

ORIGINAL

PETITION FOR VARIANCE  
BEFORE THE HEARING BOARD OF THE  
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

IV 1/25/24  
RV 2/29/24

PETITIONER: City of Pasadena Water and Power Department

CASE NO: 2244-36

FACILITY ID: 800168

FACILITY ADDRESS: 72 E. Glenarm Street  
[location of equipment/site of violation; specify business/corporate address, if different, under Item 2, below]

City, State, Zip: Pasadena, CA 91105

1. TYPE OF VARIANCE REQUESTED (more than one box may be checked; see Attachment A, Item 1, before selecting)

INTERIM    SHORT    REGULAR    EMERGENCY    EX PARTE EMERGENCY

2. CONTACT: Name, title, company (if different than Petitioner), address, and phone number of persons authorized to receive notices regarding this Petition (no more than two authorized persons).

Arturo Silva

Christian Chang

Power Plant Manager

Power Plant Engineer

85 E. State Street

85 E. State Street

Pasadena, CA                      Zip 91105

Pasadena, CA                      Zip 91105

☎ (626)744-4568                      Ext.

☎ (626)744-3926                      Ext.

Fax (626)403-2847

Fax (626)403-2847

E-mail asilva@cityofpasadena.net

E-mail cchang@cityofpasadena.net

3. RECLAIM Permit    Yes    No                      Title V Permit    Yes    No

Persons with disabilities may request this document in an alternative format by contacting the Clerk of the Board at 909-396-2500 or by e-mail at [clerkofboard@aqmd.gov](mailto:clerkofboard@aqmd.gov).

If you require disability-related accommodations to facilitate participating in the hearing, contact the Clerk of the Board at least five (5) calendar days prior to the hearing.

[ALL DOCUMENTS FILED WITH CLERK'S OFFICE BECOME PUBLIC RECORD]

ORIGINAL

4. **GOOD CAUSE:** Explain why your petition was not filed in sufficient time to issue the required public notice. (Required only for Emergency and Interim Variances; see Attachment A, Item 4)

The City of Pasadena will not be able to conduct the emissions testing required to be performed in the fourth quarter of 2023 on a natural gas fired combined cycle power generating unit, Gas Turbine 5 (GT-5), due to the equipment failure at the Glenarm Power Plant, Pasadena Water and Power (PWP). The required emissions testing, RATA and Ammonia Slip, were originally scheduled to be performed on November 28, 2023. On November 16, 2023 the generating unit tripped. PWP staff contacted the OEM, GE, to arrange for field service support to troubleshoot the unexpected trip. Subsequent investigation conducted on November 20, 2023 revealed metal particles in the gas turbine lubrication oil system. GE advised the PWP that continuing to operate the unit under the current state was not advisable. GE's recommendation is to pull the engine for transport to a certified repair facility for disassembly, assessment, and repair of the engine prior to placing the unit back in service. As a result, the scheduled compliance testing was canceled. The equipment malfunction of this nature is unexpected and not a foreseeable event. Repair timeline is expected to exceed 90 days. Therefore, the PWP's variance petition cannot comply with the time guidelines for the type of variance being requested.

5. Briefly describe the type of business and processes at your facility.

Pasadena Water and Power (PWP) is a municipal utility agency responsible for providing safe, reliable and reasonably priced water and electric power to its municipal customers. PWP's local generation units are located at a single facility, Glenarm Power Plant, which is owned and operated by the City of Pasadena, Water and Power Department. There are four simple cycle gas turbine units, GT-1, GT-1, GT-2, and GT-4 and one combined cycle gas turbine unit, GT-5. GT-5 consists of one combustion gas turbine generator and a steam turbine generator. California Independent System Operator (Cal ISO) controls the power plant's generating units.



6. List the equipment and/or activity(s) that are the subject of this petition (see Attachment A, Item 6, Example #1). **Attach copies of the Permit(s) to Construct and/or Permit(s) to Operate for the subject equipment. For RECLAIM or Title V facilities, attach *only* the relevant sections of the Facility Permit showing the equipment or process and conditions that are subject to this petition. You must bring the entire Facility Permit to the hearing.**

Equipment/Activity	Application/Permit No.	RECLAIM Device No.	Date Application/Plan Denied (if relevant)*
Gas Turbine, GT-5 , Natural Gas, General Electric, Model LM6000 PG Sprint, Combined Cycle, 547.5 MMBTU/HR HHV @64 Deg F, with Water Injection, A/N: 579955	800168	D56	
Selective Catalytic Reduction	800168	C67	
CO Oxidation Catalyst	800168	C66	

\*Attach copy of denial letter

7. Briefly describe the activity or equipment, and why it is necessary to the operation of your business. A schematic or diagram may be attached, in addition to the descriptive text.

GT-5 is a combined cycle electrical generating unit fueled with natural gas. The unit consists of one LM6000 gas turbine (D56), CO oxidation catalyst (C66), and selective catalytic reduction (C67). Continuous emission monitoring system (CEMS) monitors and records air emissions. Selective catalytic reduction reduces nitrogen oxides (NOx) emissions using a catalyst and ammonia injection. This unit has been operating in accordance with the PWP's Title V permit issued on November 3, 2022.

PWP meets its obligation to provide reliable and reasonably priced electric power through a managed portfolio of long-term supply contracts from out of state, local generation, and economic and spot purchases. The local generation resources are used primarily to meet the PWP's intermediate and peak loads, and provide operating reserves in the event of a local or system-wide outage. Local generation is also essential for PWP to support its electrical distribution system, which cannot reliably deliver power to all of its customers from the point of interconnection to the California Independent System Operator (Cal ISO) grid when PWP's load exceeds 200MW.

8. Is there a regular maintenance and/or inspection schedule for this equipment? Yes  No   
 If yes, how often: Semi annually and annually Date of last maintenance and/or inspection 12/5/22 and 5/18/23

Describe the maintenance and/or inspection that was performed.

Maintenance department conducts annual inspection and maintenance on the unit each year. The inspection and maintenance consists of the following items:

Borescope Inspection which is conducted by GE field core technician on May 18th, 2023.

Annual maintenance conducted on December 5th, 2022.

External engine inspection, replacing lube oil and hydraulic oil in various pieces of equipment and systems, replacing engine and generator oil filters, replacing water filters, lubricating fans and motors, greasing all fitting, check alignments, checking foundation bolts for tightness, generator visual inspection, inspecting piping and checking for leaks, water washing the engine.

9. List all District rules, and/or permit conditions [indicating the specific section(s) and subsection(s)] from which you are seeking variance relief (if requesting variance from Rule 401 or permit condition, see Attachment A). Briefly explain how you are or will be in violation of each rule or condition (see Attachment A, Item 9, Example #2).

Rule	Explanation
Facility Title V Permit, Section D, Conditions D29.7	PWP cannot comply with the emissions testing requirements by the end of this year due to equipment failure.

10. Are the equipment or activities subject to this request currently under variance coverage? Yes  No

Case No.	Date of Action	Final Compliance Date	Explanation

11. Are any other equipment or activities at this location currently (or within the last six months) under variance coverage? Yes  No

Case No.	Date of Action	Final Compliance Date	Explanation

12. Were you issued any Notice(s) of Violation or Notice(s) to Comply concerning this equipment or activity within the past year? Yes  No

If yes, you must attach a copy of each notice.

NOV#P76085

13. Have you received any complaints from the public regarding the operation of the subject equipment or activity within the last six months? Yes  No

If yes, you should be prepared to present details at the hearing.



14. Explain why it is beyond your reasonable control to comply with the rule(s) and/or permit condition(s). Provide specific event(s) and date(s) of occurrence(s), if applicable.

Gas Turbine, GT-5 started experiencing issues in late October and early November. Over that span of time, for four consecutive starts the unit experienced high oil consumption, a visible external oil leak and high oil temperatures on scavenge oil turbine sump "D" and "E" during start-up. Each startup resulted in a trip related to the variable bleed valve system after the unit being online for a couple of hours.

After the trip on November 16, 2023 a forced outage was taken on the unit to perform troubleshooting and inspections to the chip detectors and lube scavenge inlet screens. Upon the inspection we found some carbon in the inlet screens and some metallic material was found on the chip detector. We informed General Electric (GE) of the issues and asked for assistance with troubleshooting of the unit. A GE field core technician was on site on November 20, 2023. The inspection of the turbine lube oil system revealed visible particles in the gas turbine lubrication oil and filters. GE recommended to take oil filter and samples and have them send out to Failure Analysis Service Technology, Inc. (FAST) in Prescott, AZ for further analysis to help determine next steps. Based on the initial findings, GE advised the PWP that continuing to operate the unit under the current state was not advisable. GE's preliminary recommendation is to pull the engine for transport to a certified repair facility for disassembly, assessment, and repair of the engine prior to placing the unit back in service. PWP is currently working with GE representatives to perform the necessary repairs to the unit.

As a result, the required compliance testing originally scheduled to be performed on November 28, 2023 could not be performed. The equipment malfunction of this nature is an unexpected and is not a foreseeable event. The repair of the gas turbine is expected to take several months. Until repairs are completed the unit cannot be placed online to perform the required compliance testing. Thus it is beyond the PWP's reasonable control to comply with the District rules and/or permit conditions.

15. When and how did you first become aware that you would not be in compliance with the rule(s) and/or permit condition(s)? Provide specific event(s) and date(s) of occurrence(s).

Forced outage was taken on the unit on November 16, 2023 after a trip. On November 21, 2023 the OEM, GE, recommended not to place the unit back in operation until after repairs are complete.

16. List date(s) and action(s) you have taken since that time to achieve compliance.

The unit was placed in an outage and has not operated since November 16, 2023.  
PWP staff contacted the OEM, GE, on November 17, 2023.  
GE Fieldcore Service Technician arrived on site on November 20, 2023 to assist with troubleshooting  
GE recommends that the unit not be placed back online on November 21, 2023.

Currently PWP is awaiting the results of the lube oil analysis and GE proposal to perform the necessary repairs.

17. What would be the harm to your business during **and/or after** the period of the variance if the variance were not granted?

Economic losses: \$ See below

Number of employees laid off (if any): N/A

Provide detailed information regarding economic losses, if any, (anticipated business closure, breach of contracts, hardship on customers, layoffs, and/or similar impacts).

PWP cannot conduct the required RATA and ammonia slip test due to unit breakdown and outage. If the PWP does not receive a variance petition, it will violate the permit conditions and the PWP may be exposed to significant financial liability.



18. Can you curtail or terminate operations in lieu of, or in addition to, obtaining a variance? Please explain.

No, the unit is not operational and will be required to be taken out for repair and compliance cannot be achieved until the unit is placed back online.

19. Estimate excess emissions, if any, on a daily basis, including, if applicable, excess opacity (the percentage of total opacity above 20% during the variance period). If the variance will result in no excess emissions, insert "N/A" here and skip to No. 20.

Pollutant	(A)	(B)	(C)*
	Total Estimated Excess Emissions (lbs/day)	Reduction Due to Mitigation (lbs/day)	Net Emissions After Mitigation (lbs/day)
N/A			

\* Column A minus Column B = Column C

Excess Opacity: \_\_\_\_\_ %

20. Show calculations used to estimate quantities in No. 19, or explain why there will be no excess emissions.

N/A. There will be no emissions due to unit outage.

21. Explain how you plan to reduce (mitigate) excess emissions during the variance period to the maximum extent feasible, or why reductions are not feasible.

The unit cannot be placed into operation until repairs are completed.

22. How do you plan to monitor or quantify emission levels from the equipment or activity(s) during the variance period, and to make such records available to the District? **Any proposed monitoring does not relieve RECLAIM facilities from applicable missing data requirements.**

The emissions monitoring system installed on the unit is not impacted by the breakdown.



23. How do you intend to achieve compliance with the rule(s) and/or permit condition(s)? Include a detailed description of any equipment to be installed, modifications or process changes to be made, permit conditions to be amended, etc., dates by which the actions will be completed, and an estimate of total costs.

The unit is not operational and will be required to be taken out and send to a certified repair facility for repairs. Currently the PWP is awaiting the results of the lube oil analysis and GE proposal and/or recommendations on the necessary repairs.

24. State the date you are requesting the variance to begin: December 31, 2023; and the date by which you expect to achieve final compliance: December 24, 2024.

If the regular variance is to extend beyond one year, you **must** include a **Schedule of Increments of Progress**, specifying dates or time increments for steps needed to achieve compliance. See District Rule 102 for definition of Increments of Progress (see Attachment A, Item 24, Example #3).

List Increments of Progress here:

PWP anticipates the unit to be repaired and up and running within one year period.

25. List the names of any District personnel with whom facility representatives have had contact concerning this variance petition or any related Notice of Violation or Notice to Comply.

Christer Baluyot, Air Quality Inspector Ext. 3054  
Thomas Lee, Supervising Air Quality Inspector Ext. 2412

If the petition was completed by someone other than the petitioner, please provide their name and title below.

Name Company Title

The undersigned, under penalty of perjury, states that the above petition, including attachments and the items therein set forth, is true and correct.

Executed on 12-21-2023, at Pasadena, California

[Signature] Arturo Silva  
Signature Print Name

Title: Power Plant Manager

26. SMALL BUSINESS and TABLE III SCHEDULE A FEES: To be eligible for reduced fees for small businesses, individuals, or entities meeting small business gross receipts criterion [see District Rule 303(h)], you must complete the following:

**Declaration Re Reduced Fee Eligibility**

1. The petitioner is  
a)  an individual, or  
b)  an officer, partner or owner of the petitioner herein, or a duly authorized agent of the petitioner authorized to make the representations set forth herein.

**If you selected 1a, above, skip item 2.**

2. The petitioner is  
a)  a business that meets the following definition of Small Business as set forth in District Rule 102:  
SMALL BUSINESS means a business which is independently owned and operated and meets the following criteria, or if affiliated with another concern, the combined activities of both concerns shall meet these criteria:  
(a) the number of employees is 10 or less; **AND**  
(b) the total gross annual receipts are \$500,000 or less or  
(iii) the facility is a not-for-profit training center.

**-OR-**

- b)  an entity with total gross annual receipts of \$500,000 or less.

3. Therefore, I believe the petitioner qualifies for reduced fees for purpose of filing fees and excess emission fee calculations, in accordance with Rule 303(h).

I declare under penalty of perjury that the foregoing is true and correct.

Executed on \_\_\_\_\_, at \_\_\_\_\_, California

Signature Print Name

Title \_\_\_\_\_







**FACILITY PERMIT TO OPERATE  
PASADENA CITY, DWP**

**SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS**

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions* And Requirements	Conditions
<b>Process 2: INTERNAL COMBUSTION</b>					
GENERATOR, SERVING ST-5, 14.7 GROSS MW @ 64 DEG F					
CO OXIDATION CATALYST, NO.5, EMERACHEM, PLATINUM BASED, MODEL ADCAT, FIXED BED, TOTAL VOLUME 139 CU FT A/N: 614226	C66	D56 C67			
SELECTIVE CATALYTIC REDUCTION, NO. 5, HALDOR TOPSOE, MODEL: GT-301, 16 LAYERS OF CATALYST MODULES, 1006 CU.FT. WITH A/N: 614226  AMMONIA INJECTION, GRID, AQUEOUS AMMONIA	C67	C66 S69		NH3: 5 PPMV NATURAL GAS (4) [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]	A195.11, D12.9, D12.10, D12.13, D29.7, E179.4, E179.6, E193.2
STACK, SERVING GT-5, HEIGHT: 125 FT ; DIAMETER: 10 FT 2.04 IN A/N: 579955	S69	C67			
<b>System 3: OIL WATER SEPARATOR</b>					
OIL WATER SEPARATOR, 15000 GALS/HR; WIDTH: 7 FT ; HEIGHT: 6 FT ; LENGTH: 15 FT A/N: 403553	D49				
<b>Process 4: R219 EXEMPT EQUIPMENT SUBJECT TO SOURCE-SPECIFIC RULE</b>					
RULE 219 EXEMPT EQUIPMENT, COATING EQUIPMENT, PORTABLE, ARCHITECTURAL COATINGS	E20			ROG: (9) [RULE 1113, 2-5-2016; RULE 1171, 2-1-2008; RULE 1171, 5-1-2009]	K67.4
RULE 219 EXEMPT EQUIPMENT, COOLING TOWERS	E21				H23.4

\* (1) (1A) (1B) Denotes RECLAIM emission factor (2) (2A) (2B) Denotes RECLAIM emission rate  
 (3) Denotes RECLAIM concentration limit (4) Denotes BACT emission limit  
 (5) (5A) (5B) Denotes command and control emission limit (6) Denotes air toxic control rule limit  
 (7) Denotes NSR applicability limit (8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)  
 (9) See App B for Emission Limits (10) See section J for NESHAP/MACT requirements

\*\* Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.





**FACILITY PERMIT TO OPERATE  
PASADENA CITY, DWP**

**SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS**

**The operator shall comply with the terms and conditions set forth below:**

D29.7 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NH3 emissions	District method 207.1	1 hour	Outlet of the SCR serving this equipment

The test shall be conducted to demonstrate compliance with the Rule 1303 BACT concentration limit.

The test shall be conducted and the results submitted to the District within 60 days after the test date. The AQMD shall be notified of the date and time of the test at least 7 days prior to the test.

The test shall be conducted once every calendar year. If a source test results show a violation of the NH3 limit the future source tests shall be conducted quarterly. The source test frequency may be reduced to annually only after four consecutive quarterly tests of demonstrating compliance.

The NOx concentration, as determined by the CEMS, shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable, a test shall be conducted to determine the NOx emissions using District Method 100.1 measured over a 60 minute averaging time period.

If the turbine is not in operation during one quarter, then no testing is required during that quarter.

**[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]**

[Devices subject to this condition : C67]

D29.8 The operator shall conduct source test(s) for the pollutant(s) identified below.





South Coast Air Quality Management District  
21865 COPLEY DRIVE, DIAMOND BAR, CA 91765-4178

P 76085

# NOTICE OF VIOLATION

DATE OF VIOLATION		
Month	Day	Year
02	23	2022

Facility Name: <b>PASADENA CITY, DWP</b>		Facility ID#: <b>800768</b>	Sector: <b>CB</b>
Location Address: <b>72 E GLENARM ST</b>		City: <b>PASADENA</b>	Zip: <b>91105</b>
Mailing Address: <b>85 E STATE ST</b>		City: <b>PASADENA</b>	Zip: <b>91105</b>

YOU ARE HEREBY NOTIFIED THAT YOU HAVE BEEN CITED FOR ONE OR MORE VIOLATIONS OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD) RULES, STATE LAW OR FEDERAL LAW. IF PROVEN, SUCH VIOLATION(S) MAY RESULT IN THE IMPOSITION OF CIVIL OR CRIMINAL PENALTIES.

EACH DAY A VIOLATION OCCURS MAY BE HANDLED AS A SEPARATE OFFENSE REGARDLESS OF WHETHER OR NOT ADDITIONAL NOTICES OF VIOLATION ARE ISSUED.

### DESCRIPTION OF VIOLATIONS

#	Authority*	Code Section or Rule No.	SCAQMD Permit to Operate or CARB Registration No.	Condition No. (If Applicable)	Description of Violation
1	<input checked="" type="checkbox"/> SCAQMD <input type="checkbox"/> CH&SC <input type="checkbox"/> CCR <input type="checkbox"/> CFR	2004 (f)(1)	<sup>CB</sup> 06/21/2023	A195.7 A195.8 A195.9	FAILURE OF FACILITY PERMIT HOLDER TO COMPLY WITH PERMIT CONDITIONS A195.7, A195.8, AND A195.9. <sup>CB</sup> 06/21/2023
2	<input checked="" type="checkbox"/> SCAQMD <input type="checkbox"/> CH&SC <input type="checkbox"/> CCR <input type="checkbox"/> CFR	3002 (c)(1)	<sup>CB</sup> 06/21/2023	A195.7 A195.8 A195.9	FAILURE OF FACILITY PERMIT HOLDER TO COMPLY WITH PERMIT CONDITIONS A195.7, A195.8, AND A195.9. <sup>CB</sup> 06/21/2023
3	<input type="checkbox"/> SCAQMD <input type="checkbox"/> CH&SC <input type="checkbox"/> CCR <input type="checkbox"/> CFR				
4	<input type="checkbox"/> SCAQMD <input type="checkbox"/> CH&SC <input type="checkbox"/> CCR <input type="checkbox"/> CFR				
5	<input type="checkbox"/> SCAQMD <input type="checkbox"/> CH&SC <input type="checkbox"/> CCR <input type="checkbox"/> CFR				

Served To: <b>CHRISTIAN CHANG</b>	Phone: <b>020.744.3120</b>	Served By: <b>CHRISTER BALUYOT</b>	Date Notice Served: <b>06/31/2023</b>
Title: <b>ENVIRONMENTAL ENGINEER</b>	Email: <b>CCHANG@CITYOFPASADENA.NET</b>	Phone No.: <input checked="" type="checkbox"/> 909-396-3054 <input type="checkbox"/> 310-233-	Email: <b>CBALUYOT@aqmd.gov</b>

*Key to Authority Abbreviations: SCAQMD - South Coast Air Quality Management District CH&SC - California Health and Safety Code CCR - California Code of Regulations	Method of Service: <input type="checkbox"/> In Person <input checked="" type="checkbox"/> Certified Mail + E-MAIL
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