DOCKETED

Docket Number:	79-AFC-05C
Project Title:	Compliance - Application for Certification for PG&E Geysers Unit 16 (78-NOI-6)
TN #:	206731
Document Title:	Geysers Power Quicksilver (Unit 16) - Cooling Tower Replacement Project Description and Request for Expedited Processing
Description:	N/A
Filer:	Camile Remy-Obad
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	11/23/2015 3:01:35 PM
Docketed Date:	11/23/2015

GEYSERS POWER COMPANY, LLC
10350 SOCRATES MINE ROAD
MIDDLETOWN, CA 9546
NYSE CPN

GWQ 15-165

November 19, 2015

Mr. Robert Oglesby
Executive Director
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, CA 95814

RE: Geysers Power Company Quicksilver (Unit 16) Geothermal Project (79-AFC-5C): Request for Expedited Processing Pursuant to Executive Order B-36-15

Dear Mr. Oglesby:

Pursuant to Section 5 of Governor Brown's Executive Order B-36-15, issued on November 13, 2105, Geysers Power Company, LLC ("GPC") submits this request for expedited processing and approval by the Executive Director of authorization for GPC to reconstruct the cooling tower for the Quicksilver (Unit 16) power plant ("Project") pursuant to the Project's license. This authorization is required to remediate wildfire damage and restore power plant operation by authorizing emergency construction activities, including demolition, replacement, repair and reconstruction necessary for powerplant operation.

GPC requests that the Executive Director authorize GPC to immediately begin reconstruction of the cooling tower at the Project that was destroyed by the Valley Fire on September 12, 2015.

Sonoma County has agreed to be the Chief Building Official to oversee the construction. GPC is prepared to apply immediately for a building permit, and to begin construction promptly upon issuance of the permit and approval of the Memorandum of Understanding between the California Energy Commission and Sonoma County.

The cooling tower to be constructed consists of replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced. The new structure will differ from the structure replaced only to the extent necessary to conform to current building codes and modern building and engineering practices. Therefore, the replacement of the cooling cover is categorically exempt under the California Environmental Quality Act and is presumed to have no possible significant environmental effects.

The replacement of the cooling tower will not result in a significant change in the design, operation or performance of the project.

1. **Section 1769 (a)(l)(A) and (B) requires a description of the proposed modifications, including new language for affected conditions and the necessity for the modifications.**

Cooling Tower Replacement

A brief description of the cooling tower replacement is attached hereto as Attachment A.

No changes in the Project's conditions of certification are required.

2. **Section 1769(a)(l)(C) requires a discussion of whether the modification is based on information that was known by the petitioner during the certification proceeding, and an explanation of why the issue was not raised at that time.**

The cooling tower replacement is not based upon information that was known during the certification proceeding for the Project. Authorization of the cooling tower replacement is necessary to facilitate the prompt replacement of the cooling tower that was destroyed by the Valley Fire on September 12, 2015.

3. **Section 1769(a)(l)(D) requires a discussion of whether the modification is based on new information that changes or undermines the assumptions, rationale, findings, or other bases of the final decision, and explanation of why the change should be permitted.**

The cooling tower replacement does not change or undermine the assumptions, rationale, findings, or other bases of the Commission's decision certifying the Project. The cooling tower replacement will not significantly change the design, operation or performance of the Project.

4. **Section 1769(a)(l)(E) requires an analysis of the impacts the modifications may have on the environment and proposed measures to mitigate any significant adverse impacts.**

There is no possibility that the cooling tower replacement will result in any significant adverse environmental impacts; thus, no mitigation measures are required. The Project will continue to meet all existing emissions limits established in the existing permits. The new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced. Therefore, there will be no material change in the impacts of the Project.

5. **Section 1769(a)(l)(F) requires a discussion of the impact of the modification on the facility's ability to comply with applicable laws, ordinances, regulations, and standards.**

The cooling tower replacement will not impact the Project's ability to comply with applicable laws, ordinances, regulations, and standards ("LORS").

6. **Section 1769(a)(l)(G) requires a discussion of how the modifications affect the public.**

The cooling tower replacement will not adversely affect the public. The cooling tower replacement will not increase the actual emissions of the Project, or result in adverse environmental effects. Therefore, there are no significant adverse effects on property owners that will result from the cooling tower replacement.

7. **Section 1769(a)(l)(H) requires a list of property owners potentially affected by the modification is required.**

The cooling tower replacement will not adversely affect any property owners because the replacement will not increase the actual emissions of the Project or result in adverse environmental effects. Therefore, a list of property owners affected by the cooling tower replacement is not required.

8. **Section 1769(a)(l)(I) requires a discussion of the potential effect on nearby property owners, the public and the parties in the application proceeding.**

The cooling tower replacement will not adversely affect any property owners, the public nor any party in the application proceeding. The cooling tower replacement will not increase the actual emissions of the Project, or result in adverse environmental effects. Therefore, the cooling tower replacement will have no impact on property owners, the public, or any other parties.

CONCLUSION

GPC requests that the Executive Director exercise the authority granted pursuant to Section 5 of Governor Brown's Executive Order B-36-15, issued on November 13, 2105, and approve the requested authorization for the cooling tower replacement for the Project by November 30, 2015.

Please contact Bruce Carlsen at 707 431-6198 if you have any questions regarding this request.

Sincerely,

James Kluesener

James Kluesener
VP Geothermal Regional Operations

Attachments: 2

CC:
Camille Remy-Obad, Compliance Project Manager

Geysers Power Company Quicksilver (Unit 16) Geothermal Project (79-AFC-5C)
Request for Expedited Processing Pursuant to Executive Order B-36-15

ATTACHMENT A

Cooling Tower Replacement
Project Description

Geysers Power Company Quicksilver (Unit 16) Geothermal Project (79-AFC-5C)
Request for Expedited Processing Pursuant to Executive Order B-36-15

ATTACHMENT B

Cooling Tower Replacement
Lake County Air Quality Management District Application

GEYSERS POWER COMPANY, LLC
10350 SOCRATES MINE ROAD
MIDDLETOWN, CA 95461

NYSE CPN

GWQ 15-165

November 17, 2015

Ms. Camille Remy-Obad
Compliance Project Manager
California Energy
Commission
1516 Ninth Street, MS-15
Sacramento, CA 95814

RE: Project Description for Geysers Power Company Quicksilver (Revision 1)
(Unit 16) Geothermal Project: 79-AFC-9C
Replacement in kind of cooling tower damaged in the 2015 Valley fire.

At your request, we are providing a Project Description for replacement of the cooling tower that was damaged beyond repair during the September 12 Valley fire at the Quicksilver (Unit 16) power plant Project ("Project").

Geysers Power Company, LLC ("GPC") plans to replace the fire damaged cooling tower structure above the concrete basin. The replacement tower will be functionally equivalent to the cooling tower that existed prior to the fire. The replacement will be the same approximate dimensions, located in the same footprint as the prior structure.

Units 16

	OLD TOWER	NEW TOWER	Comment
Type	Crossflow	Crossflow	Equivalent
Model	674-5-11	F678A-20-11	Equivalent
Number of Cells	11	11	Equivalent
Structural Material	Treated fir	Fire Resistant FRP	More Fire Resistant
Cooling Tower Length (ft-in)	352'-8"	352'-8"	Equivalent
Cooling Tower Width (ft-in)	79'-1".5	78'-2"	Equivalent
Discharge Elevation (ft-in)	64'-4"	61'-7"	Slightly lower
Circulation Rate(gpm)	165,000	165,000	Equivalent.

Drift Rate(%)	0.002	0.001	Equivalent and better than the 0.002 permit requirement
Air mass flow discharge per cell (MMlb/hr)	5.1	6.0	Functionally Equivalent or better
Color	Willow Green, Semi-gloss	Willow Green, Satin	Satin per CEC Request
Gear Ratio	12.98:1	18.54:1	Slower, lower noise
Number of fan blades	8	12	Equivalent volume of air at lower fan speed to reduce noise
Shroud Height (ft)	18	>=13.8	Shorter more rigid; lower noise design

The Unit 16 power plant is a steam limited facility and the replacement tower will not have a significant effect on the operation or megawatt output from the facility. The replacement tower will not result in a significant effect on the environment and will continue to comply with all applicable laws, ordinances, regulations, and standards ("LORS"). The facility will continue to meet all existing emissions limits established in the existing permits.

The replacement tower will differ from the original tower in several minor respects. The original tower was constructed to meet the 1976 California building Code. The replacement tower will meet the 2013 California Building Code. The drift eliminators will be more efficient – at 0.001% - which will more than satisfy the permit requirement of 0.002%. The structural components of the tower will be made of fiber reinforced plastic (rather than wood) and the drift eliminators will be more efficient.

Review of Applicable Technical Areas

Air

The proposed 0.001% drift eliminators satisfy the permit requirement of 0.002%, and there are no significant changes to the equipment description or operating conditions of the Permit to Operate for the Project. Filing for an Authority to Construct with Lake County Air Quality Management District is required but no changes in the Permit to Operate are requested.

Biology
There will be no new ground disturbance or trenching; existing drill pads will be used for laydown areas during the tower reconstruction; no new laydowns will need to be created. Existing access roads (paved or with road base) will be used for construction access.

Cultural Resources
There will be no new ground disturbance or trenching; existing drill pads will be used for laydown areas during the tower reconstruction; no new laydowns will need to be created. Existing access roads (paved or with road base) will be used for construction access. No cultural resources will be impacted.

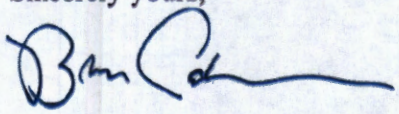
Noise
The Unit 16 cooling tower is located southwest of the Anderson Springs Community. A recent study determined that the cooling tower that was destroyed by the Valley fire was in compliance with local noise ordinances and regulations. To further reduce cooling tower noise in Anderson Springs, the Unit 16 cooling tower will be required to meet additional noise requirements which were prepared by the noise consultant who authored the recent noise study. The noise specification included noise limits on the cooling tower and components as well as a limit on fan tip speed.

Visual
The Unit 16 cooling tower is located on a point viewable from Socrates Mine Road and other locations to the east. The cooling tower color will be the same as it was before: Sherwin Williams satin "Willow Green", color code # SRN09-161 or equivalent which blends in well with the surrounding vegetation. Lights on the cooling tower deck will be shielded.

Water Quality, Hydrology and Water Resources
The plant yard is surrounded by an impermeable berm and is asphalted. All cooling tower construction activities will occur within the bermed, asphalted area. Any rain/stormwater generated during the cooling tower construction will be captured and sent to reinjection. The facility is a Zero Discharge facility so no stormwater will be allowed to run off the plant site.

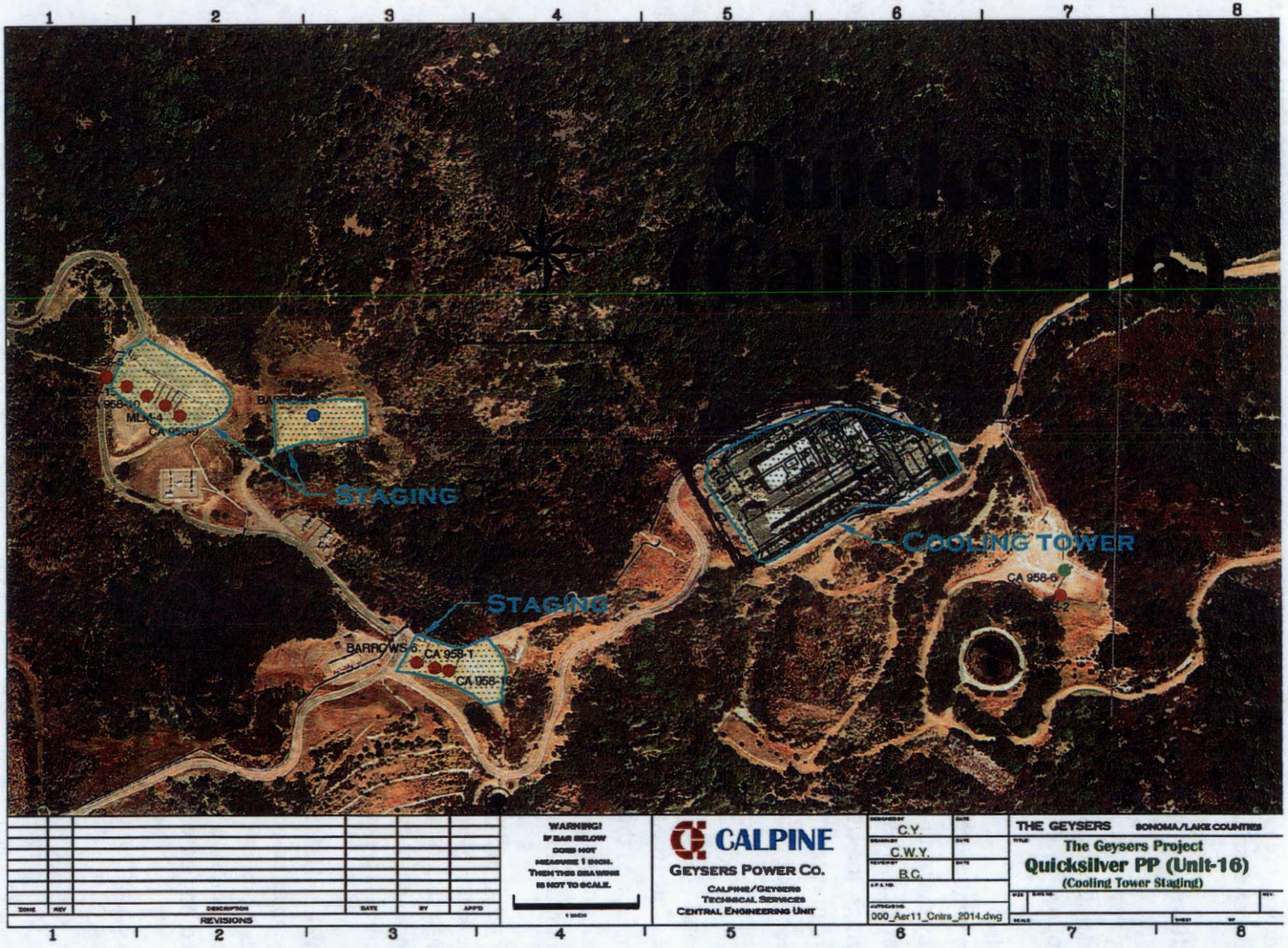
Worker Health (construction)/Safety/Misc
Reconstruction of the towers will take approximately five months; and the number of workers will be an average of 30 and a predicted maximum of 55. There will be on-site security during the operation. Potable water, hygiene facilities and refuse containers will be provided to accommodate the number of workers.

Sincerely yours,



Bruce Carlsen
Director, Environmental Services

Quicksilver Power Plant (Unit 16) Cooling Tower Replacement Project



GEYSERS POWER COMPANY, LLC
10350 Socrates Mine Road
Middletown, CA 95461

NYSE CPN

Letter: GPC-15-081

October 29, 2015

Doug Gearhart
Air Pollution Control Officer
Lake County Air Quality Management District
2617 S. Main St.
Lakeport, CA 95453

Attention: Doug Gearhart

Subject: Permits: Unit 16 (Quicksilver) Power Plant Application For Authority to Construct Replacement of Cooling Tower Destroyed by the Valley Fire

Dear Mr. Gearhart:

Enclosed please find Geysers Power Company LLC Authority to Construct application for reconstruction of the Quicksilver Power Plant cooling tower that was destroyed by the Valley Fire this September.

Demolition of cooling towers destroyed by the Valley Fire has been initiated, as described in the NESHAP demolition notices submitted to your office. The start date for construction is dependent upon receipt of building permits, Authority to Construct Permits and California Energy Commission approval to proceed.

GPC is asking Lake County Air Quality Management District (LCAQMD) to commence review of this application at the earliest opportunity. Representatives of the California Energy Commission and Sonoma County have been coordinating with GPC to assist in GPC's recovery efforts as expeditiously as possible.

Attached is Calpine Corporation's check (No. 1000078522) as payment of $146211.42 for the required application fees .

Please contact me at 707.431.6266, if you need any additional information in support of these permit applications.

Sincerely,

Brian J. Bemdt
Environmental Services Manager | CPN Geysers Region

cc:

Ms. Camille Remy-Obad
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, California 95814-5512

Mathew Layton
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, California 95814-551

Attachment & Enclosure

ENCLOSURE

Application For Authority To Construct

LCAQMD Application Form

Project Description

Introduction

Unit 16 Emissions Review

Attachment 1

Project Description
Unit 16 Cooling Tower Rebuild Replacement

Lake County Air Quality Management District
885 Lakeport Blvd.
Lakeport, CA 95453
707-263-7000 / fax 263-0421

Douglas G. Gearhart
Air Pollution Control Officer
dougg@lcaqmd.net

Application For An Authority To Construct (& Attached List and Criteria)

Type of Application: ☐ New Facility ☑ Modification ☐ Existing Facility, Not Previously Permitted

Contact Name: Brian Berndt
Business Name: Geysers Power Company LLC
Mailing Address: c/o Calpine Corporation
10350 Socrates Mine Road
Middletown, CA 95461

Facility Name: Unit 16
Facility or Project Name: Replace destroyed cooling tower
Permit #: 91-004A/2003-03 Category: IV

Description of the Process/Purpose of the Facility: Geothermal Power production
Estimated Construction dates: Start - 12/1/2015 Completion - 5/22/2016

Equipment Location/Legal Description: Section 35, T11N, R8W MDB&M Lake County

Description of equipment by make, model, size and type: Rebuild cooling tower and associated equipment with equivalent replacement equipment.

Diagram/Plot Plan of Facility Enclosed? ☐ Yes ☑ No

Additional List and Criteria Data Attached: Yes ___ No ✓ (List and Criteria are attached)

If no give reason: ___

Operating Schedule: 24 Hours/Day 7 Days/Week 10 Weeks/Year Lat•N: ___

Production Rates: ___ /Hour, ___ /Day, ___ /Year (Specify Units) Long•W: ___

Amount, nature, and duration of emissions: Hydrogen Sulfide and Particulate emissions, See Project description

Attach a Facility and Equipment Diagram, Specification Sheet(s), and Process Flow Diagram. Show the location and distance to adjacent residences, businesses, schools and hospitals.

Type and efficiency of air pollution control equipment: See List and Criteria

Type and Estimated Quantity of fuel use: ___ ___ gal/yr (%S): ___

Ten year projected expansion plans: Maintain power production

I have read and understand the LCAQMD's List and Criteria for Authority to Construct Permits. I understand that I am responsible for any information listed herein or requested pursuant to this application. Based on information and belief formed after reasonable inquiry, the statements and information presented in this application and supplemental documentation are true, accurate, and complete.

Signature of authorized representative of firm — Date: 10/29/15

Name: Brian Berndt Title: ES Manager Telephone: (707) 431-6266
FAX: (707) 431-6246

Ek 3/2009

Project Description
Unit 16 Cooling Tower Rebuild Replacement

INTRODUCTION

The Valley wildfire of September 2015 resulted in the destruction of Unit 16's cooling tower along with some of its associated equipment. The Geysers Power Company, LLC (GPC) is replacing the destroyed equipment with the equivalent equipment to ensure that the project is not a modification pursuant to LCAQMD Rulebook § 237. Table 1 lists the pertinent details of the replacement cooling tower as compared to the destroyed equipment. The replacement will be the same approximate dimensions, located in the same footprint as the prior structure.

Table 1-Unit 16 Cooling Tower	Pre-fire Design	Replacement Design	Notes
Type	Crossflow	Crossflow	Equivalent
Model	674-5-11	F678A-20-11	Equivalent
Number of Cells	11	11	Equivalent
Wet Bulb Temperature (WBT °F)	65	65	Equivalent
Water inlet height above basin curb	45'-2 1/2"	45'-2 13/16"	Equivalent
Drift Eliminators	Marley Xcel PVC Cellular	Marley TU12X	Equivalent or better
Drift Rate (%)	0.001**	0.001	Equivalent or better
Fan Diameter (ft)	28	28	Equivalent
Gear Ratio	12.98:1	18.54:1	Slower, lower noise
Number of Fan Blades	8	12	Equivalent, lower speed reduced noise
Motor Size (hp)	200	200	Equivalent
Shroud Diameter (ft)	31.5	31'-5 5/8"	Equivalent
Shroud Exit Area (ft^2)	778	~~778~~785	Equivalent***
Air volumetric discharge per cell (cfm)	1,357,325	~~1,508,300~~ 1,494,900	Equivalent or better ****
Air mass flow discharge per cell (lb/hr)	5,096,484	~~6,014,498~~ 5,960,166	Equivalent or better***
Discharge Velocity (fpm)	1,745	~~1920~~ 1,903	Equivalent or better***
Maximum Circ Water Flow Rate (gpm)	165,000	165,000	Equivalent
Discharge Elevation (ft-in)*	64-4	61'-7"	2' 9" Lower
Structural Material	Treated Fir	Fiberglass	More Fire Resistance
Cooling Tower Length (ft-in)	352-8	352'-8"	Equivalent
Cooling Tower Width (ft-in)	79-1.5	78'-2"	Equivalent
Shroud Height (ft)	18	13.8	Shorter

* ref. Top of basin curb to top of shroud

** Installed drift rate is 0.001% , Existing permit required is 0.002% or better

*** Air Flow calculations amended based on design as of 11/16/2015

Project Description
Unit 16 Cooling Tower Rebuild Replacement

UNIT 16 EMISSIONS REVIEW

The data for the hydrogen sulfide were taken from the quarterly reports submitted to the LCAQMD. The H_2S actual emissions for the last 2 years (2013 and 2014) are presented in Table 2. The data for particulate matter were taken from operating records. The H_2S and PM actual emissions as compared to the LCAQMD Section 602 Thresholds are presented in Table 2.

TABLE 2 Unit 16 Emissions Review	**Tower H_2S**	**Tower $PM_{10/2.5}$**
Current Permit Limit (lbs/hr)	5.0	NA
LCAQMD Section 602 Threshold	20 lbs/hr or 150 lbs/day	20 lbs/hr or 150 lbs/day
2014 H_2S Emission (lbs/hr)	1.2	
2014 H_2S Emission (lbs/day)	29.7	
2013 H_2S Emission (lbs/hr)	1.6	
2013 H_2S Emission (lbs/day)	38.8	
2 year H_2S Baseline H_2S Emissions (TPY)	5.9	
24 Month Average PM Emissions (lbs/hr)		0.9
24 Month Average PM Emissions (lbs/day)		19.1
24 Month Baseline PM Emissions (tpy)		3.3

Backup calculations are shown is Attachment 1. PM emissions are not expected to change as the new cooling tower will have the same drift rate as the one destroyed. There is no increase in the amount of any air pollutant emitted by the source to which an ambient air quality standard applies as a result of this equipment replacement.

According to LCAQMD rules, "[a] written Authority to Construct shall be required to construct, erect, alter or replace any equipment which may cause, potentially cause, reduce, control or eliminate the issuance of air contaminants. " LCAQMD Rulebook § 600. However, according to Section 602, the requirements for air quality analyses pertaining to compliance with ambient air quality standards and application of the best available control technology (BACT) do not apply to reconstruction/replacement of the cooling tower because the emissions of hydrogen sulfide and particulate matter are below 20 pounds per hour or 150 pounds per day, as demonstrated above. *See* LCAQMD Rulebook § 600.A.2.

Project Description
Unit 16 Cooling Tower Rebuild Replacement

Attachment 1

2014	Hydrogen Sulfide				
Kg/hr Actual Emissions	Report	hours	lbs/Mon Actual Emissions		
0.5	GPC-15-001	744.0	818		
0.6	GPC-15-001	720.0	950		
0.5	GPC-15-001	744.0	818		
0.4	GPC-14-085	741.7	653		
0.6	GPC-14-085	744.0	982		
0.4	GPC-14-085	662.6	583		
0.3	GPC-14-073	720.0	475		
1.5	GPC-14-073	744.0	2455		
0.4	GPC-14-073	718.2	632		
0	GPC-14-036	86.1	0		
0.7	GPC-14-036	308.3	475		
0.4	GPC-14-036	738.8	650		
				lbs/hr	lbs/day
Total	2014	7672	9492	1.2	29.7

2013	Hydrogen Sulfide				
Kg/hr Actual Emissions	Report	hours	lbs/Mon Actual Emissions		
0.2	GPC-14-001	744.0	327		
0.7	GPC-14-001	720.0	1109		
1.5	GPC-14-001	744.0	2455		
0.9	GPC-13-085	744.0	1473		
0.4	GPC-13-085	744.0	655		
0.4	GPC-13-085	720.0	634		
0.7	GPC-13-073	674.5	1039		
0.5	GPC-13-073	693.2	763		
0.8	GPC-13-073	705.2	1241		
1.2	GPC-13-059	744.0	1964		
0.9	GPC-13-059	672.0	1331		
0.6	GPC-13-059	744.0	982		
				lbs/hr	lbs/day
Total	2013	8649	13972	1.6	38.8

2 year Baseline Emissions **H2S** **5.9** **Tons/yr**

ID	Sample Date	Unit 16 TDS	Circ water flow rate (gpm)	drift eliminator rate	lb/hr	Operation hours/mo	lb	days/mo	lb/day
3186	17-Aug-15	2664	84000	0.00001	1.1	661.48	737	30	25
3169	29-Jul-15	2476	84000	0.00001	1.0	744	771	31	25
3154	15-Jun-15	2322	84000	0.00001	1.0	720	899	30	23
3132	18-May-15	702	84000	0.00001	0.3	737.25	217	31	7
3115	16-Apr-15	920	84000	0.00001	0.4	472.2	182	30	6
3098	23-Mar-15	1783	84000	0.00001	0.7	744	555	31	18
3086	23-Feb-15	1670	84000	0.00001	0.7	672	469	28	17
3062	26-Jan-15	1585	84000	0.00001	0.7	737.7	489	31	16
3042**	15-Dec-14	2281	84000	0.00001	1.0	744.0	710	31	23
3023**	17-Nov-14	2626	84000	0.00001	1.1	720.0	791	30	26
3007**	27-Oct-14	2928	84000	0.00001	1.2	744.0	911	31	29
2991	22-Sep-14	2722	84000	0.00001	1.1	662.6	754	30	25
2904	18-Aug-14	2211	84000	0.00001	0.9	744.0	688	31	22
2977	21-Jul-14	3146	84000	0.00001	1.3	741.7	976	31	31
2964	23-Jun-14	4666	84000	0.00001	2.0	718.2	1402	30	47
2951	20-May-14	1453	84000	0.00001	0.6	744.0	452	31	15
2862*	21-Apr-14	921	84000	0.00001	0.4	720.0	277	30	9
2860*	24-Mar-14	874	84000	0.00001	0.4	738.8	270	31	9
2855*	24-Feb-14	645	84000	0.00001	0.3	308.3	83	28	3
			84000	0.00001	0.0	86.1	0	3 6	0
2833	16-Dec-13	675	84000	0.00001	0.3	744.0	210	31	7
2817	25-Nov-13	452	84000	0.00001	0.2	720.0	136	30	5
2802	21-Oct-13	2602	84000	0.00001	1.1	744.0	810	31	26
2787	16-Sep-13	2605	84000	0.00001	1.1	720.0	784	30	26
						744		31	
			24 month Ave (lb/hr)		0.9				
			Sum of hours		15368				
			Sum of days		702				
			Sum of lbs		13375				
			lbs /day		19.1				

2 year Baseline Emissions tpy **3.3**

* Total solids TSDS data is calculated from analytical results of hotwell water samples and analysis of concentration cycles.

** Total solids TSDS data is calculated from IC analytical results of Circ water samples and analysis of concentration cycles.