

<b>DOCKETED</b>	
<b>Docket Number:</b>	01-AFC-06C
<b>Project Title:</b>	Magnolia Power Project-Compliance
<b>TN #:</b>	265176
<b>Document Title:</b>	SCAQMD Magnolia Power Project Permitting Documents
<b>Description:</b>	Review of AQ Impact Analysis & HHealth Risk Assessment to a Combined Cycle Gas Turbine
<b>Filer:</b>	susan fleming
<b>Organization:</b>	California Energy Commission
<b>Submitter Role:</b>	Commission Staff
<b>Submission Date:</b>	7/31/2025 11:27:59 AM
<b>Docketed Date:</b>	7/31/2025

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
ENGINEERING & PERMITTING  
MEMORANDUM**

**TO:** Kelland Chow

**FROM:** Osiris Torres *OT*

**DATE:** 5/30/2025

**FACILITY NAME:** Burbank City, Burbank Water & Power, SCPPA  
Magnolia Power Project

**FACILITY ID:** 128243

**APPLICATION NUMBER(S):** 657073, 657074

**SUBJECT:** Review of Air Quality Impact Analysis and Health Risk Assessment for a  
Modification to a Combined Cycle Gas Turbine

South Coast AQMD Engineering & Permitting (E&P) modeling staff completed the review of the air quality impact dispersion modeling analysis conducted for the proposed modification to a Combined Cycle Gas Turbine (CCGT) located at 164 W. Magnolia Blvd, Burbank, CA 91502.

Burbank City, Burbank Water & Power operating under FID 128243 submitted ANs 657073 and 657074 to deploy the General Electric (GE) Advanced Gas Path Tech Package (AGP) and Advanced Compressor upgrade to the existing turbine system. Additionally, the facility requests to increase the permitted annual operating hours of the combined cycle gas turbine at the facility from 8,322 hrs/yr to 8,508 hrs/yr. The primary function of the facility is to produce electrical power for the California grid.

The facility submitted an Air Quality Impact Analysis and Tier 4 Health Risk Assessment to show that the permit units will still comply with Rule 1303, Rule 1401, and Rule 2005.

Staff's detailed review is included in Attachment A. In summary, no issues were found with the air dispersion modeling.

**Table 1. 1-Hour Ambient Air Quality Standard Results for Rule 1303 (CO)**

<b>Modeling Scenario</b>	<b>Background</b>	<b>Project Impact<sup>a</sup></b>	<b>Total</b>	<b>Standard</b>	<b>Exceed Standard?</b>
Recommissioning, Phase 1B+1C	2,300	253.06	2,553.06	23,000 (CA); 40,000 (N)	No
Recommissioning, Phase 5C	2,300	362.99	2,662.99	23,000 (CA); 40,000 (N)	No
Startup	2,300	43.44	2,343.44	23,000 (CA); 40,000 (N)	No
Normal Operation (CT+DB in Operation)	2,300	2.29	2,302.29	23,000 (CA); 40,000 (N)	No
Shutdown	2,300	64.60	2,364.60	23,000 (CA); 40,000 (N)	No

<sup>a</sup>Project impact includes emissions from 1 CCGT.

**Table 2. 8-Hour Ambient Air Quality Standard Results for Rule 1303 (CO)**

<b>Modeling Scenario</b>	<b>Background</b>	<b>Project Impact<sup>a</sup></b>	<b>Total</b>	<b>Standard (CA &amp; N)</b>	<b>Exceed Standard?</b>
Recommissioning, Phase 1B+1C	1,840	164.88	2,004.88	10,000	No
Recommissioning, Phase 5C	1,840	198.63	2,038.63	10,000	No
Startup	1,840	28.05	1,868.05	10,000	No
Normal Operation (CT+DB in Operation)	1,840	1.72	1,841.72	10,000	No
Shutdown	1,840	41.70	1,881.70	10,000	No

<sup>a</sup>Project impact includes emissions from 1 CCGT.

**Table 3. 24-Hour Ambient Air Quality Standard Results for Rule 1303 (PM)**

<b>Pollutant (non-attainment)</b>	<b>Project<sup>a</sup></b>	<b>Significant Change Threshold</b>	<b>Exceed Threshold?</b>
PM <sub>10</sub> (µg/m <sup>3</sup> )	1.40	2.5	No
PM <sub>2.5</sub> <sup>b</sup> (µg/m <sup>3</sup> )	1.40	2.5	No

<sup>a</sup>Project impact includes emissions from 1 CCGT under normal operation: Combustion Turbine and Duct Burner in operation.

<sup>b</sup>Assume PM<sub>2.5</sub> project impact is equal to the project impact for PM<sub>10</sub> per South Coast AQMD policy, Final – Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds:  
[https://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/particulate-matter-\(pm\)-2.5-significance-thresholds-and-calculation-methodology/final\\_pm2\\_5methodology.pdf?sfvrsn=e91ff961\\_2](https://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/particulate-matter-(pm)-2.5-significance-thresholds-and-calculation-methodology/final_pm2_5methodology.pdf?sfvrsn=e91ff961_2).

**Table 4. Annual Ambient Air Quality Standard Results for Rule 1303 (PM)**

<b>Pollutant (non-attainment)</b>	<b>Project<sup>a</sup></b>	<b>Significant Change Threshold</b>	<b>Exceed Threshold?</b>
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PM <sub>10</sub> (µg/m <sup>3</sup> )	0.26	1.0	No
PM <sub>2.5</sub> <sup>b</sup> (µg/m <sup>3</sup> )	0.26	1.0	No

<sup>a</sup>Project impact includes emissions from 1 CCGT modeled with 1,000 hours of Combustion Turbine and Duct Burner operation.

<sup>b</sup>Assume PM<sub>2.5</sub> project impact is equal to the project impact for PM<sub>10</sub> per South Coast AQMD policy, Final – Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds.

**Table 5. 1-Hour Ambient Air Quality Standard Results for Rule 2005 (NO<sub>x</sub>)**

Modeling Scenario	Background	Project Impact <sup>a</sup>	Total	Standard	Exceed Standard?
Pollutant (Attainment): NO <sub>2</sub> (µg/m <sup>3</sup> ) (CAAQS)					
Recommissioning, Phase 1A	122.9	40.16	163.06	339	No
Recommissioning, Phase 5B	122.9	43.41	166.31	339	No
MPP in Startup	122.9	38.27	161.17	339	No
MPP in Normal Operation w/Duct Burner	122.9	3.77	126.67	339	No
MPP in Shutdown	122.9	16.30	139.20	339	No
Pollutant (Attainment): NO <sub>2</sub> (µg/m <sup>3</sup> ) (NAAQS)					
MPP in Startup	89.4	29.00	118.40	188	No
MPP in Normal Operation w/Duct Burner	89.4	3.10	92.50	188	No
MPP in Shutdown	89.4	12.35	101.75	188	No

<sup>a</sup>Project impact includes emissions from 1 CCGT.

**Table 6. Annual Ambient Air Quality Standard Results for Rule 2005 (NO<sub>x</sub>)**

Pollutant (Attainment)	Background	Project Impact <sup>a</sup>	Total	Standard	Exceed Standard?
NO <sub>2</sub> (µg/m <sup>3</sup> )	26.10	0.26	26.36	57 (CA); 100 (N)	No

<sup>a</sup>Project impact includes emissions from 1 CCGT.

**Table 7. 1-Hour Ambient Air Quality Standard Results for Rule 2005 (SO<sub>x</sub>)**

Modeling Scenario	Background	Project Impact <sup>a</sup>	Total	Standard	Exceed Standard?
Pollutant (Attainment): SO <sub>2</sub> (µg/m <sup>3</sup> ) (CAAQS)					
Normal Operation <sup>b</sup>	20.20	0.36	20.56	655	No
Pollutant (Attainment): SO <sub>2</sub> (µg/m <sup>3</sup> ) (NAAQS)					
Normal Operation <sup>b</sup>	5.50	0.30	5.80	196	No

<sup>a</sup>Project impact includes emissions from 1 CCGT.

<sup>b</sup>Combustion Turbine and Duct Burner in operation.

**Table 8. 24-Hour Ambient Air Quality Standard Results for Rule 2005 (SOx)**

<b>Pollutant (Attainment)</b>	<b>Background</b>	<b>Project Impact<sup>a</sup></b>	<b>Total</b>	<b>CAAQS Standard</b>	<b>Exceed Standard?</b>
SO <sub>2</sub> (µg/m <sup>3</sup> )	5.50	0.15	5.65	105	No

<sup>a</sup>Project impact includes emissions from 1 CCGT under normal operation: Combustion Turbine and Duct Burner in operation.

**Table 9. HRA Results for Rule 1401**

<b>Receptor Type</b>	<b>Cancer Risk (in one million)</b>	<b>Chronic Hazard Index</b>	<b>Acute Hazard Index</b>	<b>Cancer Risk Threshold (in one million)</b>	<b>Acute/Chronic Hazard Index Threshold</b>
Residential	0.32	2.97 x 10 <sup>-3</sup>	5.24 x 10 <sup>-3</sup>	10	1.0
Worker	0.02	2.97 x 10 <sup>-3</sup>	5.24 x 10 <sup>-3</sup>	10	1.0

Staff spent a total of 16 hours conducting this review. If you have any questions, please contact Osiris Torres at ext. 2415.

JW:OT

cc: KC

## Attachment A Modeling Review Checklist

Project Information					
<b>Application #</b>	657073, 657074	<b>Facility Name</b>	Burbank City, Burbank Water & Power, SCPPA		
<b>Facility ID</b>	128243	<b>Application Type</b>	Permit to Construct		
<b>Date</b>	5/21/2025	<b>Reviewer</b>	Osiris Torres		
Modeling Review – Summary of Rule Compliance					
	<b>Not applicable</b>	<b>Yes</b>	<b>Yes with additional conditions</b>	<b>No</b>	<b>Requirement in Rules and Regulations</b>
1.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rule 1303 NSR
2.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rule 1401 NSR for TAC
3.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rule 1703 PSD Analysis
4.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rule 2005 NSR for RECLAIM
5.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other:
Applicant's Modeling Analysis Review – Checklist					
6.	<b>Was the appropriate air quality model used to perform the analysis?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
	AERSCREEN, version Click or tap here to enter text. AERMET, version 22112 AERMOD <sup>1</sup> , version 23132 BPIP-Prime, version 04274 AERMAP, version 18081 HARP-ADMRT, version Click or tap here to enter text. HARP-RAST, version Click or tap here to enter text. Other Models: Click or tap here to enter text., version Click or tap here to enter text. Comments: Staff used AERMET version 22112, AERMOD version 23132, and AERMAP version 18081 during the review process.				
7.	<b>Was the most representative background AQ monitoring data used in the analysis?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable				
	Monitoring station: AQMD, North Hollywood (NOHO), AQS ID 060374010 Distance and direction to project: 2.75 miles West from probe to project. Years Used: 2021-2023 Comments: North Hollywood is the nearest monitoring station with similar land use.				

<sup>1</sup> South Coast AQMD Modeling Guidance for AERMOD is on the website at: <http://www.aqmd.gov/home/air-quality/air-quality-data-studies/meteorological-data/modeling-guidance>

8.	<b>Is the project located in an identified Class I Area?</b> <input checked="" type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>No</b> <input type="checkbox"/> <b>Not applicable</b>
<p>Class I area: San Gabriel Wilderness  Distance and direction to project: 28 km NE to project  Comments: Rule 1303(b)(5)(C) requires a visibility analysis for Class I areas if net emission increases exceed 15 tons/yr of PM10 or 40 tons/yr of NOx and the project is within the specified distance in Table C-1 of the rule. Although the project is within 29 km from the San Gabriel Wilderness, the nearest Class I area, the net increases in PM10 and NOx are below the thresholds; therefore, a plume visibility analysis is not required.</p>	
9.	<b>Was the project modeled appropriately?</b> (Including but not limited to: surrounding topographic features, terrain options and terrain processing, project site boundary, locations of sources, structures, and buildings, building downwash, domain area, coordinates, etc.) <input checked="" type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>No</b>
<p>Comments: Staff reviewed aerial maps and confirmed that the facility site boundary was modeled accurately.  The model included twenty buildings closest to the emission sources and the building downwash effect was calculated. Upon comparing the buildings listed in the model versus the building shown in Google Earth, the model appears to be mostly accurate with some deviations on the size and rotation of the buildings. Additionally, some smaller buildings were either omitted or group into large building structures. Considering the Good Engineering Practice (GEP) stack height is 18.3 meters (60 feet) and the limit for the area of influence is 228.6 meters (750 feet), all of these smaller buildings appear to be less than the GEP limits.  Elevation for sources, receptors, and buildings was gathered from the 1 arc-second National Elevation Dataset from the United States Geological Survey.</p>	
10.	<b>Were the appropriate model options used?</b> (Including but not limited to: regulatory and model options, pollutants, averaging time, NAAQS and CAAQS selections, rural/urban, deposition/depletion, NOx to NO2 conversion options, and etc.) <input checked="" type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>No</b>
<p>Comments: The model was run using the regulatory default options, including the use of urban option, short term averaging periods, and annual averaging periods. The annual averaging emissions for PM10, PM2.5, and NOx were conservatively assumed to operate on 1,000 hours with CT and DB usage and 7,256 hours with CT only usage. For short term averaging periods, 1-hour averaging was used for CO, PM10, NOx, and SOx, 8-hour averaging was used for CO, and 24-hour averaging was used for PM10, PM2.5, and SOx.  As shown in Tables 1 and 2 above, CO 1-hour and 8-hour averaging emissions were calculated for five different modeling scenarios: Recommissioning Phases 1B+1C, Recommissioning Phase 5C, Startup, Normal Operation, and Shutdown.  As shown in Table 5, NOx 1-hour averaging emissions were calculated for five different modeling scenarios: Recommissioning Phase 1A, Recommissioning Phase 5B, Startup, Normal Operation (with Duct Burner), and Shutdown.  The model was run assuming 100 percent conversion of the project NOx emissions to NO2 emissions (Tier 1 Method). The facility noted they would use the Tier 2 Ambient Ratio Method 2 (ARM2) with U.S. EPA default minimum and maximum NO2/NOx in-stack ratios</p>	

(0.5 and 0.9, respectively) if the NO <sub>2</sub> impacts were greater than state and national standards; however, this was not the case.	
11.	<b>Was the most representative meteorological data<sup>2</sup> used?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Meteorological station: Burbank-Glendale-Pasa ARPT (KBUR) Distance and direction to project: 2.85 miles Northwest from station to project. Years: 2019-2023 Comments: Burbank Airport met station is the most representative and the closest met station.	
12.	<b>Was the source data modeled accurate?</b> (Including but not limited to: source type selections, source parameters (emission rate, temperature, exit velocity, release height and stack diameter, release type, operation scenarios, source group, variable emissions, in-stack ratios), and etc.) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Comments: The CCGT was modeled as a point source. The source parameters and emission rates were verified and deemed appropriate for the equipment. The stack locations and dimensions are detailed below. The remaining stack parameters and the NO <sub>2</sub> and PM emission rates are detailed in Table 10.	
13.	<b>Was the receptor placement appropriate?</b> (Including but not limited to: dense enough receptor grid(s) with corresponding coordinates), receptor spacing, fenceline receptors, sensitive receptor and etc.) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Nearest school, distance, and direction to project: Walt Disney Elementary School, 0.45 miles SW to project Other sensitive receptors: Residential receptors are present near the site, and discrete receptors were placed at nearby sensitive receptor locations, including schools and hospitals within one mile of the facility. Comments: The receptor network used for the dispersion modeling in support of the HRA was appropriately designed to capture maximum ambient air impacts from the project. The receptor grid consisted of several tiers to ensure adequate spatial coverage: <ul style="list-style-type: none"> <li>• Fenceline receptors spaced approximately 50 meters apart along the perimeter of the facility.</li> <li>• Broader grid with receptors spaced 100 meters apart extending to approximately 3 kilometers from the facility.</li> <li>• Coarser outer grid with 250-meter spacing from the previous receptors out from 3 to 5 kilometers from source.</li> <li>• Fine 100-meter grid centered around the location of maximum predicted impacts identified from the coarse 250-meter grid results.</li> <li>• Discrete receptors placed at sensitive locations such as schools and hospitals within a 1-mile radius of the stack.</li> </ul>	

<sup>2</sup> It is required that the applicant use the most recent version of meteorological data that is either processed by or approved by South Coast AQMD and from the most appropriate meteorological station for the proposed project.



<p>Receptor and source coordinates were specified in NAD83, UTM Zone 11, and receptor elevations were derived using USEPA AERMAP with elevation data from the USGS NED, which provides a 1-meter vertical and 30-meter horizontal resolution.</p> <p>Receptors for Class I Area impacts were not specifically addressed, as the nearest Class I Area is more than 50 km from the site. AERMOD is only recommended for distances of 50 km or less. It was assumed that if the project impact at 50 km is less than the Class I SILs, the impacts at the Class I areas are expected to be below the Class I SILs.</p>	
14.	<p><b>Did the project follow South Coast AQMD's health risk assessment procedure and have correct parameters?</b> (Including but not limited to: all the procedure, assumptions, and default parameters listed in South Coast AQMD HRA guidance. The South Coast AQMD's HRA procedures<sup>3</sup> require Hot Spots Analysis and Reporting Program (HARP) to be used in Tier 4 risk assessments for this Project for Rule 1401 compliance.)</p> <p><input checked="" type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>No</b> <input type="checkbox"/> <b>Not applicable</b></p>
<p>Comments: The HRA for this project was conducted in accordance with District HRA guidance. The applicant used HARP2 to conduct a Tier 4 HRA to evaluate compliance with Rule 1401. Appropriate procedures, default assumptions, and parameters were applied as required. The modeled health risks, including cancer risk, chronic hazard index, and acute hazard index, were all found to be well below the significance thresholds for residential and worker receptors. The analysis evaluated the risks using OEHHA health values and included inhalation, soil ingestion, dermal absorption, and mother's milk exposure pathways. Secondary exposure routes such as ingestion of crops, meat, or dairy were excluded due to the absence of such activities near the facility. The assessment included conservative assumptions such as 30-year exposure duration for residential receptors and 25-year exposure duration for commercial/industrial receptors.</p>	
15.	<p><b>Are all data in the permit application package consistent with what was modeled?</b> (Including but not limited to: proposed conditions in permit application, reports, vendor guarantee data, manufacture data, emission estimation sources, calculations and spreadsheets, actual modeling I/O files, and etc.)</p> <p><input checked="" type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>No</b></p>
<p>Comments: The emission rates, stack parameters, and modeling scenarios outlined in the permit application matched those used in the dispersion modeling and HRA.</p>	
16.	<p><b>Were all the model output files provided by the applicant?</b> (Including but not limited to: output settings, model processing completeness, post processing, I/O files verified, and etc.)</p> <p><input checked="" type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>No</b></p>
<p>Comments:</p>	

### Detailed modeling review comments and notes:

The stack parameters and emission rates are provided below for reference.

<sup>3</sup> South Coast AQMD Risk Assessment Procedure for Rule 1401, 1401.1 and 212, Version 8.1, September 1, 2017, <http://www.aqmd.gov/docs/default-source/permitting/rule-1401-risk-assessment/riskassessproc-v8-1.pdf>

Stack Release Height: 45.7 m (150 ft)

Stack Diameter: 5.8 m (19 ft)

Base Elevation: 170.7 m (560 ft)

UTM Coordinates:

Easting (m): 378903.73

Northing (m): 3782597.16

**Table 10 – Stack Parameters**

Pollutant	Details of Operation	Emission Rate (g/s)	Exhaust Temp (K)	Exit Velocity (m/s)
CO	Recommissioning (Phase 1B+1C)(1-Hr Avg)	92.734	356.48	9.83
	Recommissioning (Phase 5C)(1-Hr Avg)	126.880	367.59	10.56
	Startup	12.348	361.6	7.20
	Normal Operation (CT+DB)	1.518	356.4	20.10
	Shutdown	18.360	361.6	7.20
PM10/PM2.5	Normal Operation (CT+DB)(24-Hr Avg)	2.307	356.4	20.10
	Normal Operation (CT+DB) (Annual Avg)	1.726	356.4	20.10
NOx	1-Hour Average:			
	Recommissioning (Phase 1A)	13.104	349.82	9.22
	Recommissioning (Phase 5B)	16.002	361.48	9.56
	Startup	10.878	361.60	7.20
	Normal Operation (CT+DB)	2.495	356.40	20.10
	Shutdown	4.632	361.60	7.20
	Annual Average:			
	Normal Operation (CT+DB)	2.389	356.40	20.10
SOx	Normal Operation (CT+DB)	0.242	356.4	20.10
TACs (HRA)	Normal Operation	-	356.4	20.10

In summary, the air dispersion modeling was conducted in accordance with District guidance and recommendations. Staff verified the applicant's modeling inputs and results, and determined that the project impacts for CO, PM10, PM2.5, NOx, and SOx under various operating scenarios are all below the respective NAAQS and CAAQS thresholds. Therefore, the project is not expected to cause a violation nor make significantly worse an existing violation of the NAAQS or CAAQS. Compliance with the modeling requirements in Rules 1303 and 2005 have been demonstrated.

The HRA was conducted in accordance with South Coast AQMD's HRA guidance and recommendations. Staff verified the applicant's modeling and inputs results and all health risks including cancer risk and chronic and acute hazard indices are below the applicable thresholds; therefore, compliance with Rule 1401 has been demonstrated.