

Providing 2017 Ozone Season Performance Grades to Coal-Fired EGUs with SCR/SNCR across the Eastern Modeling Domain

This methodology to distribute letter grades to individual EGUs builds off of Maryland’s 2017 ozone season analysis of control optimization at coal-fired EGUs with Selective Catalytic Reduction (SCR) and Selective Non-Catalytic Reduction (SNCR) controls across the eastern U.S. In the previous analysis, MDE placed each of the 323 analyzed EGUs into one of three “bins” based on a comparison of each unit’s 2017 ozone season NOx emission rate to its best historical ozone season NOx emission rate. This grading scale utilizes a combination of MDE’s “binning” methodology along with EGU performance emission rates to provide a letter grade to each unit analyzed.

Binning Methodology

MDE assessed SCR/SNCR control optimization for a specific year by comparing ozone season data for that year to a series of rates reflecting various levels of optimization for each unit. These optimized rates are derived from the unit’s 2005-2016 ozone season data (adjusted if controls were installed after 2005), available in the U.S. EPA’s Air Market Programs Database. For initial screening, the lowest ozone season average emission rate was selected for each unit. If the unit installed a SCR or SNCR in 2005 or a later year, the data collection period was narrowed to the first ozone season in the year following the installation to 2016.

A deviation percentage was then calculated for each unit by dividing the current ozone season average emission rate by the identified best ozone season average emission rate. Units were then subdivided into three categories, or bins, based on the calculated percent deviation. Each of these bins represents a different level of optimization based on the unit’s own previously demonstrated performance. Table 1 below provides a description of each of the three bins.

Table 1. Description of Three Bins for EGU Optimization Performance

Bin	Percent Deviation	Description
1	<0%	2017 NOx rate is less than past best rate. Equal or better performance compared to past.
2	0 – 100%	2017 NOx rate is greater than past best rate, but less than double. Slightly poorer performance compared to past.
3	>100%	2017 NOx rate is more than double past best rate. Noticeably poorer performance compared to past.

Grading Scale

While MDE’s binning methodology allows comparison of a unit’s control performance in a particular year to its own previously demonstrated capabilities, it does not allow comparison of units to each other. In order to assign a letter grade to each unit, MDE proposes using the

binning methodology in conjunction with performance rates for SCR and SNCR technologies to provide an indication of the unit's overall efforts to optimize controls. The proposed grading strategy for SCR units can be seen in Figure 1 and SNCR units in Figure 2 below. The two methodologies are identical, but with different rate performance standards for SCR and SNCR units. Under the proposed grading methodology, any SCR unit that achieved a 2017 NO_x emission rate less than 0.10 lb/mmBtu and any SNCR unit under 0.15 lb/mmBtu would receive an A or A+, depending on their designated bin.

Figure 1. Proposed Grading Strategy Flow Chart for SCR units

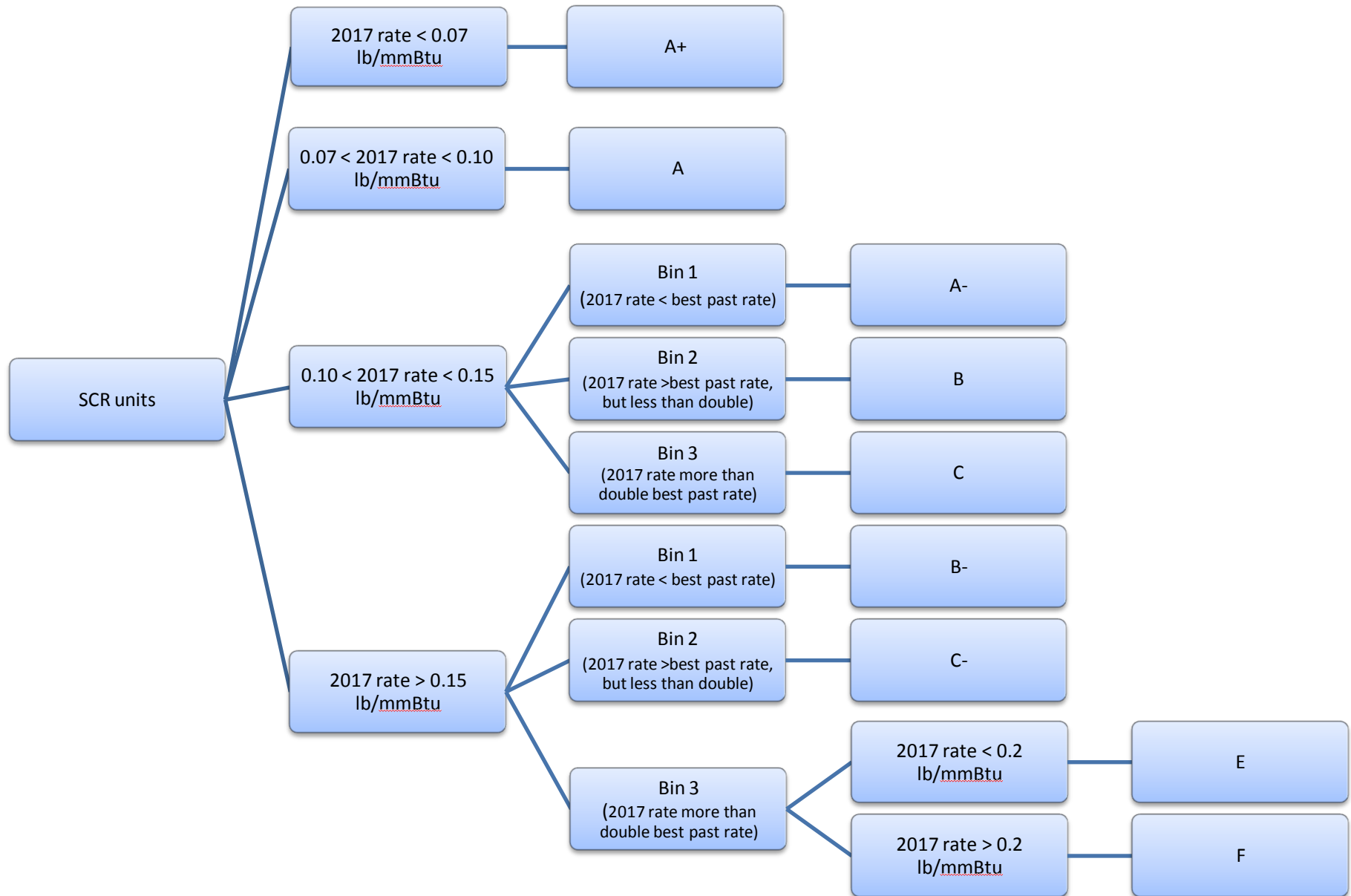
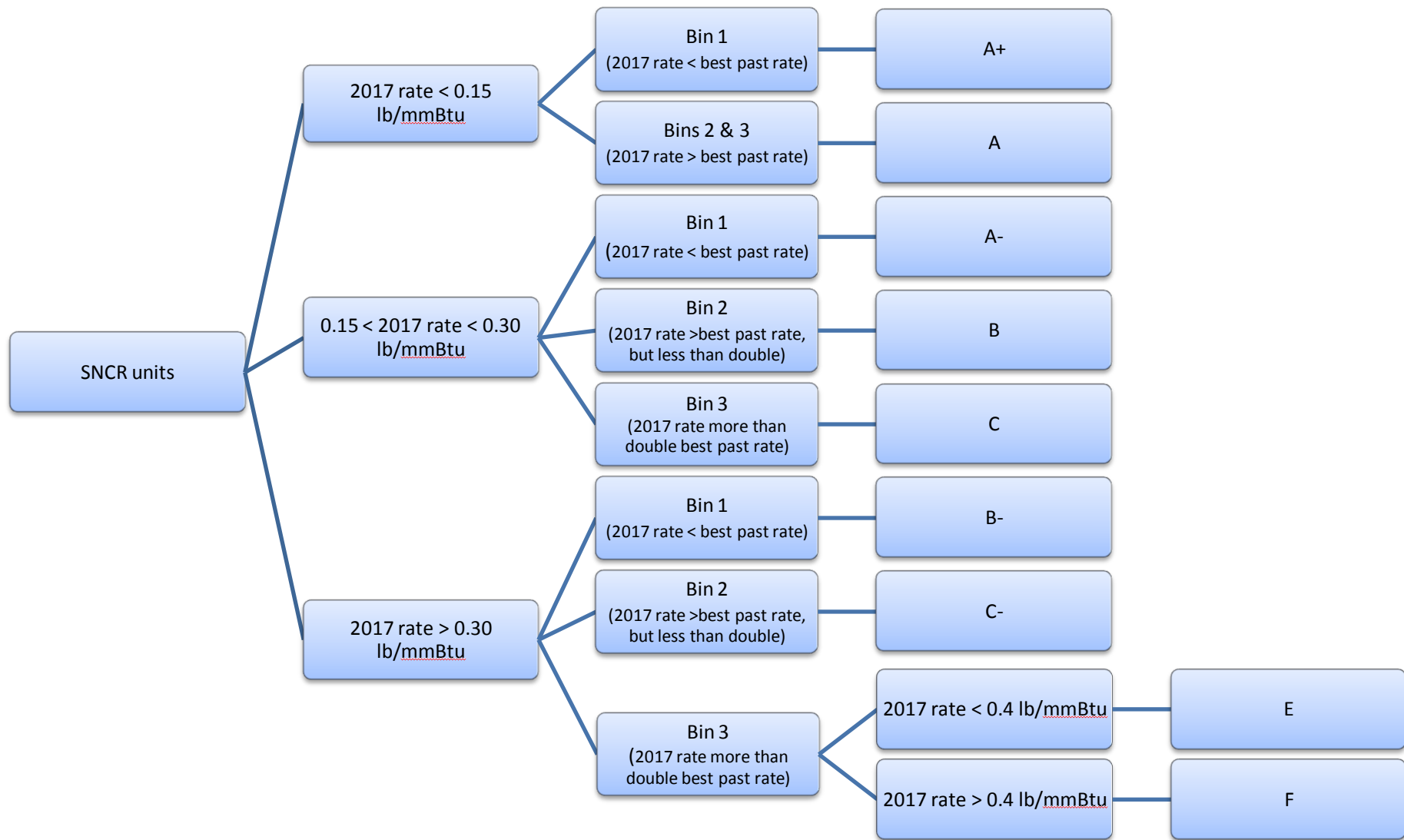


Figure 2. Proposed Grading Strategy Flow Chart for SNCR units



Results

Applying the proposed grading methodology in Figures 1 and 2 shows that EGU performance varies by state. Table 2 shows the domain-wide report card. As can be seen in Table 2, almost two-thirds of the units analyzed received at least an A- and only 8% of the units received an E or F. Figure 3 shows a breakdown of units that receive a grade of E or F by state, and Figure 4 shows the full grade report for each state.

Table 2. Domain-wide Report Card

Grade	Number of SCR Units	Number of SNCR Units	Total Number of Units	Percentage of Total Units
A+	107	7	114	35%
A	74	29	104	32%
A-	4	1	5	2%
B	20	36	56	17%
B-	0	1	1	0%
C	9	0	9	3%
C-	8	4	12	4%
E	20	2	22	7%
F	5	1	6	2%

Figure 3. Number of Units with an “E” or “F” by State

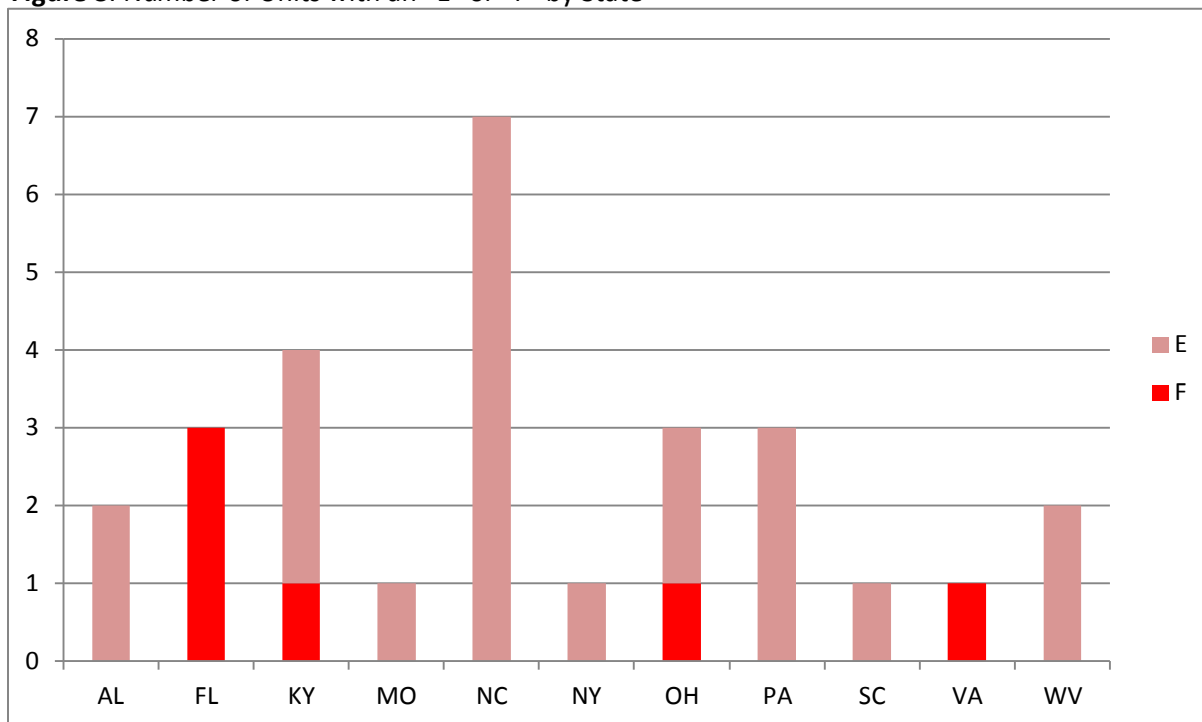
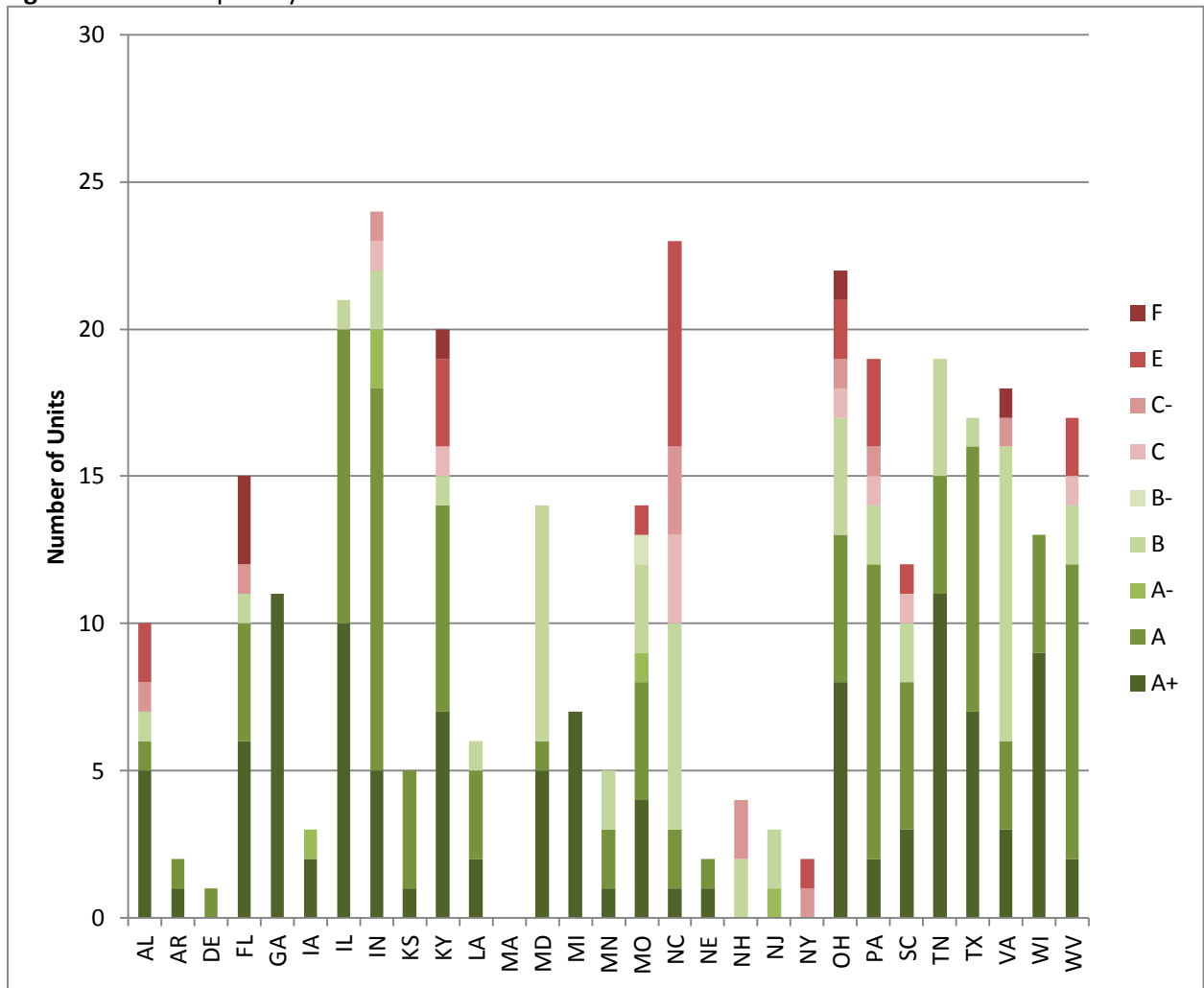


Figure 4. Grade Report by State



2017 OS Letter Grades by Unit

ORIS ID	State	Facility Name	Unit ID	Post Combustion Control Type	2017 OS NOx Rate (lb/mmBtu)	Best OS Emission Rate (lb/mmBtu)	2017 OS Letter Grade
3	AL	Barry	4	SNCR	0.2625	0.2262	B
3	AL	Barry	5	SCR	0.0658	0.0603	A+
56	AL	Charles R Lowman	2	SCR	0.2334	0.1640	C-
56	AL	Charles R Lowman	3	SCR	0.1888	0.0585	E
26	AL	E C Gaston	5	SCR	0.0661	0.0673	A+
8	AL	Gorgas	10	SCR	0.1502	0.0680	E
6002	AL	James H Miller Jr	1	SCR	0.0606	0.0656	A+
6002	AL	James H Miller Jr	2	SCR	0.0652	0.0538	A+
6002	AL	James H Miller Jr	3	SCR	0.0737	0.0542	A
6002	AL	James H Miller Jr	4	SCR	0.0642	0.0630	A+
56564	AR	John W. Turk Jr. Power Plant	SN-01	SCR	0.0409	0.0393	A+
56456	AR	Plum Point Energy Station	1	SCR	0.0745	0.0641	A
594	DE	Indian River	4	SCR	0.0841	0.0657	A
645	FL	Big Bend	BB01	SCR	0.0464	0.0823	A+
645	FL	Big Bend	BB02	SCR	0.0698	0.0809	A+
645	FL	Big Bend	BB03	SCR	0.0834	0.0908	A
645	FL	Big Bend	BB04	SCR	0.0716	0.0748	A
628	FL	Crystal River	4	SCR	0.0500	0.0504	A+
628	FL	Crystal River	5	SCR	0.0548	0.0446	A+
564	FL	Curtis H. Stanton Energy Center	2	SCR	0.1449	0.1022	B
663	FL	Deerhaven	B2	SCR	0.3606	0.0571	F
50976	FL	Indiantown Cogeneration Facility	1	SCR	0.2138	0.1486	C-
667	FL	Northside	1A	SNCR	0.0565	0.0252	A
667	FL	Northside	2A	SNCR	0.0585	0.0420	A
136	FL	Seminole (136)	1	SCR	0.0658	0.0434	A+
136	FL	Seminole (136)	2	SCR	0.0597	0.0404	A+
207	FL	St. Johns River Power	1	SCR	0.3841	0.1265	F
207	FL	St. Johns River Power	2	SCR	0.3776	0.1274	F
703	GA	Bowen	1BLR	SCR	0.0625	0.0547	A+
703	GA	Bowen	2BLR	SCR	0.0578	0.0543	A+
703	GA	Bowen	3BLR	SCR	0.0586	0.0553	A+
703	GA	Bowen	4BLR	SCR	0.0597	0.0525	A+
708	GA	Hammond	4	SCR	0.0629	0.0553	A+
6257	GA	Scherer	1	SCR	0.0636	0.0613	A+

6257	GA	Scherer	2	SCR	0.0630	0.0606	A+
6257	GA	Scherer	3	SCR	0.0635	0.0593	A+
6257	GA	Scherer	4	SCR	0.0633	0.0627	A+
6052	GA	Wansley (6052)	1	SCR	0.0624	0.0475	A+
6052	GA	Wansley (6052)	2	SCR	0.0657	0.0507	A+
7343	IA	George Neal South	4	SNCR	0.1842	0.1873	A-
1047	IA	Lansing	4	SCR	0.0420	0.0413	A+
1082	IA	Walter Scott Jr. Energy Center	4	SCR	0.0571	0.0537	A+
889	IL	Baldwin Energy Complex	1	SCR	0.0832	0.0535	A
889	IL	Baldwin Energy Complex	2	SCR	0.0827	0.0509	A
861	IL	Coffeen	01	SCR	0.0627	0.0495	A+
861	IL	Coffeen	02	SCR	0.0878	0.0524	A
963	IL	Dallman	31	SCR	0.0975	0.0938	A
963	IL	Dallman	32	SCR	0.0980	0.0846	A
963	IL	Dallman	33	SCR	0.0666	0.0603	A+
963	IL	Dallman	4	SCR	0.0622	0.0447	A+
6016	IL	Duck Creek	1	SCR	0.1266	0.0736	B
856	IL	E D Edwards	3	SCR	0.0894	0.0445	A
891	IL	Havana	9	SCR	0.0813	0.0290	A
876	IL	Kincaid Station	1	SCR	0.0637	0.0577	A+
876	IL	Kincaid Station	2	SCR	0.0683	0.0600	A+
976	IL	Marion	123	SNCR	0.0793	0.0656	A
976	IL	Marion	4	SCR	0.0639	0.0785	A+
879	IL	Powerton	51	SNCR	0.0910	0.0985	A+
879	IL	Powerton	52	SNCR	0.0907	0.0987	A+
879	IL	Powerton	61	SNCR	0.1026	0.0973	A
879	IL	Powerton	62	SNCR	0.1003	0.0885	A
55856	IL	Prairie State Generating Company	01	SCR	0.0642	0.0689	A+
55856	IL	Prairie State Generating Company	02	SCR	0.0660	0.0590	A+
6137	IN	A B Brown Generating Station	1	SCR	0.0841	0.0756	A
6137	IN	A B Brown Generating Station	2	SCR	0.1153	0.1009	B
6705	IN	Alcoa Allowance Management Inc	4	SCR	0.0803	0.0948	A
995	IN	Bailly Generating Station	8	SCR	0.1123	0.1167	A-
983	IN	Clifty Creek	1	SCR	0.0738	0.0735	A
983	IN	Clifty Creek	2	SCR	0.0732	0.0750	A
983	IN	Clifty Creek	3	SCR	0.0724	0.0742	A
983	IN	Clifty Creek	4	SCR	0.1023	0.2359	A-
983	IN	Clifty Creek	5	SCR	0.0952	0.2406	A
1004	IN	Edwardsport	CTG1	SCR	0.0503	0.0443	A+
1004	IN	Edwardsport	CTG2	SCR	0.0493	0.0500	A+

1012	IN	F B Culley Generating Station	2	SCR	0.1571	0.1482	C-
1012	IN	F B Culley Generating Station	3	SCR	0.1105	0.0885	B
6113	IN	Gibson	1	SCR	0.0791	0.0343	A
6113	IN	Gibson	2	SCR	0.0530	0.0672	A+
6113	IN	Gibson	3	SCR	0.0827	0.0659	A
6113	IN	Gibson	4	SCR	0.0793	0.0632	A
6113	IN	Gibson	5	SCR	0.1462	0.0597	C
6213	IN	Merom	1SG1	SCR	0.0605	0.0606	A+
6213	IN	Merom	2SG1	SCR	0.0601	0.0587	A+
997	IN	Michigan City Generating Station	12	SCR	0.0990	0.0840	A
994	IN	Petersburg	2	SCR	0.0840	0.0510	A
994	IN	Petersburg	3	SCR	0.0769	0.0466	A
6085	IN	R M Schahfer Generating Station	14	SCR	0.0887	0.0979	A
6068	KS	Jeffrey Energy Center	1	SCR	0.0309	0.0381	A+
6068	KS	Jeffrey Energy Center	2	SNCR	0.1208	0.0988	A
6068	KS	Jeffrey Energy Center	3	SNCR	0.1260	0.1152	A
1241	KS	La Cygne	1	SCR	0.0811	0.0785	A
1241	KS	La Cygne	2	SCR	0.0710	0.0908	A
6823	KY	D B Wilson	W1	SCR	0.0633	0.0477	A+
1355	KY	E W Brown	3	SCR	0.0734	0.1516	A
6018	KY	East Bend	2	SCR	0.1070	0.0518	C
1374	KY	Elmer Smith	1	SCR	0.0950	0.1229	A
1374	KY	Elmer Smith	2	SNCR	0.2965	0.2179	B
1356	KY	Ghent	1	SCR	0.0586	0.0448	A+
1356	KY	Ghent	3	SCR	0.1600	0.0272	E
1356	KY	Ghent	4	SCR	0.0499	0.0272	A+
6041	KY	H L Spurlock	1	SCR	0.0910	0.0829	A
6041	KY	H L Spurlock	2	SCR	0.0891	0.0729	A
6041	KY	H L Spurlock	3	SNCR	0.0615	0.0577	A
6041	KY	H L Spurlock	4	SNCR	0.0603	0.0570	A
1382	KY	HMP&L Station 2	H1	SCR	0.1626	0.0606	E
1382	KY	HMP&L Station 2	H2	SCR	0.1713	0.0666	E
1384	KY	John S. Cooper	2	SCR	0.0941	0.1126	A
1364	KY	Mill Creek	3	SCR	0.0544	0.0450	A+
1364	KY	Mill Creek	4	SCR	0.0600	0.0374	A+
1378	KY	Paradise	3	SCR	0.2230	0.1001	F
6071	KY	Trimble County	1	SCR	0.0674	0.0309	A+
6071	KY	Trimble County	2	SCR	0.0449	0.0480	A+
6055	LA	Big Cajun 2	2B1	SNCR	0.1380	0.1371	A
6055	LA	Big Cajun 2	2B3	SNCR	0.1257	0.1131	A
51	LA	Dolet Hills Power Station	1	SNCR	0.1923	0.1917	B

6190	LA	Rodemacher Power Station (6190)	2	SNCR	0.1266	0.1358	A+
6190	LA	Rodemacher Power Station (6190)	3-1	SNCR	0.0352	0.0289	A
6190	LA	Rodemacher Power Station (6190)	3-2	SNCR	0.0263	0.0419	A+
10678	MD	AES Warrior Run	001	SNCR	0.0709	0.0510	A
602	MD	Brandon Shores	1	SCR	0.0581	0.0589	A+
602	MD	Brandon Shores	2	SCR	0.0674	0.0727	A+
1552	MD	C P Crane	1	SNCR	0.2571	0.2546	B
1552	MD	C P Crane	2	SNCR	0.2938	0.2351	B
1554	MD	Herbert A Wagner	2	SNCR	0.2387	0.2222	B
1554	MD	Herbert A Wagner	3	SCR	0.0632	0.0552	A+
1571	MD	Mirant Chalk Point	1	SCR	0.1098	0.1040	B
1571	MD	Mirant Chalk Point (SACR)	2	SACR	0.2045	0.1927	B
1572	MD	Mirant Dickerson	1	SNCR	0.2353	0.2197	B
1572	MD	Mirant Dickerson	2	SNCR	0.2321	0.2212	B
1572	MD	Mirant Dickerson	3	SNCR	0.2267	0.2178	B
1573	MD	Mirant Morgantown	1	SCR	0.0379	0.0251	A+
1573	MD	Mirant Morgantown	2	SCR	0.0365	0.0309	A+
1702	MI	Dan E Karn	1	SCR	0.0449	0.0488	A+
1702	MI	Dan E Karn	2	SCR	0.0420	0.0443	A+
1710	MI	J H Campbell	2	SCR	0.0582	0.0303	A+
1710	MI	J H Campbell	3	SCR	0.0596	0.0414	A+
1733	MI	Monroe	1	SCR	0.0643	0.0380	A+
1733	MI	Monroe	3	SCR	0.0621	0.0534	A+
1733	MI	Monroe	4	SCR	0.0620	0.0408	A+
1915	MN	Allen S King	1	SCR	0.0944	0.0860	A
1893	MN	Boswell Energy Center	1	SNCR	0.1812	0.1708	B
1893	MN	Boswell Energy Center	2	SNCR	0.1730	0.1714	B
1893	MN	Boswell Energy Center	3	SCR	0.0569	0.0500	A+
1893	MN	Boswell Energy Center	4	SNCR	0.1061	0.1057	A
2076	MO	Asbury	1	SCR	0.0991	0.0918	A
2079	MO	Hawthorn	5A	SCR	0.0664	0.0718	A+
6065	MO	Iatan	1	SCR	0.0688	0.0613	A+
6065	MO	Iatan	2	SCR	0.0488	0.0462	A+
6195	MO	John Twitty Energy Center	1	SCR	0.0948	0.0626	A
6195	MO	John Twitty Energy Center	2	SCR	0.0715	0.0596	A
2167	MO	New Madrid Power Plant	1	SCR	0.1078	0.0895	B
2167	MO	New Madrid Power Plant	2	SCR	0.1044	0.0941	B
2094	MO	Sibley	1	SNCR	0.1419	0.3413	A+
2094	MO	Sibley	2	SNCR	0.3317	0.4161	B-

2094	MO	Sibley	3	SCR	0.1826	0.0787	E
2168	MO	Thomas Hill Energy Center	MB1	SCR	0.1170	0.0958	B
2168	MO	Thomas Hill Energy Center	MB2	SCR	0.1079	0.1150	A-
2168	MO	Thomas Hill Energy Center	MB3	SCR	0.0997	0.0961	A
2706	NC	Asheville	1	SCR	0.0829	0.0455	A
2706	NC	Asheville	2	SCR	0.0815	0.0612	A
8042	NC	Belews Creek	1	SCR	0.1874	0.0280	E
8042	NC	Belews Creek	2	SCR	0.1163	0.0382	C
2721	NC	Cliffside	5	SCR	0.1139	0.0560	C
2721	NC	Cliffside	6	SCR	0.0542	0.0457	A+
2718	NC	G G Allen	1	SNCR	0.2587	0.1643	B
2718	NC	G G Allen	2	SNCR	0.2525	0.1655	B
2718	NC	G G Allen	3	SNCR	0.3286	0.1712	C-
2718	NC	G G Allen	4	SNCR	0.3219	0.1778	C-
2718	NC	G G Allen	5	SNCR	0.2928	0.1912	B
2727	NC	Marshall	1	SNCR	0.2515	0.1960	B
2727	NC	Marshall	2	SNCR	0.2652	0.1956	B
2727	NC	Marshall	3	SCR	0.1085	0.0679	B
2727	NC	Marshall	4	SNCR	0.2500	0.2008	B
6250	NC	Mayo	1A	SCR	0.1645	0.0610	E
6250	NC	Mayo	1B	SCR	0.1638	0.0614	E
2712	NC	Roxboro	1	SCR	0.1645	0.0840	C-
2712	NC	Roxboro	2	SCR	0.1320	0.0575	C
2712	NC	Roxboro	3A	SCR	0.1699	0.0742	E
2712	NC	Roxboro	3B	SCR	0.1726	0.0756	E
2712	NC	Roxboro	4A	SCR	0.1741	0.0793	E
2712	NC	Roxboro	4B	SCR	0.1812	0.0793	E
60	NE	Gerald Whelan Energy Center	2	SCR	0.0716	0.0619	A
6096	NE	Nebraska City Station	2	SCR	0.0647	0.0570	A+
2364	NH	Merrimack	1	SCR	0.3141	0.1613	C-
2364	NH	Merrimack	2	SCR	0.3100	0.1590	C-
2367	NH	Schiller	4	SNCR	0.2191	0.1811	B
2367	NH	Schiller	6	SNCR	0.1951	0.1896	B
10566	NJ	Carneys Point	1001	SCR	0.1123	0.1211	A-
10566	NJ	Carneys Point	1002	SCR	0.1126	0.1069	B
10043	NJ	Logan Generating Plant	1001	SCR	0.1122	0.1009	B
2535	NY	AES Cayuga, LLC	1	SCR	0.1968	0.0922	E
6082	NY	AES Somerset (Kintigh)	1	SCR	0.1705	0.1361	C-
2836	OH	Avon Lake Power Plant	12	SNCR	0.3206	0.2842	C-
2828	OH	Cardinal	1	SCR	0.0696	0.0281	A+
2828	OH	Cardinal	2	SCR	0.0598	0.0426	A+

2828	OH	Cardinal	3	SCR	0.0688	0.0226	A+
2840	OH	Conesville	4	SCR	0.0819	0.0546	A
8102	OH	Gen J M Gavin	1	SCR	0.1048	0.0686	B
8102	OH	Gen J M Gavin	2	SCR	0.1053	0.0553	B
2850	OH	J M Stuart	2	SCR	0.0926	0.0950	A
2850	OH	J M Stuart	3	SCR	0.0989	0.0976	A
2850	OH	J M Stuart	4	SCR	0.0981	0.0984	A
6031	OH	Killen Station	2	SCR	0.2644	0.0885	F
2876	OH	Kyger Creek	1	SCR	0.0604	0.0788	A+
2876	OH	Kyger Creek	2	SCR	0.0596	0.0792	A+
2876	OH	Kyger Creek	3	SCR	0.0634	0.0787	A+
2876	OH	Kyger Creek	4	SCR	0.0641	0.0786	A+
2876	OH	Kyger Creek	5	SCR	0.0642	0.0785	A+
2832	OH	Miami Fort Generating Station	7	SCR	0.1142	0.0536	C
2832	OH	Miami Fort Generating Station	8	SCR	0.1584	0.0540	E
2866	OH	W H Sammis	5	SNCR	0.1373	0.1058	A
2866	OH	W H Sammis	6	SCR	0.1021	0.0959	B
2866	OH	W H Sammis	7	SCR	0.1064	0.1019	B
6019	OH	W H Zimmer Generating Station	1	SCR	0.1928	0.0562	E
6094	PA	Bruce Mansfield	1	SCR	0.0650	0.0820	A+
6094	PA	Bruce Mansfield	2	SCR	0.0775	0.0801	A
6094	PA	Bruce Mansfield	3	SCR	0.0826	0.0744	A
10641	PA	Cambria Cogen	1	SNCR	0.1530	0.0945	B
8226	PA	Cheswick	1	SCR	0.1559	0.0901	C-
3118	PA	Conemaugh	1	SCR	0.0720	0.1966	A
3118	PA	Conemaugh	2	SCR	0.0744	0.1099	A
3122	PA	Homer City	1	SCR	0.1755	0.0667	E
3122	PA	Homer City	2	SCR	0.1791	0.0826	E
3122	PA	Homer City	3	SCR	0.1148	0.0872	B
3136	PA	Keystone	1	SCR	0.0851	0.0431	A
3136	PA	Keystone	2	SCR	0.0695	0.0433	A+
3149	PA	Montour	1	SCR	0.1443	0.0581	C
3149	PA	Montour	2	SCR	0.1525	0.0578	E
50776	PA	Panther Creek Energy Facility	1	SNCR	0.1055	0.1051	A
50776	PA	Panther Creek Energy Facility	2	SNCR	0.1186	0.1056	A
50974	PA	Scrubgrass Generating Plant	2	SNCR	0.1473	0.0793	A
3130	PA	Seward	1	SNCR	0.0945	0.0747	A
3130	PA	Seward	2	SNCR	0.0935	0.0745	A
7210	SC	Cope Station	COP1	SCR	0.1238	0.0799	B
130	SC	Cross	1	SCR	0.0726	0.0664	A
130	SC	Cross	2	SCR	0.0127	0.0702	A+
130	SC	Cross	3	SCR	0.0669	0.0590	A+

130	SC	Cross	4	SCR	0.0681	0.0591	A+
3297	SC	Wateree	WAT1	SCR	0.1103	0.0601	B
3297	SC	Wateree	WAT2	SCR	0.1084	0.0541	C
3298	SC	Williams	WIL1	SCR	0.1570	0.0601	E
6249	SC	Winyah	1	SCR	0.0764	0.0623	A
6249	SC	Winyah	2	SCR	0.0896	0.0679	A
6249	SC	Winyah	3	SCR	0.0905	0.0812	A
6249	SC	Winyah	4	SCR	0.0894	0.0869	A
3393	TN	Allen	1	SCR	0.0850	0.0568	A
3393	TN	Allen	2	SCR	0.0784	0.0711	A
3393	TN	Allen	3	SCR	0.0883	0.0664	A
3396	TN	Bull Run	1	SCR	0.0843	0.0618	A
3399	TN	Cumberland	1	SCR	0.0583	0.0588	A+
3399	TN	Cumberland	2	SCR	0.0613	0.0606	A+
3406	TN	Johnsonville	1	SNCR	0.1562	0.1429	B
3406	TN	Johnsonville	2	SNCR	0.1507	0.1389	B
3406	TN	Johnsonville	3	SNCR	0.1513	0.1391	B
3406	TN	Johnsonville	4	SNCR	0.1516	0.1389	B
3407	TN	Kingston	1	SCR	0.0591	0.0498	A+
3407	TN	Kingston	2	SCR	0.0613	0.0501	A+
3407	TN	Kingston	3	SCR	0.0586	0.0504	A+
3407	TN	Kingston	4	SCR	0.0623	0.0501	A+
3407	TN	Kingston	5	SCR	0.0583	0.0486	A+
3407	TN	Kingston	6	SCR	0.0585	0.0448	A+
3407	TN	Kingston	7	SCR	0.0572	0.0447	A+
3407	TN	Kingston	8	SCR	0.0573	0.0448	A+
3407	TN	Kingston	9	SCR	0.0584	0.0449	A+
3497	TX	Big Brown	1	SNCR	0.1313	0.1261	A
3497	TX	Big Brown	2	SNCR	0.1419	0.1305	A
7097	TX	J K Spruce	**2	SCR	0.0483	0.0392	A+
6147	TX	Monticello	1	SNCR	0.1496	0.1269	A
6147	TX	Monticello	2	SNCR	0.1572	0.1187	B
6147	TX	Monticello	3	SNCR	0.1434	0.1360	A
6180	TX	Oak Grove 1	1	SCR	0.0723	0.0650	A
6180	TX	Oak Grove 2	2	SCR	0.0738	0.0665	A
6648	TX	Sadow	4	SCR	0.0679	0.0607	A+
52071	TX	Sadow 5	5A	SCR	0.0702	0.0618	A
52071	TX	Sadow 5	5B	SCR	0.0688	0.0626	A+
56611	TX	Sandy Creek	S01	SCR	0.0506	0.0397	A+
7030	TX	Twin Oaks Power, LP	U1	SNCR	0.0778	0.0886	A+
7030	TX	Twin Oaks Power, LP	U2	SNCR	0.0866	0.0844	A
3470	TX	W A Parish	WAP5	SCR	0.0546	0.0383	A+

3470	TX	W A Parish	WAP6	SCR	0.0828	0.0394	A
3470	TX	W A Parish	WAP7	SCR	0.0414	0.0360	A+
54304	VA	Birchwood Power Facility	001	SCR	0.0949	0.0879	A
3797	VA	Chesterfield Power Station	4	SCR	0.0545	0.0487	A+
3797	VA	Chesterfield Power Station	5	SCR	0.0464	0.0309	A+
3797	VA	Chesterfield Power Station	6	SCR	0.0510	0.0326	A+
7213	VA	Clover Power Station	1	SNCR	0.2694	0.2327	B
7213	VA	Clover Power Station	2	SNCR	0.2754	0.2428	B
54081	VA	Spruance Genco, LLC	BLR01 A	SNCR	0.2904	0.2608	B
54081	VA	Spruance Genco, LLC	BLR01 B	SNCR	0.2901	0.2600	B
54081	VA	Spruance Genco, LLC	BLR02 A	SNCR	0.2952	0.2548	B
54081	VA	Spruance Genco, LLC	BLR02 B	SNCR	0.2942	0.2547	B
54081	VA	Spruance Genco, LLC	BLR03 A	SNCR	0.2770	0.2614	B
54081	VA	Spruance Genco, LLC	BLR03 B	SNCR	0.2768	0.2616	B
54081	VA	Spruance Genco, LLC	BLR04 A	SNCR	0.2991	0.2648	B
54081	VA	Spruance Genco, LLC	BLR04 B	SNCR	0.2962	0.2647	B
56808	VA	Virginia City Hybrid Energy Center	1	SNCR	0.0640	0.0622	A
56808	VA	Virginia City Hybrid Energy Center	2	SNCR	0.0609	0.0559	A
3809	VA	Yorktown Power Station	1	SNCR	0.4466	0.2242	C-
3809	VA	Yorktown Power Station	2	SNCR	0.4476	0.2204	F
4050	WI	Edgewater (4050)	4	SNCR	0.1370	0.1262	A
4050	WI	Edgewater (4050)	5	SNCR	0.0334	0.0361	A+
56068	WI	Elm Road Generating Station	1	SCR	0.0603	0.0490	A+
56068	WI	Elm Road Generating Station	2	SCR	0.0611	0.0497	A+
4143	WI	Genoa	1	SNCR	0.1158	0.1124	A
4125	WI	Manitowoc	9	SNCR	0.0386	0.0368	A
6170	WI	Pleasant Prairie	1	SCR	0.0706	0.0498	A
6170	WI	Pleasant Prairie	2	SCR	0.0672	0.0569	A+
4041	WI	South Oak Creek	5	SCR	0.0657	0.0686	A+
4041	WI	South Oak Creek	6	SCR	0.0664	0.0681	A+
4041	WI	South Oak Creek	7	SCR	0.0596	0.0582	A+
4041	WI	South Oak Creek	8	SCR	0.0603	0.0606	A+
4078	WI	Weston	4	SCR	0.0529	0.0477	A+
10151	WV	Grant Town Power Plant	1A	SNCR	0.3148	0.0721	E

10151	WV	Grant Town Power Plant	1B	SNCR	0.3150	0.0722	E
3944	WV	Harrison Power Station	1	SCR	0.1045	0.0634	B
3944	WV	Harrison Power Station	2	SCR	0.0867	0.0662	A
3944	WV	Harrison Power Station	3	SCR	0.0721	0.0658	A
3935	WV	John E Amos	1	SCR	0.0783	0.0317	A
3935	WV	John E Amos	2	SCR	0.0730	0.0312	A
3935	WV	John E Amos	3	SCR	0.1128	0.0614	B
56671	WV	Longview Power	001	SCR	0.0563	0.0648	A+
3948	WV	Mitchell (WV)	1	SCR	0.0819	0.0547	A
3948	WV	Mitchell (WV)	2	SCR	0.0888	0.0520	A
3954	WV	Mount Storm Power Station	1	SCR	0.0683	0.0539	A+
3954	WV	Mount Storm Power Station	2	SCR	0.0910	0.0485	A
3954	WV	Mount Storm Power Station	3	SCR	0.0801	0.0768	A
6264	WV	Mountaineer (1301)	1	SCR	0.0961	0.0387	A
6004	WV	Pleasants Power Station	1	SCR	0.0835	0.0394	A
6004	WV	Pleasants Power Station	2	SCR	0.1317	0.0390	C