



Section II - Other LAER/BACT Determination

Source Type: **Major/LAER**
 Application No.: **29170**
 Equipment Category: **Gas Turbine**
 Equipment Subcategory: **Simple Cycle, Natural Gas**
 Date: **February 2, 2024**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Siemens		B. MODEL: SGT6-5000F	
C. DESCRIPTION: Simple cycle natural gas fired turbine generator with Selective Catalytic Reduction (SCR) system and Oxidation Catalyst. The turbines are equipped with dry low-NOx (DLN) combustors.			
D. FUNCTION: The Marsh Landing Generating Station is a merchant power plant with a nominal generating capacity of 760 MW. The plant uses four natural-gas-fired Siemens SGT6-5000F combustion turbine generators that burn natural gas to generate electrical power.			
E. SIZE/DIMENSIONS/CAPACITY: 190 MW each (nominal)			
COMBUSTION SOURCES			
F. MAXIMUM HEAT INPUT: 2202 MMBtu/hour each			
G. BURNER INFORMATION			
	TYPE	INDIVIDUAL HEAT INPUT	NUMBER
	-	-	-
H. PRIMARY FUEL: PUC-regulated Natural Gas		I. OTHER FUEL: N/A	
J. OPERATING SCHEDULE: See section (1)(L)	HRS/DAY	DAYS/WEEK	WKS/YR
K. EQUIPMENT COST: N/A			
L. EQUIPMENT INFORMATION COMMENTS: Under the BAAQMD permit, the combined hours for all four units shall not exceed 7,008 hours per year (with exceptions for maintenance, tuning, testing, and commissioning).			

2. COMPANY INFORMATION

A. COMPANY: Marsh Landing Generating Station		B. FAC ID: B9169	
C. ADDRESS: 3201-C Wilbur Avenue CITY: Antioch STATE: CA ZIP: 94509		D. NAICS CODE: 221112	
E. CONTACT PERSON: Scott Seipel		F. TITLE: Environmental Manager	
G. PHONE NO.: (909) 648-5008		H. EMAIL: scott.seipel@nrg.com	

3. PERMIT INFORMATION

A. AGENCY: Bay Area Air Quality Management District	B. APPLICATION TYPE: NEW CONSTRUCTION
C. SCAQMD ENGINEER: BAAQMD Engineer – Xuna Cai	
D. PERMIT INFORMATION: PC ISSUANCE DATE: 2013 P/O NO.: PO ISSUANCE DATE: 11/3/2015	
E. START-UP DATE: -	
F. OPERATIONAL TIME: over 7 years	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES: .						
	VOC	NOx	SOx	CO	PM OR PM₁₀	INORGANIC
BACT Limit		2.5 PPMV		2.0 PPMV		
Averaging Time		1 Hour		1 Hour		
Correction		@ 15% O ₂		@ 15% O ₂		
B. OTHER BACT REQUIREMENTS: The emission limits shall not apply during gas turbine start-ups, combustor tuning operations, shutdowns, commissioning activities and readiness testing for black start capability, or black start emergency operations.						
C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology						
D. EMISSION INFORMATION COMMENTS: N/A						

5. CONTROL TECHNOLOGY

A. MANUFACTURER: N/A		B. MODEL: N/A	
C. DESCRIPTION: Each unit is equipped with dry low-NOx (DLN) combustors, an Oxidation Catalyst and a Selective Catalytic Reduction (SCR) system control to meet the emission requirements.			
D. SIZE/DIMENSIONS/CAPACITY: N/A			
E. CONTROL EQUIPMENT PERMIT INFORMATION: APPLICATION NO.: - PC ISSUANCE DATE: See (3)(D) PO NO.: - PO ISSUANCE DATE: See (3)(D)			
F. REQUIRED CONTROL EFFICIENCIES: N/A			
CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC (POC)	___%	___%	___%
NOx	___%	___%	___%
SOx	___%	___%	___%
CO	___%	___%	___%
PM	___%	___%	___%
PM ₁₀	___%	___%	___%
INORGANIC	___%	___%	___%
G. CONTROL TECHNOLOGY COMMENTS: The permit has a limit of 10 ppmvd for ammonia (NH ₃) emission concentrations at each exhaust point corrected to 15% O ₂ , on a dry basis, averaged over any rolling 3-hour period. Precursor Organic Compounds (POC) mass emissions (as CH ₄) at each exhaust point shall not exceed 2.9 pounds per hour or 0.00132 lb/MMBtu of natural gas fired.			

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Continuous emission monitoring system (CEMS) and Annual Source Test				
B. DATE(S) OF SOURCE TEST: November 20-21, 2019 CEMS DATE: August 2022 (NOx and CO)				
C. COLLECTION EFFICIENCY METHOD: N/A				
D. COLLECTION EFFICIENCY PARAMETERS: N/A				
E. SOURCE TEST/PERFORMANCE DATA:				
Test Date		11/20/2019	11/15/2021	
Pollutant		Unit A Average Test Result	Unit B Average Test Result	Emission Limit
NOx	ppmvd @ 15% O ₂	2.2	2.25	2.5
CO	ppmvd @ 15% O ₂	0.2	0.34	2
NH ₃	ppmvd @ 15% O ₂	1.66	1	10

F. TEST OPERATING PARAMETERS AND CONDITIONS: Emission tests were performed while the units and air pollution control devices were operating. The source tests consisted of 3 separate runs. The emission concentrations of NO_x, CO, and NH₃ must be corrected to 15% O₂. Continuous emission monitoring for NO_x and CO emission concentrations are averaged over any 1-hour period. NH₃ emission concentrations are averaged over any rolling 3-hour period.

G. TEST METHODS (SPECIFY AGENCY):

Pollutant	No. of Runs	Test Methods
NO _x	3 Tests Average	EPA 7E
CO	3 Tests Average	EPA 10
NH ₃	3 Tests Average	BAAQMD ST-1B
POC as CH ₄ methane, ethane	3 Tests Average	EPA 18/TO-12

H. MONITORING AND TESTING REQUIREMENTS: Source Testing required annually for pollutants listed in source test data above. Continuous emission monitoring is required for NO_x and CO. The ammonia emission concentration is verified by the continuous recording of the ammonia injection rate to each SCR system.

I. DEMONSTRATION OF COMPLIANCE COMMENTS:

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: -		B. CCAT: -		C. APPLICATION TYPE CODE: -	
D. RECLAIM FAC? YES <input type="checkbox"/> NO <input type="checkbox"/>		E. TITLE V FAC: YES <input type="checkbox"/> NO <input type="checkbox"/>		F. SOURCE TEST ID(S):	
G. SCAQMD SOURCE SPECIFIC RULES: -					
H. HEALTH RISK FOR PERMIT UNIT					
H1. MICR: -		H2. MICR DATE: -		H3. CANCER BURDEN: -	
H4. CB DATE: -		H5: HIA: -		H6. HIA DATE: -	
H7. HIC: -		H8. HIC DATE: -			