

Attachment B Addendum to BART Screening Modeling Analysis for P.H. Robinson Electric Generating Station NRG Texas LP

INTRODUCTION

Responding to comments to the dispersion modeling protocol from the Texas Commission on Environmental Quality (TCEQ), CDM has revised the Best Available Retrofit Technology (BART) air dispersion modeling analysis for the NRG Texas LP (NRG Texas) P.H. Robinson Electric Generating Station (EGS).

This addendum details the changes made to the modeling analyses from the previously submitted report. Readers should refer to the original modeling report for more information, if needed.

MODELING METHODOLOGY

Approach

There were no changes to the general approach of the analyses.

Model Inputs

NRG Texas has obtained 24-hour maximum particulate matter emission rates for the EGS. Since these emissions are assigned a higher priority by TCEQ, they would supersede the emissions used in the original modeling analysis. These emission rates are based on continuous emissions monitoring systems (CEMS) where available, and potential to emit, where CEMS data were not available. The emission rates are shown below:

Unit/Description	Basis	Maximum Daily (lb/hr)	CALPUFF Model Input Maximum Daily (g/s)
PHR1A Boiler 1 Stack A	CEMS HI	13.10	1.65
PHR1B Boiler 1 Stack B	CEMS HI	13.10	1.65
PHR2A Boiler 2 Stack A	CEMS HI	12.80	1.61

Unit/Description	Basis	Maximum Daily (lb/hr)	CALPUFF Model Input Maximum Daily (g/s)
PHR2B Boiler 2 Stack B	CEMS HI	12.80	1.61
PHR3 Boiler 3	CEMS HI	29.67	3.74
PHR4 Boiler 4	CEMS HI	39.39	4.96
PHRAB3 Auxiliary Boiler 3	PTE	2.25	0.283
PHRAB4 Auxiliary Boiler 4	PTE	2.55	0.321
PHRACT1 Cooling Tower 1	PTE	0.32	0.040
PHRACT2 Cooling Tower 2	PTE	0.32	0.040
PHRACT3 Cooling Tower 3	PTE	0.62	0.078
PHRACT4 Cooling Tower 4	PTE	0.32	0.040

No other changes to the source parameters were made.

NRG Texas has investigated the existence of speciated particulate profiles for sulfate, elemental carbon, and secondary organic compounds. There are no such existing data for the P.H. Robinson EGS facility. Therefore, the use of PM2.5 as total emitted particulate matter remains a conservative assumption.

Meteorological Data

There were no changes to the meteorological data for the analyses.

Class I Areas

There were no changes to the Class I areas included in the analyses.

Postprocessing

There were no changes to the postprocessing approach of the analyses.

RESULTS & CONCLUSIONS

Results

All revised modeling results show that there are no exceedances of the 0.50 delta-deciview limit. All values were well below this threshold. The highest predicted delta-deciview was 0.032 which occurred on Julian day 346 (December 12th) of 2001 at receptor number 1045 (coordinates: -161.400, -583.523) in Wichita Mountains Wildlife Refuge. No other predicted delta-deciview values exceeded 0.015.

The following table shows the overall results of the revised modeling:

Year: 2001			
Class I Area	Largest Delta-Deciview	Number of Days ≥ 0.5	Number of Days ≥ 1.0
Big Bend National Park (National Park Service)	0.006	0	0
Breton Wilderness Area (Fish & Wildlife Service)	0.009	0	0
Caney Creek Wilderness Area (U.S. Forest Service)	0.008	0	0
Carlsbad Caverns National Park (National Park Service)	0.006	0	0
Guadalupe Mountains National Park (National Park Service)	0.004	0	0
Salt Creek Wildlife Refuge (Fish & Wildlife Service)	0.011	0	0
Wichita Mountains Wildlife Refuge (Fish & Wildlife Service)	0.032	0	0
Year: 2002			
Class I Area	Largest Delta-Deciview	Number of Days ≥ 0.5	Number of Days ≥ 1.0
Big Bend National Park (National Park Service)	0.006	0	0
Breton Wilderness Area (Fish & Wildlife Service)	0.004	0	0
Caney Creek Wilderness Area (U.S. Forest Service)	0.009	0	0
Carlsbad Caverns National Park (National Park Service)	0.005	0	0
Guadalupe Mountains National Park (National Park Service)	0.005	0	0

Salt Creek Wildlife Refuge (Fish & Wildlife Service)	0.005	0	0
Wichita Mountains Wildlife Refuge (Fish & Wildlife Service)	0.015	0	0
Year: 2003			
Class I Area	Largest Delta-Deciview	Number of Days ≥ 0.5	Number of Days ≥ 1.0
Big Bend National Park (National Park Service)	0.009	0	0
Breton Wilderness Area (Fish & Wildlife Service)	0.006	0	0
Caney Creek Wilderness Area (U.S. Forest Service)	0.012	0	0
Carlsbad Caverns National Park (National Park Service)	0.004	0	0
Guadalupe Mountains National Park (National Park Service)	0.003	0	0
Salt Creek Wildlife Refuge (Fish & Wildlife Service)	0.003	0	0
Wichita Mountains Wildlife Refuge (Fish & Wildlife Service)	0.008	0	0

Further detailed results can be found within the individual CALPOST output files being provided to TCEQ with this addendum.

Conclusions

Since the levels of maximum predicted deciview values are de minimis and well below the 0.5 deciview threshold, it can be concluded that results at any of the other Class I areas not modeled would be less than the predicted maxima.

Since this screening level modeling shows no significant visibility impacts, CDM will not perform any additional modeling with further refinements. In addition, since all maximum impacts are below the 0.5 deciview threshold, the NRG Texas' P.H. Robinson Station is exempt from the remainder of the BART process. Therefore, a BART engineering analysis will not be required for this facility.

Output

A DVD containing all digital input and output files is included as an enclosure with this report. Due to the size of the CALMET data files, they will not be provided. It is presumed that reviewing agencies already have these files for their use.