

30-day Public Review

The Calendar Year (CY) 2022 Ongoing Data Requirements Rule (DRR) annual report for the 1-hr SO₂ NAAQS is available for public review from May 26, 2023 through June 26, 2023.

Any comments on this report should be submitted by emailing Carla Brown at

<https://www.mdeq.ms.gov/brown-carla> no later than June 26, 2023.



MISSISSIPPI DEPARTMENT OF
ENVIRONMENTAL QUALITY

Ongoing Data Requirements Rule Verification
2010 1-Hour Sulfur Dioxide (SO₂) Primary
National Ambient Air Quality Standard (NAAQS)
Mississippi Department of Environmental Quality
May 26, 2023

R.D. Morrow Senior Generating Plant – Lamar County, MS

On June 2, 2010, the U.S. Environmental Protection Agency (EPA) revised the NAAQS for SO₂ by establishing a 1-hour standard at a level of 75 parts per billion (ppb), which is equivalent to 196.34 µg/m³. In 2015, Cooperative Energy (formerly South Mississippi Electric Power Association) conducted sulfur dioxide (SO₂) designation modeling to determine whether the area around the R.D. Morrow Senior Generation Plant (R.D. Morrow Plant) should be designated as attainment or non-attainment. Cooperative Energy conducted the SO₂ designation modeling using the EPA's preferred air dispersion model for near-field regulatory applications, the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD). Cooperative Energy used the following dispersion modeling methodology to determine the designation status of the area around the R.D. Morrow Plant:

- Used the most recent three years of actual emissions (2012, 2013, and 2014);
- Used three years of meteorological data (2012, 2013, and 2014);
- Used actual stack heights rather than limiting model stack heights to GEP height; and
- Included nearby sources from the regional inventories provided by the MDEQ.

Cooperative Energy conducted the dispersion modeling in accordance with the modeling protocol approved by the EPA. Table 1 shows the dispersion modeling results, which indicated the area around the R.D. Morrow Plant should be classified as “attainment” and that Cooperative Energy was not causing or contributing to any violations of the 1-hour SO₂ NAAQS.

Table 1: R.D. Morrow Plant SO₂ Designation Modeling Results

	2012	2013	2014
4th Maximum Modeled Concentration, µg/m ³	125.11	123.02	131.42
Design Value Concentration, µg/m ³	115.17	123.02	95.89
4th Highest Averaged Concentration (2012-2014), µg/m ³	111.36		
Background Concentration	36.65		
NAAQS	196.34		
NAAQS Exceedance (Yes/No)	No		

In February of 2016, EPA notified the Mississippi Department of Environmental Quality (MDEQ) that, based on the modeling submitted, Lamar County, MS is designated as unclassifiable/attainment for the 2010 SO₂ standard. Under 40 CFR 51.1205(b), areas designated as attaining the standard based on modeling of actual emissions are required to submit a report including more recent emissions data and evaluating whether further modeling is warranted. Table 2 includes the facility emissions from EPA's Clean Air Markets Program Data (CAMPD) database.

Table 2: R.D. Morrow Senior Generating Plant SO₂ Emissions

Facility Name	Year	Unit ID	Operating Time	Heat Input (MMBtu)	SO ₂ (tons)	Total SO ₂ (tons)
R.D. Morrow Plant	2014	1	2,878	4,592,321	938	2,210
		2	2,569	4,079,314	1,272	
	2015	1	746	1,102,708	54	222
		2	1,480	1,801,828	168	
	2016	1	1,787	2,329,180	63	114
		2	2,050	2,444,379	52	
	2017	1	795	874,919	12	16
		2	260	293,076	4	
	2018	1	0	0	0	30
		2	1,110	1,510,457	30	

Source: EPA's Clean Air Markets Program Data (CAMPD) database

As shown in Table 2, total SO₂ emissions for the R.D. Morrow Plant have decreased since the years used in the modeling submitted in 2015. On November 9, 2018, Cooperative Energy submitted Retired Unit Exemption forms to EPA indicating that both Units ID #1 and #2 would be permanently retired on November 17, 2018. Both units have been retired and dismantled. These units were permitted to be replaced with two new natural gas combined cycle (NGCC) units. Table 3 lists potential emissions for the new NGCC units as stated in Cooperative Energy's application and in the Mississippi Air Pollution Control Permit and Prevention of Significant Deterioration (PSD) Authority number 1440-00021.

Table 3: R.D. Morrow Plant SO₂ Emissions of NGCC Units

Facility Name	Source Description	Source Unit	Potential Emissions (tpy)	2022 Actual Emissions (tpy) ¹
R.D. Morrow Plant	New NGCC	3	50.7	0.22
R.D. Morrow Plant	New NGCC	TBD	50.7	N/A

¹ Source: EPA's Clean Air Markets Program Data (CAMPD) database

Because the county was classified as unclassifiable/attainment while the coal-fired units were operational, the R.D. Morrow Plant does not cause or contribute to any violations of the 1-hour SO₂ NAAQS in the vicinity of the facility since the potential emissions of the permitted new units are well below the modeled emissions. Table 3 also provides the actual emissions for Unit 3, the only unit currently constructed and operating. In a letter dated May 17, 2023, MDEQ formally requested that EPA terminate the Ongoing Data Requirements annual reporting requirements for the 2010 1-hour SO₂ primary NAAQS for the R.D. Morrow Plant. Based on the actual emissions presented in Tables 2 and 3 above, the previous modeling used for the 2010 SO₂ Round 2 designations remains valid and no additional modeling is needed. MDEQ recommends that Lamar County, MS remain classified as unclassifiable/attainment.

Daniel Electric Generating Plant – Jackson County, MS

On June 2, 2010, the U.S. Environmental Protection Agency (EPA) revised the primary NAAQS for SO₂ by establishing a 1-hour standard at a level of 75 parts per billion (ppb), which is equivalent to 196.34 µg/m³. In 2016, Mississippi Power Company conducted sulfur dioxide (SO₂) designation modeling to determine whether the area around the Daniel Electric Generating Plant should be designated as attainment or non-attainment. Mississippi Power conducted the SO₂ designation modeling using the EPA's preferred air dispersion model for near-field regulatory applications, the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD). Mississippi Power used the following dispersion modeling methodology to determine the designation status of the area around the Daniel Electric Generating Plant:

- Used the most recent three years of actual emissions (2012, 2013, and 2014);
- Used three years of meteorological data (2012, 2013, and 2014);
- Used actual stack heights rather than limiting model stack heights to GEP height; and
- Included nearby sources from the regional inventories provided by the MDEQ.

Mississippi Power conducted the dispersion modeling in accordance with the modeling protocol approved by the EPA. Table 4 shows the dispersion modeling results, which indicated the area around the Daniel Electric Generating Plant should be classified as “attainment” and Mississippi Power was not causing or contributing to any violations of the 1-hour SO₂ NAAQS.

Table 4: SO₂ Designation Modeling Results – Daniel Electric Generating Plant

Pollutant	Averaging Period	Model Design Concentration (µg/m ³)	Monitored Background Concentration (µg/m ³)	Total Concentration (µg/m ³)	NAAQS (µg/m ³)	Below NAAQS (Y/N)?	Percent of NAAQS (%)
SO ₂	1-hour	105.83	42.14	147.97	196.5	Y	75%

In December of 2017, EPA notified the Mississippi Department of Environmental Quality (MDEQ) that, based on the modeling submitted, Jackson County, MS is designated as unclassifiable/attainment for the 2010 SO₂ standard. Under 40 CFR 51.1205(b), areas designated as attaining the standard based on modeling of actual emissions are required to submit an annual report including more recent emissions data and evaluating whether further modeling is warranted. Table 5 includes the facility emissions from EPA's Clean Air Markets Program Data (CAMPD) database.

Table 5: Daniel Electric Generating Plant SO₂ Emissions

Facility Name	Year	Unit ID	Operating Time	Heat Input (MMBtu)	SO ₂ (tons)	Total SO ₂ (tons)
Daniel Electric Generating Plant	2014	1	6,317	21,667,533	7,738	14,898
		2	5,846	19,752,977	7,146	
		3A	7,327	11,927,586	4	
		3B	7,341	11,945,257	4	
		4A	8,261	13,173,310	4	
		4B	8,099	12,840,510	4	
	2015	1	3,977	13,445,218	3,706	8,412
		2	4,910	15,446,598	4,689	
		3A	8,297	14,095,612	4	
		3B	8,236	14,126,696	4	
		4A	8,366	14,113,507	4	
		4B	8,224	13,506,573	4	
	2016	1	5,474	12,620,563	76	156
		2	5,475	13,640,775	65	
		3A	7,874	13,325,951	4	
		3B	8,344	14,235,469	4	
		4A	6,777	11,424,450	3	
		4B	7,337	12,193,976	4	
	2017	1	7,040	16,271,301	107	205
		2	5,293	12,695,088	82	
		3A	7,176	12,413,196	4	
		3B	7,092	12,095,756	4	
		4A	8,120	13,735,333	4	
		4B	8,281	13,269,125	4	
	2018	1	6,063	14,195,649	129	253
		2	6,332	15,809,312	107	
		3A	8,193	14,216,628	4	
		3B	8,306	14,190,498	4	
		4A	8,274	14,214,429	4	
		4B	8,224	13,393,013	4	
	2019	1	4,739	11,925,228	104	223
		2	5,634	14,407,654	103	
		3A	8,174	14,495,875	4	
		3B	8,228	14,520,961	4	
		4A	8,241	14,365,153	4	
		4B	7,404	12,278,870	4	

Facility Name	Year	Unit ID	Operating Time	Heat Input (MMBtu)	SO ₂ (tons)	Total SO ₂ (tons)
Daniel Electric Generating Plant	2020	1	4,262	11,281,679	69	181
		2	6,374	18,042,376	94	
		3A	8,456	15,134,208	5	
		3B	8,394	14,927,474	4	
		4A	7,792	13,698,738	4	
		4B	7,951	13,291,443	4	
	2021	1	6,675	22,725,173	93	169
		2	3,772	10,792,796	59	
		3A	8,056	14,304,857	4	
		3B	8,056	13,938,100	4	
		4A	8,353	14,189,489	4	
		4B	8,338	13,608,860	4	
	2022	1	4,512	14,195,995	132	302
		2	5,501	18,919,624	154	
		3A	7,635	13,791,556	4	
		3B	7,614	13,340,862	4	
		4A	7,626	13,350,288	4	
		4B	8,269	13,415,632	4	

Source: EPA's Clean Air Markets Program Data (CAMPD) database

As shown in Table 5, total SO₂ emissions for the Daniel Electric Generating Plant have decreased significantly since the years used in the modeling submitted in 2016. Therefore, the previous modeling used for the 2010 SO₂ Round 3 designations remains valid and no additional modeling is needed. MDEQ recommends that Jackson County, MS remain classified as unclassifiable/attainment.

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Red Hills Generation Facility – Choctaw County, MS

On June 2, 2010, the U.S. Environmental Protection Agency (EPA) revised the primary NAAQS for SO₂ by establishing a 1-hour standard at a level of 75 parts per billion (ppb), which is equivalent to 196.34 µg/m³. In 2016, Choctaw Generation, L.L.P. conducted sulfur dioxide (SO₂) designation modeling to determine whether the area around the Red Hills Generation Facility should be designated as attainment or non-attainment. Choctaw Generation, L.L.P. conducted the SO₂ designation modeling using the EPA’s preferred air dispersion model for near-field regulatory applications, the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD). Choctaw Generation, L.L.P. used the following dispersion modeling methodology to determine the designation status of the area around the Red Hills Generation Facility:

- Used the most recent three years of actual emissions (2012, 2013, and 2014);
- Used three years of meteorological data (2012, 2013, and 2014);
- Used actual stack heights rather than limiting model stack heights to GEP height; and
- Included nearby sources from the regional inventories provided by the MDEQ.

Choctaw Generation, L.L.P. conducted the dispersion modeling in accordance with the modeling protocol approved by the EPA. Table 6 shows the dispersion modeling results, which indicated the area around the Red Hills Generation Facility should be classified as “attainment” and Choctaw Generation, L.L.P. was not causing or contributing to any violations of the 1-hour SO₂ NAAQS.

Table 6: SO₂ Designation Modeling Results – Red Hills Generation Facility

Pollutant	Averaging Period	Model Design Concentration (µg/m ³)	Monitored Background Concentration (µg/m ³)	Total Concentration (µg/m ³)	NAAQS (µg/m ³)	Below NAAQS (Y/N)?	Percent of NAAQS (%)
SO ₂	1-hour	45.43	39.3	84.73	196.5	Y	43%

In December of 2017, EPA notified the Mississippi Department of Environmental Quality (MDEQ) that, based on the modeling submitted, Choctaw County, MS is designated as unclassifiable/attainment for the 2010 SO₂ standard. Under 40 CFR 51.1205(b), areas designated as attaining the standard based on modeling of actual emissions are required to submit an annual report including more recent emissions data and evaluating whether further modeling is warranted. Table 7 includes the facility emissions from EPA’s Clean Air Markets Program Data (CAMPD) database.

Table 7: Red Hills Generation Facility SO₂ Emissions

Facility Name	Year	Unit ID	Operating Time	Heat Input (MMBtu)	SO ₂ (tons)	Total SO ₂ (tons)
Red Hills Generation Facility	2015	AA001	7,300	17,238,183	1,507	3,027
		AA002	7,711	19,634,313	1,520	
	2016	AA001	7,472	16,938,342	1,464	2,799
		AA002	6,361	16,003,855	1,336	
	2017	AA001	6,541	13,664,385	1,090	2,245
		AA002	6,061	13,939,836	1,155	
	2018	AA001	7,601	20,285,442	1,354	2,812
		AA002	7,302	17,863,565	1,458	
	2019	AA001	6,351	14,375,544	1,451	2,637
		AA002	6,461	15,47,2028	1,186	
	2020	AA001	6,225	10,690,045	1,048	2,344
		AA002	6,410	15,368,749	1,297	
	2021	AA001	7,197	15,539,942	1,478	2,843
		AA002	7,286	16,887,101	1,366	
	2022	AA001	7,645	16,769,689	1,639	2,883
		AA002	7,555	17,501,505	1,244	

Source: EPA's Clean Air Markets Program Data (CAMPD) database

As shown in Table 7, total SO₂ emissions for the Red Hills Generation Facility have been lower than the years used in the modeling submitted in 2016. Therefore, the previous modeling used for the 2010 SO₂ Round 3 designations remain valid and no additional modeling is needed. MDEQ recommends that Choctaw County, MS remain classified as unclassifiable/attainment.

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