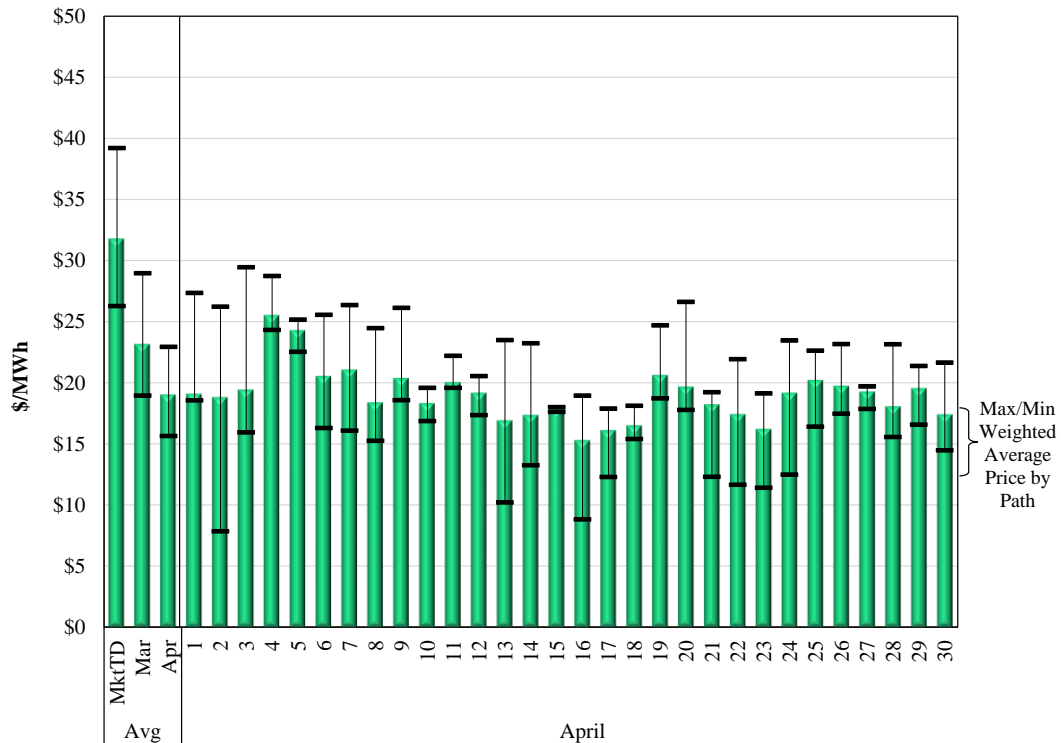


Figure 5: Average SEEM Clearing Prices: System-Wide and by Path
Off-Peak Hours – April 2022



The two figures show that the value of transactions can vary significantly by path. This likely is the result of certain paths linking areas where the most beneficial trades occur – paths linking low-cost to high-cost areas. Transmission constraints can contribute to higher prices between such areas. 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. We gathered ATC and trading statistics for the 180 SEEM segments available to the model. The data includes 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 “load factor” based on the scheduled transactions and ATC on the segment during each 15-minute interval.

Table 1 shows an excerpt of our statistics. The table displays the 23 segments that had more than 1,000 MWh of transactions scheduled during the month. The full data for all segments with more than 20 MWh scheduled during the month is provided in Appendix A. In addition to the ATC and schedule values, 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;¹
- (3) Unavailable ATC (ATC was less than 4 MW at the start of the interval); and
- (4) Uncleared (no schedules on the segment).

In reporting the usage of each segment, we refer to segment-intervals, which are calculated as the product of all 180 segments and the number of intervals during the month. In April, there were 518,400.² Of this total, the most common case in the data was case (4), where ATC was available, but the segment was not used because there were no beneficial transactions that could be cleared by the SEEM model over the intervals (487,215 segment intervals). This is 95 percent of all segment-intervals. The second most common case was case (3), where ATC was not sufficient to clear any SEEM transactions (25,555). The third most common case was case (1), intervals where the segment was partially used (5,418). Finally, in a small number of intervals, case (2) prevailed where the segment was completely scheduled in the interval (212).

¹ ATC less the MW schedule was less than 4 MW (i.e., no additional SEEM transaction could be cleared).

² The maximum number of segment intervals in a month is (180 segment 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 April, SEEM operated in all intervals.

Table 1: Most Used SEEM Segment Statistics

Segment	ATC			MWhs	Loading Factor	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max			Intervals	%	Intervals	%	Intervals	%	Intervals	%
S/CPL/CPL-SEEG//	1,178	5,577	7,677	8,337	0.22%	353	12%	0	0%	0	0%	2527	88%
SS/SOCO/TVA-SOCO//	626	944	1,247	7,312	1.05%	274	10%	0	0%	0	0%	2606	90%
S/TVA/TVA-SOCO//	0	2,744	3,000	6,675	0.38%	211	7%	0	0%	301	10%	2368	82%
S/CPL/CPL-SC//	914	3,015	4,319	5,705	0.26%	358	12%	0	0%	0	0%	2522	88%
SS/SOCO/SEEG-SOCO//	0	878	1,086	5,237	0.86%	197	7%	4	0%	27	1%	2652	92%
S/SC/CPL-SC//	0	1,862	2,474	5,152	0.38%	319	11%	0	0%	6	0%	2555	89%
S/DUK/CPL-SEEG//	442	2,041	2,335	4,927	0.34%	209	7%	0	0%	0	0%	2671	93%
S/SC/SEEG-SC//	0	1,014	1,974	3,229	0.44%	203	7%	0	0%	20	1%	2657	92%
SS/SOCO/SOCO-SOCO//	43,253	43,556	43,556	2,880	0.01%	129	4%	0	0%	0	0%	2751	96%
S/DUK/CPL-TVA//	0	692	692	2,698	0.55%	98	3%	3	0%	1	0%	2778	96%
SS/SOCO/SOCO-SC//	34	480	622	2,693	0.86%	142	5%	1	0%	0	0%	2737	95%
S/DUK/DUK-SOCO//	182	1,897	2,335	2,062	0.16%	118	4%	0	0%	0	0%	2672	96%
P/LGEE/TVA-LGEE//	0	1,413	1,424	1,974	0.20%	91	3%	0	0%	3	0%	2786	97%
S/TVA/DUK-TVA//	0	355	355	1,723	0.68%	58	2%	0	0%	12	0%	2810	98%
S/DUK/SOCO-DUK//	0	1,524	2,220	1,660	0.17%	212	7%	0	0%	253	9%	2415	84%
SS/GTC/GTC-SOCO//	19,669	20,000	20,000	1,409	0.01%	47	2%	0	0%	0	0%	2833	98%
SS/GTC/SOCO-GTC//	12,769	13,321	15,259	1,277	0.01%	72	3%	0	0%	0	0%	2808	98%
SS/SOCO/SOCO-DUK//	155	601	1,054	1,252	0.28%	171	6%	0	0%	0	0%	2709	94%
S/SC/DUK-SC//	0	1,742	2,464	1,128	0.09%	159	6%	0	0%	8	0%	2713	94%
S/SEEG/CPL-SEEG//	75	475	600	1,071	0.32%	139	5%	0	0%	0	0%	2741	95%
S/TVA/DUK-LGEE//	0	355	355	1,066	0.56%	50	2%	0	0%	626	22%	2204	77%
S/CPL/CPL-SEEG//	0	412	631	1,059	0.50%	127	4%	10	0%	576	20%	2167	75%
SS/GTC/DUK-GTC//	0	499	682	1,011	0.32%	52	2%	10	0%	136	5%	2682	93%

Overall, these statistics indicate that many segments remain available for SEEM trades (95 percent). 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 25,767 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 10 percent of the intervals). Like in previous months, the TVA-AEC segment was the most constrained segment with unavailable ATC 89 percent of the time. However, very little cleared on this segment or on the other top segments, as shown in the MWh's cleared column.

The incidence of transmission capacity constraints increased between March and April (as measured by number of constrained segment intervals). Because trading volumes were comparable between the two months, the increased frequency of transmission constraints does not appear to significantly affect liquidity. Moreover, as we explained above, only a very small portion of economic exchanges were uncleared.

Table 2: Most Constrained SEEM Segments

Segment	ATC			MWhs	Loading Factor	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max			Intervals	%	Intervals	%	Intervals	%	Intervals	%
S/AECI/TVA-AECI//	0	0	983	15	0.03%	1	0%	0	0%	2,646	89%	321	11%
S/TVA/AECI-LGEE//	0	51	409	0	0.00%	0	0%	0	0%	816	27%	2152	72%
S/CPL/TVA-DUK//	0	276	308	75	0.05%	6	0%	0	0%	702	24%	2260	76%
S/TVA/TVA-LGEE//	0	445	2,826	45	0.01%	3	0%	0	0%	600	20%	2365	80%
S/CPL/CPL-SCEG//	0	412	484	2,311	1.01%	204	7%	1	0%	576	19%	2187	74%
S/CPL/DUK-SCEG//	0	412	484	0	0.00%	0	0%	0	0%	576	19%	2392	80%
S/TVA/TVA-DUK//	0	355	355	1,725	0.87%	72	2%	3	0%	572	19%	2321	78%
S/SC/SOCO-SC//	0	947	1,740	3,537	0.63%	299	10%	5	0%	572	19%	2092	70%
S/TVA/TVA-CPLW//	0	276	276	70	0.04%	5	0%	0	0%	568	19%	2395	81%
S/SC/DUK-SC//	0	1,292	2,025	865	0.11%	105	4%	2	0%	545	18%	2316	78%
S/SC/SOCO-CPLE//	0	1,956	2,609	180	0.02%	6	0%	0	0%	538	18%	2424	82%
S/SC/SOCO-DUK//	0	2,009	2,609	0	0.00%	0	0%	0	0%	537	18%	2431	82%
S/TVA/SOCO-LGEE//	0	525	2,826	0	0.00%	0	0%	0	0%	536	18%	2432	82%
S/SC/CPL-SC//	0	1,337	2,142	2,605	0.32%	221	7%	2	0%	532	18%	2213	74%
S/TVA/DUK-LGEE//	0	355	355	0	0.00%	0	0%	0	0%	528	18%	2440	82%
S/CPL/DUK-SC//	0	1,453	4,195	0	0.00%	0	0%	0	0%	525	18%	2443	82%
S/SCEG/DUK-SCEG//	0	325	428	155	0.08%	22	1%	0	0%	516	17%	2430	82%
S/SCEG/SOCO-SCEG//	0	881	2,148	856	0.14%	108	4%	0	0%	516	17%	2344	79%
S/SCEG/SOCO-CPLW//	0	672	1,016	60	0.02%	6	0%	0	0%	516	17%	2446	82%
S/SCEG/SOCO-SC//	0	2,161	6,178	103	0.01%	8	0%	1	0%	514	17%	2445	82%
S/TVA/TVA-AECI//	0	622	622	0	0.00%	0	0%	0	0%	508	17%	2460	83%
S/TVA/CPLW-LGEE//	0	276	276	0	0.00%	0	0%	0	0%	504	17%	2464	83%
S/CPL/TVA-CPLW//	0	276	308	0	0.00%	0	0%	0	0%	489	16%	2479	83%
S/CPL/CPL-SC//	0	1,788	4,428	2,657	0.20%	226	8%	1	0%	420	14%	2321	78%
S/TVA/AECI-CPLW//	0	136	276	0	0.00%	0	0%	0	0%	368	12%	2600	87%
S/TVA/AECI-DUK//	0	136	355	189	0.20%	20	1%	20	1%	368	12%	2560	86%
S/CPL/CPLW-TVA//	0	276	308	0	0.00%	0	0%	0	0%	363	12%	2605	88%
SS/GTC/SCEG-GTC//	0	94	110	115	0.19%	14	0%	4	0%	362	12%	2588	87%
S/TVA/SOCO-AECI//	0	622	622	15	0.00%	1	0%	0	0%	352	12%	2615	88%
S/TVA/AECI-SOCO//	0	136	409	2,781	2.93%	102	3%	78	3%	340	11%	2448	82%
S/CPL/CPLW-DUK//	0	690	1,399	0	0.00%	0	0%	0	0%	329	11%	2639	89%
S/MEAG/MEAG-DUK//	0	101	207	52	0.08%	7	0%	4	0%	288	10%	2669	90%

III. CONCLUSION

We reviewed the operation of SEEM for April 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.

**Appendix A
SEEM Path Usage**

Segment	ATC			Loading MWhs	Factor	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max			Intervals	%	Intervals	%	Intervals	%	Intervals	%
S/CPL/CPL-SEEM//	1,178	5,577	7,677	8,337	0.22%	353	12%	0	0%	0	0%	2527	88%
SS/SOCO/TVA-SOCO//	626	944	1,247	7,312	1.05%	274	10%	0	0%	0	0%	2606	90%
S/TVA/TVA-SOCO//	0	2,744	3,000	6,675	0.38%	211	7%	0	0%	301	10%	2368	82%
S/CPL/CPL-SC//	914	3,015	4,319	5,705	0.26%	358	12%	0	0%	0	0%	2522	88%
SS/SOCO/SEEM-SOCO//	0	878	1,086	5,237	0.86%	197	7%	4	0%	27	1%	2652	92%
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S/SEEM/CPL-SEEM//	442	2,041	2,335	4,927	0.34%	209	7%	0	0%	0	0%	2671	93%
S/SC/SEEM-SC//	0	1,014	1,974	3,229	0.44%	203	7%	0	0%	20	1%	2657	92%
SS/SOCO/SEEM-SEEM//	43,253	43,556	43,556	2,880	0.01%	129	4%	0	0%	0	0%	2751	96%
S/SEEM/CPL-TVA//	0	692	692	2,698	0.55%	98	3%	3	0%	1	0%	2778	96%
SS/SOCO/SEEM-SC//	34	480	622	2,693	0.86%	142	5%	1	0%	0	0%	2737	95%
S/SEEM/SEEM-SEEM//	182	1,897	2,335	2,062	0.16%	118	4%	0	0%	0	0%	2762	96%
P/LGEE/TVA-LGEE//	0	1,413	1,424	1,974	0.20%	91	3%	0	0%	3	0%	2786	97%
S/TVA/SEEM-TVA//	0	355	355	1,723	0.68%	58	2%	0	0%	12	0%	2810	98%
S/SEEM/SEEM-SEEM//	0	1,524	2,220	1,660	0.17%	212	7%	0	0%	253	9%	2415	84%
SS/GTC/GTC-SEEM//	19,669	20,000	20,000	1,409	0.01%	47	2%	0	0%	0	0%	2833	98%
SS/GTC/SEEM-GTC//	12,769	13,321	15,259	1,277	0.01%	72	3%	0	0%	0	0%	2808	98%
SS/SOCO/SEEM-DUK//	155	601	1,054	1,252	0.28%	171	6%	0	0%	0	0%	2709	94%
S/SC/SEEM-SC//	0	1,742	2,464	1,128	0.09%	159	6%	0	0%	8	0%	2713	94%
S/SEEG/CPL-SEEG//	75	475	600	1,071	0.32%	139	5%	0	0%	0	0%	2741	95%
S/TVA/SEEM-LGEE//	0	355	355	1,066	0.56%	50	2%	0	0%	626	22%	2204	77%
S/CPL/CPL-SEEG//	0	412	631	1,059	0.50%	127	4%	10	0%	576	20%	2167	75%
SS/GTC/SEEM-GTC//	0	499	682	1,011	0.32%	52	2%	10	0%	136	5%	2682	93%
S/SEEM/SEEM-SC//	103	1,515	2,780	968	0.09%	118	4%	0	0%	0	0%	2762	96%
S/TVA/TVA-SEEM//	0	355	355	963	0.51%	35	1%	1	0%	706	25%	2138	74%
S/AECI/AECI-TVA//	0	501	681	948	0.30%	189	7%	0	0%	109	4%	2582	90%
S/SEEM/TVA-SEEM//	0	653	692	929	0.21%	44	2%	0	0%	11	0%	2825	98%
S/SEEG/SEEM-SEEG//	0	858	1,887	790	0.13%	103	4%	0	0%	12	0%	2765	96%
S/SEEG/SEEM-SEEG//	0	325	428	677	0.31%	93	3%	0	0%	2	0%	2785	97%
S/TVA/AECI-SEEM//	0	9	409	660	2.25%	26	1%	94	3%	789	27%	1971	68%
S/TVA/TVA-LGEE//	0	1,004	2,828	641	0.08%	27	1%	3	0%	714	25%	2136	74%
S/CPL/SEEM-CPL//	0	3,002	6,757	575	0.03%	29	1%	0	0%	43	1%	2808	98%
S/MEAG/SEEM-MEAG//	0	145	238	575	0.52%	47	2%	0	0%	8	0%	2825	98%
SS/SOCO/SEEM-SEEG//	0	147	177	566	0.57%	64	2%	3	0%	156	5%	2657	92%
S/TVA/SEEM-TVA//	0	2,315	3,000	445	0.03%	20	1%	0	0%	12	0%	2848	99%
S/SC/CPL-SEEM//	2,607	3,359	3,933	407	0.02%	18	1%	0	0%	0	0%	2862	99%
S/SEEM/CPL-SEEG//	0	262	263	392	0.24%	46	2%	2	0%	197	7%	2635	91%
SS/SOCO/SC-SEEM//	143	360	491	358	0.14%	8	0%	8	0%	0	0%	2864	99%
P/LGEE/LGEE-TVA//	0	1,623	1,623	341	0.03%	27	1%	0	0%	46	2%	2807	97%
SS/GTC/GTC-SC//	4	344	403	325	0.14%	27	1%	0	0%	0	0%	2853	99%
S/MEAG/MEAG-SEEM//	2,475	2,611	2,705	321	0.02%	21	1%	0	0%	0	0%	2859	99%
S/CPL/SEEM-TVA//	0	276	276	320	0.20%	22	1%	0	0%	554	19%	2304	80%
S/SEEM/CPL-CPLW//	0	260	554	320	0.18%	21	1%	1	0%	174	6%	2684	93%
S/MEAG/MEAG-DUK//	0	64	134	315	0.61%	38	1%	1	0%	120	4%	2721	94%
S/TVA/LGEE-SEEM//	0	2,744	2,828	298	0.02%	21	1%	0	0%	172	6%	2687	93%
SS/SOCO/SEEM-TVA//	721	1,727	2,693	263	0.02%	15	1%	0	0%	0	0%	2865	99%
S/TVA/AECI-DUK//	0	9	355	256	0.88%	12	0%	45	2%	814	28%	2009	70%
S/MEAG/MEAG-SC//	0	70	85	251	0.64%	18	1%	8	0%	388	13%	2466	86%

Appendix A (continued)

Segment	ATC			Loading MWhs	Factor	Partially Used		Fully Used		Unavailable		Uncleared	
	Min	Median	Max			Intervals	%	Intervals	%	Intervals	%	Intervals	%
S/DUK/TVA-CPLE//	0	653	692	229	0.05%	13	0%	0	0%	11	0%	2856	99%
S/DUK/DUK-SCEG//	0	262	263	227	0.14%	29	1%	0	0%	197	7%	2654	92%
S/CPL/TVA-DUK//	0	276	276	223	0.14%	12	0%	0	0%	475	16%	2393	83%
S/DUK/CPLW-CPLE//	0	678	1,243	223	0.05%	12	0%	0	0%	23	1%	2845	99%
S/MEAG/SOCO-MEAG//	2,896	2,990	3,126	222	0.01%	15	1%	0	0%	0	0%	2865	99%
S/DUK/DUK-TVA//	0	692	692	208	0.04%	12	0%	0	0%	1	0%	2867	100%
S/SCEG/SC-SCEG//	1,659	2,960	5,809	205	0.01%	32	1%	0	0%	0	0%	2848	99%
S/TVA/TVA-CPLW//	0	276	276	195	0.14%	5	0%	1	0%	694	24%	2180	76%
S/TVA/CPLW-LGEE//	0	276	276	168	0.11%	10	0%	0	0%	654	23%	2216	77%
SS/GTC/GTC-TVA//	164	522	647	164	0.04%	8	0%	0	0%	0	0%	2872	100%
SS/GTC/GTC-DUK//	0	412	631	162	0.06%	11	0%	0	0%	26	1%	2843	99%
S/DUK/SC-DUK//	0	1,942	2,920	161	0.01%	22	1%	0	0%	196	7%	2662	92%
S/SC/CPLE-SCEG//	73	2,897	4,675	146	0.01%	22	1%	0	0%	0	0%	2858	99%
S/AECI/TVA-AECI//	0	0	731	120	0.18%	8	0%	0	0%	2,376	83%	496	17%
S/SCEG/SCEG-SOCO//	1,553	3,545	6,993	117	0.00%	16	1%	0	0%	0	0%	2864	99%
S/DUK/SOCO-CPLE//	0	1,493	2,220	106	0.01%	8	0%	0	0%	249	9%	2623	91%
S/TVA/CPLW-TVA//	0	276	276	102	0.05%	8	0%	0	0%	12	0%	2860	99%
S/MEAG/MEAG-TVA//	0	113	138	100	0.14%	7	0%	0	0%	96	3%	2777	96%
S/SC/SOCO-DUK//	49	2,010	2,589	100	0.01%	9	0%	0	0%	0	0%	2871	100%
S/TVA/SOCO-LGEE//	0	1,102	2,828	99	0.01%	6	0%	0	0%	682	24%	2192	76%
SS/GTC/SCEG-GTC//	63	91	110	95	0.15%	10	0%	0	0%	0	0%	2870	100%
SS/GTC/TVA-GTC//	0	129	275	92	0.09%	18	1%	0	0%	86	3%	2776	96%
S/DUK/TVA-SC//	180	653	692	88	0.02%	36	1%	0	0%	0	0%	2844	99%
S/TVA/DUK-AECI//	0	355	355	75	0.03%	5	0%	0	0%	12	0%	2863	99%
SS/GTC/SC-GTC//	54	136	185	73	0.08%	11	0%	0	0%	0	0%	2869	100%
S/DUK/SOCO-SC//	0	1,491	2,220	72	0.01%	7	0%	0	0%	242	8%	2631	91%
SS/SOCO/DUK-SCEG/MULTIPATHALIA	0	147	177	69	0.07%	11	0%	0	0%	156	5%	2713	94%
SS/SOCO/TVA-SCEG/MULTIPATHALIA	0	147	177	68	0.07%	10	0%	0	0%	156	5%	2714	94%
SS/SOCO/TVA-DUK/MULTIPATHALIAS	155	601	977	68	0.02%	5	0%	0	0%	0	0%	2875	100%
S/SC/SC-DUK//	1,179	2,384	3,749	67	0.00%	14	0%	0	0%	0	0%	2866	100%
S/SC/SC-SCEG//	655	3,280	7,976	59	0.00%	14	0%	0	0%	0	0%	2866	100%
SS/GTC/GTC-MEAG//	1,871	2,089	2,089	56	0.00%	6	0%	0	0%	0	0%	2874	100%
S/MEAG/GTC-MEAG//	1,853	2,097	2,593	56	0.00%	6	0%	0	0%	0	0%	2874	100%
S/TVA/DUK-SOCO//	0	355	355	48	0.02%	3	0%	0	0%	12	0%	2865	99%
S/TVA/CPLW-AECI//	0	276	276	45	0.02%	3	0%	0	0%	12	0%	2865	99%
S/DUK/DUK-CPLE//	0	2,109	6,703	44	0.00%	10	0%	0	0%	14	0%	2856	99%
S/TVA/SOCO-DUK//	0	355	355	36	0.02%	9	0%	0	0%	370	13%	2501	87%
S/DUK/TVA-SCEG//	0	262	263	34	0.02%	10	0%	2	0%	197	7%	2671	93%
SS/SOCO/TVA-SC/MULTIPATHALIAS/	34	480	622	30	0.01%	9	0%	0	0%	0	0%	2871	100%
S/SCEG/SCEG-DUK//	0	684	945	30	0.01%	7	0%	0	0%	21	1%	2852	99%
S/DUK/SCEG-DUK//	0	664	664	30	0.01%	7	0%	0	0%	207	7%	2666	93%
S/CPL/DUK-SCEG//	0	412	631	27	0.01%	5	0%	0	0%	589	20%	2286	79%
S/TVA/LGEE-DUK//	0	355	355	25	0.01%	4	0%	0	0%	172	6%	2704	94%
SS/GTC/GTC-SCEG//	0	75	91	25	0.06%	5	0%	0	0%	416	14%	2459	85%
S/DUK/SOCO-SCEG//	0	262	263	24	0.02%	5	0%	0	0%	422	15%	2453	85%
S/SC/SC-SOCO//	1,490	2,973	3,783	24	0.00%	9	0%	0	0%	0	0%	2871	100%
S/TVA/AECI-TVA//	0	9	409	22	0.07%	0	0%	11	0%	577	20%	2292	80%
S/MEAG/TVA-MEAG//	38	50	156	21	0.05%	6	0%	0	0%	0	0%	2874	100%