DOCKETED	
Docket Number:	79-AFC-01C
Project Title:	Compliance - Application for Certification for PG&E Geysers Unit 17 (78-NOI-3)
TN #:	231308
Document Title:	Staff Analysis of Petition to Amend for Recommissioning Activities
Description:	Staff Analysis of Petition to Amend for Recommissioning Activities; Installation of a permanent standby diesel engine driven pump
Filer:	Patty Paul
Organization:	California Energy Commission
Submitter Role:	Commission Staff
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CALIFORNIA ENERGY COMMISSION
1516 Ninth Street
Sacramento, California 95814

Main website: www.energy.ca.gov
CEC-57 (Revised 1/19)

DATE: December 23, 2019

TO: Interested Parties

FROM: Eric Veerkamp, Compliance Project Manager

SUBJECT: **Lake View, Unit 17 (79-AFC-01C)**
Staff Analysis of Petition to Amend for Recommissioning Activities;
Installation of a permanent standby diesel engine driven pump

On October 1, 2019, Geysers Power Company (GPC), LLC, submitted a petition for modification of the Final Decision for the Lake View (Unit 17) geothermal electrical generating facility (TN 229899). GPC has requested California Energy Commission (CEC) approval to install a permanent standby diesel engine-powered pump for the cooling tower wet down system. The equipment upgrade would change the operational characteristics of the power plant, and it would also require changes to the air quality conditions of certification for the facility. CEC staff is additionally proposing to revise the facility's air quality conditions of certification for consistency with the Northern Sonoma County Air Pollution Control District's (NSCAPCD) Authority to Construct (ATC) Permit, issued on June 27, 2019.

Lake View (Unit 17) is a dry steam 110-megawatt geothermal power plant, originally licensed by the CEC in September 1979, with commercial operations commencing in November 1982. The facility is located at 10350 Socrates Mine Road, Sonoma County, California.

CEC staff reviewed the present petition and assessed the impacts of this proposal on environmental quality and on public health and safety. Based on staff's analysis, contained below, staff recommends modifications to air quality conditions of certification for Lake View (Unit 17). The current conditions do not provide an adequate, traceable nexus between the air quality standards and the reporting requirements. Staff proposes that the existing slate of air quality conditions of certification be repealed and replaced with new conditions of certification to update the reporting standards and incorporate revised NSCAPCD permit language that has changed as a result of new Title V requirements.

Staff concludes that, with adoption of the recommendations in the analysis below, the project would remain in compliance with applicable laws, ordinances, regulations, and standards (LORS), and the proposed changes to the project would not result in any significant adverse direct, indirect, or cumulative impacts to the environment (Cal. Code of Regs., tit. 20, § 1769).

The petition to amend and staff analysis have been posted on the CEC's Lake View (Unit 17) webpage at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=79-AFC-01C.

CEC staff intends to recommend approval of the petition and the new conditions of certification proposed in staff's analysis at the January 22, 2020, CEC Business Meeting. After the meeting, the CEC's Order regarding this petition will also be posted on the Commission's Lake View (Unit 17) webpage.

This notice and staff analysis is being sent electronically to the Lake View (Unit 17) list serve.

Any person may comment on the staff analysis or petition to amend. Those who wish to comment on the analysis or petition to amend are asked to submit their comments by 5:00 PM on Monday, January 20, 2020. To use the CEC's electronic commenting feature, go to the CEC's webpage for this facility, cited above, click on either the "Comment on this Proceeding" or "Submit e-Comment" links, and follow the instructions in the online form. Be sure to include the facility name in your comments.

Written comments may also be mailed or hand-delivered to:

California Energy Commission
Dockets Unit, MS-4
Docket No. 79-AFC-01C
1516 Ninth Street
Sacramento, CA 95814-5512

All comments and materials filed with the Dockets Unit will be added to the Lake View (Unit 17) Docket Log and become publicly accessible on the CEC's webpage for the facility.

If you have questions about this notice, please contact Eric Veerkamp, Compliance Project Manager, at (916) 654-4295 or via e-mail at: eric.veerkamp@energy.ca.gov.

For information on participating in the CEC's review of the proposed modification to the Lake View (Unit 17) facility, please contact the CEC Public Advisor's Office at (800) 822-6228 (toll-free in California). The Public Adviser's Office can also be contacted via e-mail at: publicadvisor@energy.ca.gov. News media inquiries should be directed to the Energy Commission Media Office at (916) 654-4989, or by e-mail at: mediaoffice@energy.ca.gov.

Lake View (Unit 17) List Serve

GEYSERS LAKE VIEW, UNIT 17 (79-AFC-01C)
Petition to Amend Commission Decision
EXECUTIVE SUMMARY
Eric Veerkamp

INTRODUCTION

On October 1, 2019, Geysers Power Company, LLC, filed a revised post certification petition for modification (TN 229899) with the California Energy Commission (CEC) requesting to modify the Lake View (Unit 17) geothermal power plant (79-AFC-01C) for changes to the fire system as part of the fire system recommissioning activities. Lake View (Unit 17) is currently undergoing recommissioning activities to assess the plant's current fire protection needs and implement modifications and repairs to satisfy fire code and CEC condition of certification requirements. The petition requests approval of a permanent stand-by diesel engine-driven pump for the cooling tower wet-down system.

The diesel engine, pump, and associated equipment will all be contained on a single skid, and placed on a foundation located in the existing developed yard. The engine will be able to be manually started locally, or alternatively remotely started from the control room at the Geysers Administrative Center in the event of a wildfire if staff needs to evacuate the site, and will provide water to the cooling tower wet-down system.

The purpose of the CEC's review process is to assess whether the proposed amendment would have a significant impact on the environment or cause the project to not comply with applicable laws, ordinances, regulations, and standards (LORS). (Cal. Code Regs., tit. 20, § 1769.)

CEC staff has completed its review of all materials received. The staff analysis below is staff's independent assessment of the project owner's proposed modifications. The proposed conditions of certification include staff-recommended conditions of certification and the applicable Northern Sonoma County Air Pollution Control District (NSCAPCD) operating permit conditions. Staff conditions are additional conditions of certification recommended for the project modification. With the adoption of staff's recommended new air quality conditions of certification, the modifications to Lake View (Unit 17) would comply with applicable federal, state, and NSCAPCD LORS, and would not result in significant air quality impacts.

PROJECT LOCATION AND DESCRIPTION

Lake View (Unit 17) is a dry steam, 110-megawatt geothermal power plant. Lake View (Unit 17), formerly known as Pacific Gas & Electric Company's (PG&E) Geysers Unit 17 Geothermal Project, was renamed when it was purchased by Geysers Power Company, a wholly-owned subsidiary of Calpine Corporation, in 1999. PG&E's Geysers Unit 17, was licensed by the CEC in September 1979. Commercial operation commenced in

November 1982. Lake View (Unit 17) is located at 10350 Socrates Mine Road, Sonoma County, California.

DESCRIPTION OF PROPOSED MODIFICATIONS

The modifications proposed in this petition for modification include the following:

- Install a permanent standby diesel engine-powered pump for the cooling tower wet-down system

NECESSITY FOR THE PROPOSED MODIFICATIONS

The primary purpose and need for this amendment is to upgrade the wetting system to provide a heightened level of protection against approaching wildfire, and to install and operate it consistently with applicable LORS. The proposed modification changes the operational characteristics of the plant and triggers the need to maintain consistency with the (NSCAPCD) Authority to Construct permit, issued on June 27, 2019.

STAFF'S ASSESSMENT OF THE PROPOSED AMENDMENT

CEC technical staff reviewed the petition for modification for potential environmental effects and consistency with applicable LORS. Staff's conclusions reached in each technical area are summarized in **Executive Summary Table 1**.

Staff has determined that the technical or environmental areas of **Biological Resources, Facility Design, Geological and Paleontological Resources, Public Health, Land Use, Socioeconomics and Environmental Justice, Traffic and Transportation, Visual Resources, Waste Management, Water Quality and Soils, Efficiency, Reliability, Transmission Line Safety and Nuisance, and Transmission System Engineering** are not affected by the proposed project modifications.

For the technical areas of **Cultural Resources, Hazardous Materials, Noise, Facility Design, and Worker Safety and Fire Protection,** staff has concluded that the proposed changes would not result in a significant impact on the environment or cause the project to not comply with applicable LORS.

Staff notes the following for these areas:

CULTURAL RESOURCES

Staff's review of the available literature indicates that the area proposed for modification is too old and has been unavailable to support human occupation and, therefore, would not contain archaeological materials. Since the current ground surface was formed long before humans entered the region and did not constitute an available ground surface until its exposure in 1982, archaeological materials would not have been deposited here, nor would they occur below the current grade.

Based on this review, staff concludes that the proposed modification would not affect cultural resources. The existing cultural resources license conditions do not require modification, and the existing conditions of certification will be sufficient to ensure impacts from the proposed amendment would be less than significant.

HAZARDOUS MATERIALS

Hazardous materials used as part of this activity are similar to those for existing maintenance activities, including solvents, gasoline, lubricants, and welding gases. Such materials are already included in the annual hazardous materials business plan. No extremely hazardous or regulated hazardous materials will be used on site specifically in relation to the new diesel pump.

With the petitioner's continued compliance with existing conditions of certification, the proposed modification would not have a significant effect on the environment and would continue to comply with all applicable LORS.

NOISE

Because of the temporary nature of the construction work, and because the diesel pump would operate following a planned evacuation, the project's noise impacts would be less than significant with implementation of the existing Noise conditions of certification in the Final Decision.

FACILITY DESIGN

Implementation of the existing conditions of certification in the Final Decision would ensure that the permanent diesel driven pump and associated piping are installed in compliance with the 2019 California Building Code.

WORKER SAFETY AND FIRE PROTECTION

Construction activities during installation of the diesel engine-driven pump would comply with worker safety and fire safety requirements already contained in health and safety plans utilized for construction of the main facility. By continuing to comply with the existing conditions of certification, the petitioner's proposed installation of a new diesel engine driven pump would not have a significant effect on the environment, and would continue to comply with all applicable LORS.

AIR QUALITY

Staff determined that the technical area of **Air Quality** would be affected by the proposed project changes and has proposed new and revised conditions of certification in order to assure compliance with LORS and to reduce potential environmental impacts

to a less than significant level. The details of the proposed changes to conditions of certification can be found under the **Air Quality** section in this Staff Analysis.

Executive Summary Table 1
Summary of Impacts to Each Technical Area

Technical Areas Reviewed	Technical Area Not Affected	Potential Impacts			Revised or New Conditions of Certification requested or recommended
		Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	
Air Quality			X		X
Biological Resources	X				
Cultural Resources				X	
Facility Design				X	
Geological and Paleontological Resources	X				
Hazardous Materials Management				X	
Land Use	X				
Noise and Vibration				X	
Public Health	X				
Socioeconomics	X				
Soil and Water Resources	X				
Traffic and Transportation	X				
Transmission Line Safety & Nuisance	X				
Transmission System Engineering	X				
Visual Resources	X				
Waste Management	X				
Worker Safety and Fire Protection				X	

ENVIRONMENTAL JUSTICE

Environmental Justice – Figure 1 shows 2010 census blocks in the six-mile radius of the Lake View (Unit 17) with a minority population greater than or equal to 50 percent. The population in these census blocks represents an environmental justice (EJ) population

based on race and ethnicity as defined in the United States Environmental Protection Agency's Guidance on Considering Environmental Justice During the Development of Regulatory Actions. Staff conservatively obtains demographic data within a six-mile radius around a project site based on the parameters for dispersion modeling used in staff's Air Quality analysis. Air quality impacts are generally the type of project impacts that extend the furthest from a project site. Beyond a six-mile radius, air emissions have either settled out of the air column or mixed with surrounding air to the extent the potential impacts are less than significant. The area of potential impacts would not extend this far from the project site for most other technical areas included in staff's EJ analysis.

Based on California Department of Education data in the Environmental Justice – Table 1, staff concluded that the percentage of those living in the Kelseyville Unified, Cloverdale Unified, and Geyserville Unified school districts (in a six-mile radius of the project site) and enrolled in the free or reduced price meal program is larger than those in the reference geography, and thus are considered an EJ population based on low income as defined in Guidance on Considering Environmental Justice During the Development of Regulatory Actions. Environmental Justice – Figure 2 shows where the boundaries of the school district are in relation to the six-mile radius around the Lake View Geothermal Power Plant site.

Environmental Justice – Table 1
Low Income Data within the Project Area

LAKE COUNTY SCHOOL DISTRICTS IN SIX-MILE RADIUS	Enrollment Used for Meals	Free or Reduced Price Meals	
Kelseyville Unified	1,702	1,345	79.0%
Middletown Unified	1,712	1,061	62.0%
REFERENCE GEOGRAPHY			
Lake County	9,549	7,324	76.7%
SONOMA COUNTY CCHOOL DISTRICTS IN SIX-MILE RADIUS	Enrollment Used for Meals	Free or Reduced Price Meals	
Cloverdale Unified	1,440	866	60.1%
Geyserville Unified	237	138	58.2%
REFERENCE GEOGRAPHY			
Sonoma County	70,455	33,570	47.6%

Source: CDE 2018. California Department of Education, DataQuest, Free or Reduced Price Meals, District level data for the year 2017-2018, <http://dq.cde.ca.gov/dataquest/>.

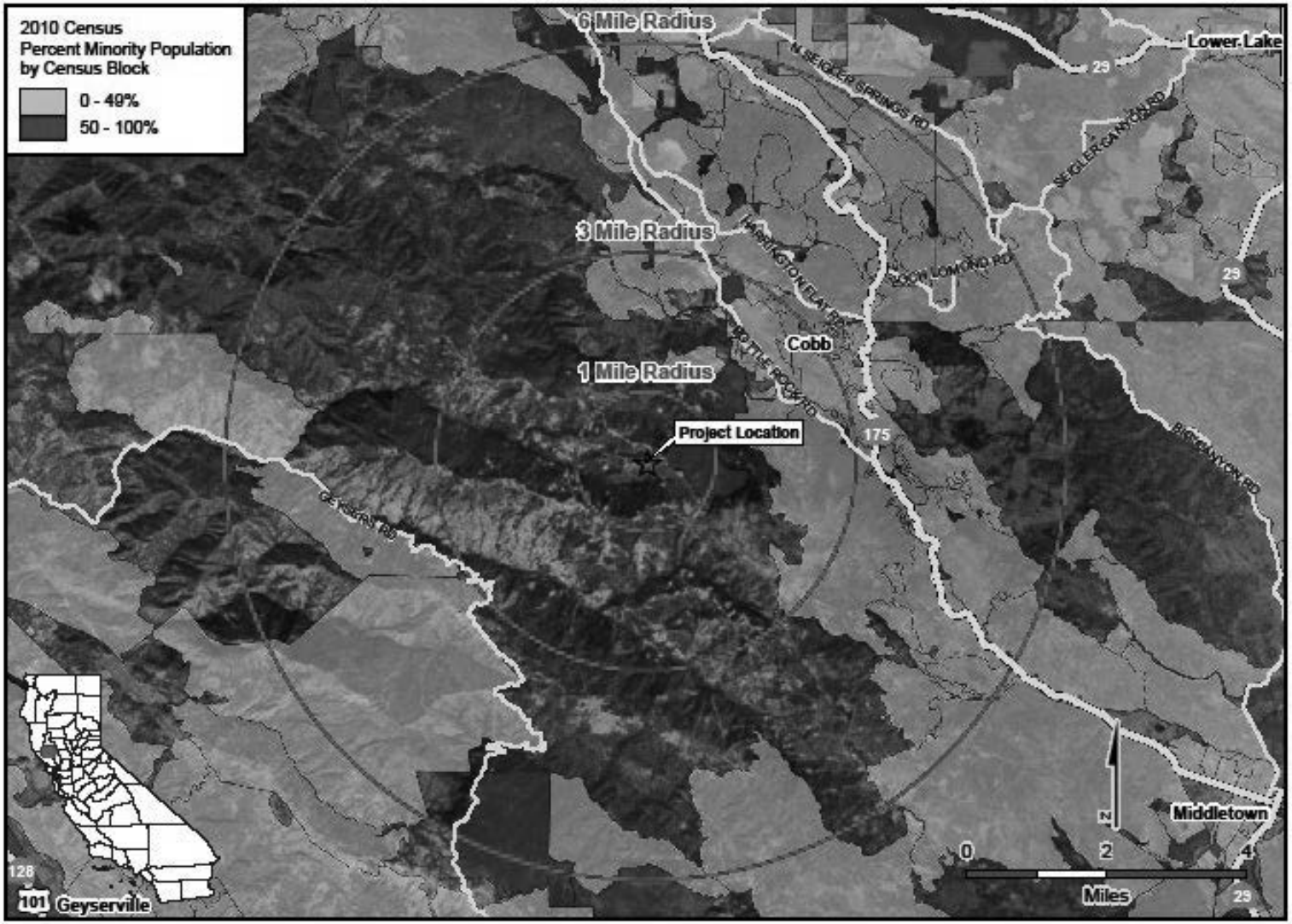
ENVIRONMENTAL JUSTICE CONCLUSIONS

For the technical areas affected by the project modifications – Cultural Resources, Hazardous Materials Management, Noise, Facility Design, and Worker Safety and Fire Protection – staff concludes that impacts would be less than significant, and thus would be less than significant on the EJ population represented in Environmental Justice –

Figure 1. In the Air Quality analysis, staff proposes changes to conditions of certification. Staff has determined that by adopting the proposed changes to the existing conditions of certification, the modified projects would not cause significant air quality impacts for any population in the project's six-mile radius, including the EJ population. Impacts to the EJ population are less than significant.

ENVIRONMENTAL JUSTICE - FIGURE 1

Lakeview (formerly PG&E Geysers 17) - Environmental Justice Population Figure



CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION

SOURCE: Census 2010 PL 94-171 Data

STAFF RECOMMENDATIONS AND CONCLUSIONS

After reviewing the petition for modification, staff concludes that the following findings can be made and will recommend approval of the petition to the Energy Commission:

A. The petition meets all of the filing criteria of Title 20, California Code of Regulations, section 1769(a), concerning post-certification project modifications;

B. The findings required by Title 20, California Code of Regulations, section 1748(b) are not applicable to the project change;

C. The project change would not cause the project to fail to comply with any applicable laws, ordinances, regulations and standards;

D. With the implementation of staff's proposed changes to the Air Quality conditions of certification, there would be no new or additional unmitigated significant environmental impacts associated with the project change; and

E. The updated Air Quality conditions of certification reflect changes made by the relevant Air District and would harmonize the Energy Commission's license with the Air District's permit.

REFERENCES

CEC 2019 – Lake View Geothermal Project Revised Petition for Modification - Fire System Recommissioning Activities, Docket No. 79-AFC-01C Lake View (Unit 17) Geothermal Project (TN 229899) docketed October 1, 2019

CEC 1979 – California Energy Commission – Lake View (Unit 17) 1979 Final Decision (TN 206754) docketed November 24, 2015

CEC 1979 – California Energy Commission – Lake View (Unit 17) Compliance Plan (TN 206753) docketed November 24, 2015

Lake View Geothermal (79-AFC-01C)
Request to Amend Final Commission Decision
Air Quality Analysis of Modification for Fire System Recommissioning Activities
Nancy Fletcher

INTRODUCTION AND SUMMARY

On October 1, 2019, the Geysers Power Company, LLC (petitioner or GPC) filed a revised post certification petition for modification (TN229899) with the California Energy Commission (CEC) requesting a modification to the CEC license for the addition of a permanent emergency standby diesel engine driven pump for the cooling tower wet-down system at the Lake View Unit 17 Geothermal Power Plant (Lake View). Lake View (Unit 17) consists of a nominal 110-megawatt (MW) turbine generator, condensate and circulating water systems, a multiple cell mechanically induced crossflow cooling tower, a transmission switchyard, and a hydrogen sulfide (H_2S) abatement system.

Lake View (Unit 17) is located in eastern Sonoma County near the Lake County border, within the Northern Sonoma County Air Pollution Control District (NSCAPCD). Lake View began commercial operation in 1982. Lake View currently provides approximately 52 MW of base-load electricity to northern California.

On October 20, 2016, GPC submitted a petition to the CEC to approve the installation of a steam turbine bypass system to allow the operation of Lake View to be more flexible and responsive to the needs of the California Independent System Operator (California ISO). Staff approved the petition without any changes to the Air Quality conditions of certification.

GPC is proposing a Tier-4 diesel-fueled emergency engine rated at 275 horsepower (HP) to power the wet-down pump. The wet-down system provides increased protection from wildland fire embers by reducing the probability of the ignition of the cooling tower. The operation of the diesel-fueled engine would be limited to testing, maintenance, and emergencies.

On June 27, 2019, GPC submitted an application to the NSCAPCD to evaluate the addition of the emergency diesel-fueled engine. The NSCAPCD issued an Authority to Construct (ATC) on July 3, 2019, and the final Permit to Operate (PTO) is still pending. The NSCAPCD will issue the final PTO after the installation and verification of the equipment.

CEC staff recommends additional California Environmental Quality Act (CEQA) mitigation measures, listed in the Proposed and Amended Conditions of Certification section of this analysis, to ensure potential air quality impacts from the proposed operation of the emergency diesel-fueled engine are mitigated to a less than significant level. With the proposed conditions, the project will attain compliance with applicable LORS, there would be no significant air quality impacts related to Lake View (Unit 17), and no population—including any environmental justice population—would be significantly impacted.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS COMPLIANCE

The NSCAPCD reviewed the requested addition of the emergency diesel-fueled engine and determined the proposed changes would comply with their regulations. CEC staff reviewed the NSCAPCD permit evaluations for consistency with all federal, state, and NSCAPCD laws, ordinances, regulations, and standards (LORS).

Air Quality Table 1 includes a summary of the LORS currently applicable to Lake View (Unit 17). The conditions of certification in the Energy Commission Final Decision (September 1979) and any and all amendments thereafter ensure that the facility would remain in compliance with all applicable LORS.

Air Quality Table 1
Laws, Ordinances, Regulations, and Standards

Applicable Law	*Description*
Federal	**U.S. Environmental Protection Agency (EPA)**
Title 40 Code of Federal Regulations (CFR) Part 50 (National Primary and Secondary Ambient Air Quality Standards)	National Ambient Air Quality Standards (NAAQS) are set in this part. NAAQS defines levels of air quality necessary to protect public health.
Title 40 CFR Part 51 (Requirements for Preparation Adoption and Submittal of Implementation Plans)	Requires emission reporting and control strategies for the attainment and maintenance of national standards.
Title 40 CFR Part 52 (Approval and Promulgation of Implementation Plans)	Prevention of Significant Deterioration (PSD) requires review and facility permitting for construction of new or modified major stationary sources of pollutants at locations where ambient concentrations attain the NAAQS. The NSCAPCD does not require PSD provisions for the addition of the emergency wet-down diesel-fueled engine as emissions would not exceed levels of significance.
Title 40 CFR Part 60, Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines)	Outlines requirements for stationary diesel-fueled engines. The proposed stationary emergency diesel-fueled engine is a certified Tier 4 engine. Compliance is expected.
Title 40 CFR Part 63, Subpart ZZZZ (National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines)	Establishes National Emission Standards for Hazardous Air Pollutants (NESHAPS) for both major and area sources of Hazardous Air Pollutants (HAPs) emissions. Establishes emission and operating limitations for applicable internal combustion engines. Compliance with Part 60, Subpart IIII satisfies Part 63 Subpart ZZZZ requirements.
State	**California Air Resources Board and Energy Commission**
California Health & Safety Code (H&SC) §41700 (Nuisance Regulation)	Prohibits discharge of such quantities of air contaminants that cause injury, detriment, nuisance, or annoyance.

Applicable Law	*Description*
H&SC §40910-40930 (District Plans to Attain State Ambient Air Quality Standards)	State Ambient Air Quality Standards should be achieved and maintained. The permitting of the source needs to be consistent with the approved clean air plan. The NSCAPCD New Source Review (NSR) program needs to be consistent with regional air quality management plans.
Title 17 CCR, §93115 Airborne Toxic Control Measure for Stationary Compression Ignition Engines.	The Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines limits fuels, establishes maximum emission rates, and establishes recordkeeping requirements for stationary compression ignition engines. Diesel-fueled emergency engines are subject to the regulations.
Local	**Northern Sonoma County Air Pollution Control District**
Regulation I Chapter 1 General Provisions	Rule 100 series— General provisions establishing the NSCAPCD ability to adopt and enforce rules and regulations that achieve and maintain state and federal AAQS.
Regulation I Chapter 2 Permits Rule 200	Permit Requirements— Establishes requirements for obtaining permits for stationary sources with the potential to be the source of air contaminants. The NSCAPCD issued an ATC for the emergency diesel-fueled engine. The NSCAPCD will issue a PTO once the diesel-fueled engine is installed and ready to operate.
Regulation I Chapter 2 Permits Rule 220	New Source Review Standards (Including PSD Evaluations)— General provisions from reviewing new and modified stationary sources. The emergency engine was evaluated for compliance with NSCAPCD NSR requirements.
Regulation I Chapter 2 Permits Rule 225	Toxics Review Standards (Including PSD Evaluations)— Provides a framework for the review of toxic or hazardous emission from stationary sources of air pollution. Diesel exhaust is classified as a toxic air contaminant in California. The facility will comply with the ATCM through installation of Tier 4 diesel-fueled engine and operating restrictions.
Regulation I Chapter 4 Prohibitions Rule 400(a)	General Limitations— Establishes public nuisance prohibitions. The discharge of air contaminants or other material which could detrimentally impact the public are not permitted. Nuisance problems are not expected. NSCAPCD reported the diesel-fueled engine has the potential to create a public nuisance due to the odorous nature of diesel emissions. However, diesel-fueled engine operation will be limited and the source is remotely located.
Regulation I Chapter 4 Prohibitions Rule 410	Visible Emissions— Prohibits the discharge of visible emissions to no greater than a Ringelmann 2 for a period or periods aggregating more than 3 minutes in any one hour. The operation will have conditions to ensure compliance.

Applicable Law	*Description*
Regulation I Chapter 4 Prohibitions Rule 420(a)	Particulate Matter— Specifies standards for particulate matter emission rates for general combustion sources. The requirements specify 0.46 grams of particulate matter per standard cubic meter (0.20 grains per standard cubic foot) of exhaust gas calculated to 12 percent carbon dioxide. The diesel-fueled engine is not expected to exceed the grain loading standard.
Regulation I Chapter 4 Prohibitions Rule 430	Fugitive Dust Emissions— Specifies requirements for controlling fugitive dust. The provisions apply to handling, transporting or open storage of material that allow particulate matter to become airborne. Significant fugitive dust emissions are not expected from the emergency diesel-fueled engine. Facility operations are already required to comply with these requirements. The area around the power plant has been paved to minimize dust from vehicular activity.
Regulation I Chapter 4 Prohibitions Rule 440	Sulfur Oxide Emissions— Limits the emissions of sulfur oxides calculated as sulfur dioxide to 1,000 ppm. Compliance with the fuel type limitation in the ATCM for stationary diesel-fueled engines will ensure the diesel-fueled engine is compliance.
Regulation I Chapter 4 Prohibitions Rule 455(a)	Geothermal Emission Standards— Limits the emissions of sulfur compounds calculated as sulfur dioxide to 1,000 ppm. The facility uses a continuous monitoring system to measure H_2S concentrations leaving the Stretford adsorber. The treated gas is less than 10 parts per million by volume (ppmv) H_2S. The gas is vented to the cooling tower. Source tests from the cooling tower indicate the H_2S concentrations released to the atmosphere are compliant.
Regulation I Chapter 4 Prohibitions Rule 455(b)	Geothermal Emission Standards— Limits emissions of hydrogen sulfide based on the facility. Lake View operations are subject to a H_2S emission limitation of 6.0 kilograms per hour (kg/hr). The license limits the plant H_2S emissions to 5.2 kg/hr. A monthly source test of the cooling tower verifies compliance.
Regulation V Chapters 1 - 6	Procedures For Issuing Permits to Operate For Sources—This regulation implements the requirements of Title V of the federal Clean Air Act. Additionally, Regulation 5 implements Phase II acid deposition control provisions of Title IV. Lake View operates under a Title V operating permit.

SETTING

Ambient Air Quality Standards

The U.S. EPA and the California Air Resources Board (ARB) have both established allowable maximum ambient concentrations of criteria air pollutants. Ambient air quality standards are designed to protect people who are most susceptible to respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other

disease or illness, and people engaged in strenuous work or exercise. The ambient air quality standards are also set to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

The California Ambient Air Quality Standards are typically lower (more stringent) than the federally established NAAQS. See **Air Quality Table 2.** The averaging time for the various ambient air quality standards (the duration of time the measurements are taken and averaged) ranges from one hour to one year. The standards are read as a concentration, in parts per million (ppm), parts per billion (ppb), or as a weighted mass of material per unit volume of air, in milligrams (mg) or micrograms (µg) of pollutant in a cubic meter (m^3) of ambient air, drawn over the applicable averaging period.

Air Quality Table 2
Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Standard	California Standard
Ozone (O_3)	8 Hour	0.070 ppm (137 µg/m^3)[a]	0.070 ppm (137 µg/m^3)
	1 Hour	—	0.09 ppm (180 µg/m^3)
Carbon Monoxide (CO)	8 Hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
	1 Hour	35 ppm (40 mg/m^3)	20 ppm (23 mg/m^3)
Nitrogen Dioxide (NO_2)	Annual	53 ppb (100 µg/m^3)	30 ppb (57 µg/m^3)
	1 Hour	100 ppb (188 µg/m^3)[b]	180 ppb (339 µg/m^3)
Sulfur Dioxide (SO_2)	24 Hour	—	0.04 ppm (105 µg/m^3)
	3 Hour	0.5 ppm (1300 µg/m^3)	—
	1 Hour	75 ppb (196 µg/m^3)[c]	0.25 ppm (655 µg/m^3)
Respirable Particulate Matter (PM10)	Annual	—	20 µg/m^3
	24 Hour	150 µg/m^3	50 µg/m^3
Fine Particulate Matter (PM2.5)	Annual	12 µg/m^3	12 µg/m^3
	24 Hour	35 µg/m^3 [b]	—
Sulfates (SO_4)	24 Hour	—	25 µg/m^3
Lead	30 Day Average	—	1.5 µg/m^3
	Rolling 3-Month Average	1.5 µg/m^3	—
Hydrogen Sulfide (H_2S)	1 Hour	—	0.03 ppm (42 µg/m^3)
Vinyl Chloride (chloroethene)	24 Hour	—	0.01 ppm (26 µg/m^3)
Visibility Reducing Particulates	8 Hour	—	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent.

Source: ARB 2019b, U.S. EPA 2019b
Notes: [a] Fourth- highest maximum 8 – hour concentration, averaged over 3 years.
[b] 98th percentile of daily maximum value, averaged over 3 years
[c] 99th percentile of daily maximum value, averaged over 3 years

Ambient Air Quality Attainment Status

Federal and state ambient air quality attainment status designations have been revised since the Energy Commission Decision. Lake View (Unit 17) is located within the North Coast Air Basin (NCAB). The NCAB comprises three air districts, the North Coast Unified Air Quality Management District, the Mendocino County Air Quality Management District, and the NSCAPCD.

Lake View (Unit 17) is located close to the border of the Sonoma County and Lake County in the Mayacamas Mountains, east of Black Oaks and North of Squaw Creek, in the Known Geothermal Resource Area (KGRA). The KGRA includes portions of the NSCAPCD and the Lake County Air Basin. A special air monitoring program referred to as the Geyser Air Monitoring Program (GAMP), monitors air quality in the residential communities adjacent to large scale geothermal operations. The program monitors hydrogen sulfide and other air contaminants to document long-term air quality trends in the KGRA. There are currently five operating air monitors in the GAMP program. The various monitors measure H_2S, PM10, and radon and provide meteorological data. The KGRA is considered in attainment or unclassified with all state and federal ambient air quality standards (AAQS).

For convenience, staff includes **Air Quality Table 3**, which summarizes the area's current attainment status for AAQS for the NSCAPCD.

Air Quality Table 3
NSCAPCD Attainment Status

Pollutants	Attainment Status	
	Federal Classification	**State Classification**
Ozone	Unclassified/Attainment	Attainment
CO	Unclassified/Attainment	Unclassified
NO_2	Unclassified/Attainment	Attainment
SO_2	Unclassified/Attainment	Attainment
PM10	Unclassified	Attainment
PM2.5	Unclassified/Attainment	Attainment
Lead	Unclassified/Attainment	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particulates	No Federal Standard	Unclassified

Source: ARB 2019a, U.S. EPA 2019a
Notes: *Geyser Geothermal portion of the NSCAPCD is classified as attainment for hydrogen sulfide. The remainder is considered unclassified.

ANALYSIS

Operation Summary and Emissions Analysis

The emergency standby wet-down pump diesel engine would provide emergency suppression water pumping for the Lake View (Unit 17) cooling tower in the event of a wildfire. The emergency diesel-fueled engine would be manually or remotely started to wet the cooling tower if a wildfire approaches the facility. The wet-down pump would be expected

to provide 24 hours or longer of wet-down capability in the case of an emergency, limited by diesel tank size. The emergency diesel-fueled engine would also be operated for maintenance and readiness testing.

The cooling tower wet-down system would keep normally wetted surfaces of the cooling tower structure wet when the cooling tower is not in operation. Wet-down systems are different from fire suppression systems. The wet-down system prevents the ignition of vulnerable surfaces while fire suppression systems are designed to suppress internal fires.

A stationary permit is required from the air district in order to operate the emergency wet-down diesel-fueled engine. The project owner submitted an application to the NSCAPCD and the NSCAPCD issued an ATC. The final Permit to Operate (PTO) is still pending. The final PTO will not be issued until the equipment has been installed and verified by the NSCAPCD.

The proposed diesel-fueled engine is typically referred to as an 'emergency fire pump'. However, GPC is proposing to operate this diesel-fueled engine for emergency purposes not classified as fire protection services. Fire pump engines classified for fire protection services are subject to additional National Fire Protection Association and California Building and Fire Code requirements. The ATCM for stationary diesel-fueled engines applies to emergency standby diesel-fueled engines. Applicable ATCM requirements were incorporated in the ATC issued by the NSCAPCD. Maintenance and readiness testing is limited to 50 hours per year for emergency diesel-fueled engines.

According to the revised petition, the proposed permanent stationary standby wet-down pump is driven by a skid-mounted, diesel-fueled engine. Fuel lines would not extend off the skid. Above ground piping would be utilized to connect the unit to the cooling tower wetting system header. Excavation for the skid and piping foundations would be on existing asphalt-covered, previously disturbed ground. Potential construction emissions from this scope of work are expected to be minimal and short term. Therefore, no significant construction emissions are expected form the installation of the proposed equipment.

Air Quality Table 4 includes the emission rates, and the estimated potential emissions for the maintenance and readiness testing of the proposed emergency diesel-fueled engine. The NSCAPCD evaluated and permitted the diesel-fueled engine to operate on a limited 50 hours per year for testing and maintenance purposes. The emissions rates for NOx, CO, VOC, and PM10 used to calculate the potential emissions are from the manufacturer's specification sheet for the proposed engine. The PM2.5 emission rate is conservatively assumed to be equivalent to the PM10 emission rate. The SOx emission rate is based on the use of ultra-low sulfur diesel. Staff calculated CO_2 and carbon dioxide equivalent (CO_2e) emissions using emission factors from the U.S. EPA greenhouse gas inventory and global warming potentials from the Intergovernmental Panel on Climate Change (IPCC). Staff included emissions for hourly and potential 24-hour operation scenarios for informational purposes. The NSCAPCD does not evaluate emergency diesel-fueled engines based on potential hours of operation during emergencies. However, staff also includes 500 hours of operation to demonstrate that operation of the small emergency diesel-fueled engine would not produce emissions over the levels of significance established in the NSCAPCD rules and regulations.

Air Quality Table 4
Lake View Unit 17 Estimated Diesel Engine Emissions

	NOx	CO	VOC	SOx	PM10/2.5	CO_2e [a]
Emission Rate (g/bhp-hr)	0.270	1.30	0.010	0.006	0.002	NA
Potential Hourly [b] (pounds/hour)	0.164	0.788	0.006	0.003	0.001	331
Potential 24-hour (pounds/hour)	3.93	18.92	0.15	0.08	0.03	7,938
Annual 50-hours (pounds/year)	8.18	39.41	0.30	0.17	0.06	16,539
Annual 50-hours (tons/year)	0.0041	0.0197	0.0002	0.0001	NS	8.269
Annual 500-hours (pounds/year)	81.8	394.1	3.0	1.7	0.6	165,365
Annual 500-hours (tons/year)	0.0409	0.1970	0.0015	0.0008	0.0003	82.682

Source: NSCAPCD 2019a, staff analysis

Notes: NA=Not Applicable, NS=Not Significant

[a.] Based on CO_2e emissions rates from the U.S. EPA emission factors for greenhouse gas inventories and global warming potentials from Table A-1 of 40 CFR Part 98, Subpart A: CO_2 = 73.96 kilograms per million British thermal units (kg/MmmBtu) and 1, CH_4 = 3.0 grams per million British thermal units (g/mmBtu) and 25, N_2O = 0.60 g/mmBtu and 298.

[b.] Potential maximum hour operation.

Significant emissions of hydrogen sulfide associated with the proposed emission units are not expected. Essentially all sulfur in the fuel is oxidized to SO_2.

The ATC issued by the NSCAPCD includes eleven conditions specific to the proposed emergency diesel-fueled engine and five general administrative conditions that limit operations to maintenance, testing, and emergency use. These conditions ensure operation would be compliant with LORS and the emissions from the emergency diesel-fueled engine would not cause a significant increase in criteria pollutants.

Administrative conditions specific to an ATC would not be included in the final PTO issued by the NSCAPCD. Therefore, these conditions would not be included in the air quality conditions of certification. Staff does not expect any other changes to these conditions in the final PTO issued by the NSCAPCD. The NSCAPCD indicated they would issue the final PTO for the emergency diesel-fueled engine after the engine is installed and operation of the equipment is verified. The U.S. EPA had authority over the PSD program when Lake View (Unit 17) was licensed. The NSCAPCD currently has delegated authority over the PSD requirements for Lake View (Unit 17). The addition of the emergency wet-down diesel-fueled engine does not trigger a PSD review. Requirements from the initial U.S. EPA PSD review remain on the Title V operating permit.

Staff is proposing to update the conditions of certification for consistency with changes incorporated into the NSCAPCD facility permits since the CEC originally licensed PG&E's Lake View project. The changes clarify Lake View (Unit 17)'s operational and reporting requirements. Lake View (Unit 17) operates under a federal Title V operating permit and separate NSCAPCD operating permits, PTO #79-23 and PTO #88-62. The NSCAPCD-

issued permits require detailed facility reporting requirements including the submittal of quarterly and annual reports. Staff reviewed the updated NSCAPCD permit operating limits and reporting requirements.

CEC staff is proposing to incorporate the quarterly and annual facility reporting requirements from the NSCAPCD permits. Minor differences in the CEC reporting requirements and NSCAPCD requirements would remain. For example, staff is proposing the project owner submit the proposed diesel-fueled engine operating hour logs to the CEC's compliance project manager (CPM) on an annual basis (logging the engine operating hours is already a NSCAPCD permit requirement). Staff is also requesting the inclusion of a statement of compliance pertaining to the conditions of certification, including staff conditions, in the annual periodic report to ensure Lake View (Unit 17) continues to operate in compliance with CEC requirements.

Staff-proposed changes would clarify the existing requirements for the project owner to summarize any interactions with the NSCAPCD relating to Lake View (Unit 17) in periodic reports and annually obtain a letter of compliance from the NSCAPCD. The Additional Proposed Condition Changes section includes additional detail on the proposed reporting requirements.

California Environmental Quality Act (CEQA) Mitigation

As documented in **Air Quality Table 3**, the NSCAPCD is in attainment or unclassified with the state and federal AAQS. CEC staff evaluated the proposed changes taking into consideration the attainment status and potential populations surrounding the facility. The staff-proposed conditions of certification would ensure potential direct and cumulative air quality impacts from the proposed facility modifications would be less than significant, including impacts to the environmental justice population. There are no air quality environmental justice issues related to the proposed facility modifications and no minority or low-income population would be significantly or adversely impacted.

Additional Conditions of Certification for the Engine

CEC staff is proposing the addition of several conditions of certification pertaining to the emergency standby wet-down pump diesel-fueled engine. Staff is proposing to denote these conditions of certification with an "E" following the section subset letter (see additional discussion of numbering in the Additional Proposed Condition Changes section below). The proposed emergency diesel-fueled engine conditions of certification with emission limitations are **AQ-AE1** through **AQ-AE4**. The proposed emergency diesel-fueled engine conditions of certification with operational limits and requirements are **AQ-BE1** through **AQ-BE5**. The proposed emergency diesel-fueled engine condition of certification containing monitoring, testing, and analysis requirements is **AQ-CE1**. The proposed emergency diesel-fueled engine condition of certification including recordkeeping provisions is **AQ-DE1**.

CEC staff is proposing to include an additional reporting provision for the proposed emergency diesel-fueled engine in Condition of Certification **AQ-E2**. The NSCAPCD does not require the submittal of the records required in Condition of Certification **AQ-DE1** for the proposed emergency diesel-fueled engine. The NSCAPCD performs periodic inspections of

the facility and can inspect the records at those times. CEC staff does not have the same level of access to the proposed emergency diesel-fueled engine records. Staff is requesting the project owner report the hours the emergency diesel-fueled engine operates and type of operation as part of the annual reports. This would allow staff to verify that the emergency diesel-fueled engine operates for emergency purposes, as required, and not for other functions.

The proposed emergency diesel-fueled engine would be subject to the general requirements for the facility. The NSCAPCD has not yet incorporated the emergency diesel-fueled engine's requirements into the Title V operating permit. Staff is proposing to incorporate administrative and plant-wide requirements from the NSCAPCD Title V operating permit into the conditions of certification.

Additional Proposed Condition Changes

CEC staff is proposing additional facility-wide changes to update the air quality conditions of certification with current requirements to ensure the facility operates in compliance with all LORS. These changes include incorporating additional changes made to the NSCAPCD-issued operating permits over the years.

The NSCAPCD numbering for permit conditions does not match the CEC's numbering for the conditions of certification. In addition, the NSCAPCD's operating permits for the power plant and abatement equipment have different numbering systems from the Title V operating permit. Therefore, requirements that are included in multiple permits can have different numbers assigned. In order to provide clarity and to avoid confusion between the NSCAPCD numbering and CEC numbering, staff is proposing to re-order the air quality conditions of certification.

In its update to the Air Quality section of the existing PG&E Lake View Compliance Plan (starting at page 8), CEC staff is proposing the following condition subcategories: (A) Emission Limits, (B) Operational Limits and Requirements, (C) Monitoring, Testing, and Analysis, (D) Recordkeeping, (E) Reporting, (F) Plant-Wide Permit Conditions, and (G) Administrative Requirements, to organize the requirements for clarity and consistency with NSCAPCD permits. Staff is proposing to include the conditions of certification specific to the emergency diesel-fueled engine in a subsection of each category. This way, changes to the number of conditions specific to the power plant would not result in numbering changes for the conditions specific to the emergency diesel-fueled engine. Additionally, this approach provides clarity in determining the requirements for the separate equipment units.

Staff is proposing to add the glossary and equipment list included in the Title V operating permit at the beginning of the conditions of certification. The glossary clarifies the terms used in the conditions and are considered part of the requirements. Including the equipment list at the beginning of the permit clarifies the equipment subject to air quality requirements. Staff is proposing language outlining replacement requirements for equivalent equipment consistent with NSCAPCD permit language. Staff is proposing the addition of **AQ-SC4** requiring that the project owner maintain a current list of equipment.

Staff proposes to separate CEC staff-imposed requirements in a separate section identified as Staff Conditions consistent with current CEC practices. The Staff Condition section would include Conditions of Certification **AQ-SC1**, **AQ-SC2**, **AQ-SC3**, and **AQ-SC4**. These conditions along with the addition of a reporting requirement section would clarify ongoing CEC reporting and submittal requirements.

Proposed Condition of Certification **AQ-SC1** includes language requiring the project owner to provide the CEC with copies of all project permits issued and proposals for new project permits or existing project permit amendments. Condition of Certification **AQ-SC2** includes clarifications on submittals required to demonstrate compliance with the conditions of certification. Condition of Certification **AQ-SC2** specifies the project owner is required to submit specified reports to the CPM within the timeframes outlined in the conditions of certification.

Proposed Condition of Certification **AQ-SC3** clarifies the project owner is required to submit annual compliance reports as stated in the general provisions for the facility's compliance plan. The annual compliance report required in this section is separate from the annual compliance reports required by the NSCAPCD operating permits. The submittals required by the NSCAPCD include comprehensive reporting requirements to demonstrate compliance with the majority of the requirements. The project owner would need to demonstrate compliance with all air quality conditions of certification, including staff conditions, to satisfy the requirements of the CEC annual compliance report.

CEC staff is further proposing to update the Air Quality section of the PG&E Lake View Compliance Plan with condition language included in the Plant-Wide Permit Conditions section. Staff is proposing to update this language to match the language in the NSCAPCD Title V operating permit. The language in this section is general language for operations at the facility.

Staff is proposing to delete PG&E Lake View Compliance Plan, Condition of Certification **1-1** - a general condition clarifying the NSCAPCD perform duties they usually perform for facilities holding permits outside of CEC jurisdiction. The existing language in the verification is vague and does not adequately define project owner responsibilities, especially considering the subsequent amendments made to the reporting requirements in the NSCAPCD-issued operating permits. In addition, the Condition of Certification **1-2** verification requires the annual submittal of a letter of compliance from the NSCAPCD. The addition of the Staff Condition section and updated Reporting section would clarify the ongoing reporting requirements.

CEC staff is proposing to update Condition of Certification **1-2** with the current conditions in the NSCAPCD issued Title V permit. Condition of Certification **1-2** includes equipment requirements, emission limitations, operational requirements, and allows for the use of alternative equipment to meet emission requirements. Staff is proposing to update the language and move the separate requirements into the appropriate sections of the proposed condition format. In addition, Condition of Certification **1-2** subpart **1** includes temporary requirements for construction and beginning operations. Staff proposes to delete obsolete requirements.

Proposed Conditions of Certification **AQ-A1** through **A5** would replace the existing emission requirements in Condition of Certification **1-2**. Staff is proposing to replace Condition of Certification **1-2** subparts **3**, **4,** and **13** with proposed Conditions of Certification **AQ-A1** and **AQ-A3** to ensure compliance with NSCAPCD Rule 455(b). Proposed Condition of Certification **AQ-A2** would include requirements established by the PSD permit. Staff is proposing to replace emission requirements in Condition of Certification **1-2** subpart **49** with proposed Condition of Certification **AQ-A4** to ensure compliance with NSCAPCD Rule 455(a). Staff is proposing the addition of Condition of Certification **AQ-A5** to establish a particulate emission concentration for non-combustion sources, and to ensure compliance with NSCAPCD Rule 420(d). Lake View (Unit 17) is not expected to have particulate emissions with concentrations close to this limit. Compliance with the cooling tower particulate emission limit is determined through the monitoring, testing, and analysis requirements outlined in Condition of Certification **AQ-C4.** If compliance with the limit in Condition of Certification **AQ-A5** is of concern, the verification allows the NSCAPCD or CPM to request a source test to verify compliance. These requirements are already included in the NSCAPCD-issued permits.

Staff is proposing the addition of Conditions of Certification **AQ-B1, AQ-B2**, **AQ-B3,** and **AQ-B4** to update operational requirements for the abatement systems. These requirements are already included in NSCAPCD issued permits.

Staff is proposing the addition of Conditions of Certification **AQ-B5** through **AQ-B11** to include additional operational requirements. Proposed Condition of Certification **AQ-B5** would outline requirements for vent gas. The project owner would only be allowed to release untreated vent gas under upset/breakdown situations pursuant to NSCAPCD Regulation 1 Rule 540. Proposed Condition of Certification **AQ-B6** would outline the NSCAPCD fugitive dust requirements. Proposed Condition of Certification **AQ-B7** would establish procedures aimed at minimizing emissions from fugitive leaks. Proposed Condition of Certification **AQ-B6** would include procedures for obtaining approval for alternative compliance plans to replace the outdated requirement in Condition of Certification **1-2** subpart **13d** allowing for the proposal of alternate means of compliance prior to operation. The updated language in proposed Condition of Certification **AQ-B8** would include procedures for obtaining approval for alternative compliance plans and would allow the project owner flexibility in operation. Proposed Condition of Certification **AQ-B9** would require the project owner to maintain all equipment in good working order. In addition, Condition of Certification **AQ-B9** would require the project owner to operate the equipment in a manner to meet emission limits established in the license. Proposed Condition of Certification **AQ-B10** would require the project owner to maintain the cooling tower in good working order. In addition, the project owner would be required to conduct an integrity inspection of the cooling tower during each scheduled plant overhaul. These requirements are consistent with the NSCAPCD-issued permits.

Staff is proposing the addition of Condition of Certification **AQ-C1** through **AQ-C10** to establish monitoring, testing, and analysis requirements. Proposed Condition of Certification **AQ-C1** would include ongoing testing requirements for the cooling tower to verify compliance with the emission limits in Conditions of Certification **AQ-A1** and **AQ-A2**. Condition of Certification **AQ-C2** would establish requirements for the project owner to provide safe access for monitoring and testing. Proposed Condition of Certification **AQ-C3** includes

procedures for additional testing if requested by the NSCAPCD or CEC. Proposed Condition of Certification **AQ-C4** would establish ongoing testing requirements to verify compliance with the emission limits in Condition of Certification **AQ-A5.** Proposed Condition of Certification **AQ-C5** would establish ongoing testing frequency requirements to verify compliance with the emission limits in Condition of Certification **AQ-A1.** Proposed Condition of Certification **AQ-C6** establishes requirements for the project owner to provide safe access for monitoring and testing. These requirements are already included in the NSCAPCD issued permits. Proposed Condition of Certification **AQ-C7** would require NSCAPCD approval for the instruments used to test H_2S. Condition **AQ-C8** establishes requirements, including protocols, for the ongoing testing and monitoring of H_2S. Staff is proposing to replace the monitoring requirements in Condition of Certification **1-2** subpart **49** with updated monitoring requirements in Condition of Certification **AQ-C9**. Staff is proposing to replace the ambient air monitoring requirements in Condition of Certification **1-2** subpart **52** with updated requirements in proposed Condition of Certification **AQ-C10**. Subpart **52** includes ambient air monitoring provisions. Condition of Certification **AQ-C10** reflects current practices and allows the participation in GAMP to satisfy ambient air monitoring requirements. The provisions require the project owner to maintain and operate monitoring stations if the project owner chooses not to participate in GAMP. All monitoring, testing and analysis requirements are consistent with NSCAPCD issued permit requirements.

Staff is proposing the addition of Conditions of Certification **AQ-D1** through **AQ-D7** to outline clear recordkeeping requirements. Staff is proposing the addition of Conditions of Certification **AQ-E1** through **AQ-E3** to establish reporting requirements. As discussed above, staff is proposing an additional reporting requirement to be included in Condition of Certification **AQ-E1**. Staff is proposing to require the project owner to submit the emergency diesel-fueled engine operating hours, including the reason for use. The project owner is already required to maintain these records on site. The remaining requirements are consistent with NSCAPCD issue permits.

Staff is further proposing to update and replace language in the Air Quality section of the PG&E Lake View Compliance Plan with Condition of Certification **AQ-F1** to require compliance with the listed NSCAPCD rules and regulations. In addition, staff is proposing to consolidate administrative requirements into Conditions of Certification **AQ-G1** through **AQ-G11**.

CONCLUSIONS AND RECOMMENDATIONS

CEC staff recommends approving the addition of the proposed emergency diesel-fueled engine. Staff recommends the addition of eleven conditions specific to the emergency diesel-fueled engine:

1. Four conditions establishing emission limits, Conditions of Certification **AQ-AE1**, **AQ-AE2**, **AQ-AE3**, and **AQ-AE4**;

2. Five conditions establishing operational limits and requirements, Conditions of Certification **AQ-BE1**, **AQ-BE2**, **AQ-BE3**, **AQ-BE4**, and **AQ-BE5**;

3. One condition with monitoring, testing and analysis requirements, Condition of Certification **AQ-CE1**; and

4. One condition with recordkeeping provisions, Condition of Certification **AQ-DE1**.

In addition, staff recommends restructuring and updating the existing air quality conditions of certification in the Air Quality section of the PG&E Lake View Compliance Plan to meet current LORS. Staff proposes the addition of the requirements already included in the NSCAPCD operating permits. Staff proposes to group the conditions of certification into sections organized by equipment and type of requirement.

Staff also recommends replacing vague existing reporting language with more specific updated requirements. Staff is proposing to streamline periodic reporting requirements already required by the NSCAPCD with a few additional requirements. Staff is also proposing to clarify the existing language requiring the project owner to summarize any interaction with the NSCAPCD concerning Lake View and requiring to the project owner to obtain an annual letter of compliance from the NSCAPCD. The proposed requirements include:

1. Submitting the required quarterly and annual reports;

2. Submitting the proposed emergency diesel-fueled engine operating hours noting the reason for operation in the annual reports;

3. Submitting summaries of any notices of violation and associated report(s), and notice of complaints;

4. A demonstration of compliance with the conditions of certification in the annual compliance report; and

5. Submitting proposals for project modifications and permits issued.

The proposed updated air quality conditions of certification would include:

1. Four staff conditions of certification;

2. Nine conditions of certification with emission limits (five for the plant and abatement systems and four for the proposed engine);

3. Sixteen conditions of certification with operational limits and requirements (eleven for the plant and abatement systems and five for the proposed engine);

4. Eleven conditions of certification outlining monitoring, testing, and analysis (ten for the plant and abatement systems and one for the proposed engine);

5. Eight conditions of certification with recordkeeping requirements (seven for the plant and abatement systems and one for the proposed engine);

6. Three conditions of certification with reporting requirements;

7. One condition of certification with plant-wide requirements; and

8. Eleven conditions of certification with administrative requirements.

With the additional conditions requested by staff, the proposed changes will conform with the applicable LORS related to air quality and will not result in significant air quality impacts.

PROPOSED AND AMENDED CONDITIONS OF CERTIFICATION

The proposed conditions of certification include staff-recommended conditions of certification and the applicable NSCAPCD operating permit conditions. Staff conditions are additional conditions of certification recommended for the project modification. Staff recommended conditions of certification make up the '**AQ-SCx**' series of conditions. Staff recommends identifying conditions of certification pertaining to the emergency diesel-fueled engine as the '**AQ-E**' series.

Bold underline is used to indicate new language. ~~Strikethrough~~ is used to indicate deleted language. All changes are to the Air Quality section of the PG&E Lake View Compliance Plan, beginning on page 8.

Section 1: Air Quality **Conditions of Certification**

~~A. APPLICABLE LAWS, ORDINANCES, STANDARDS, AND PRACTICES~~

- ~~Northern Sonoma County Air Pollution Control District (NSCAPCD) Rules and Regulations, including but not limited to 400(a), 410(a), 420(d), 430 and 455 (a) and (b), 220 and 230 (new Source review), and 540 (upset/breakdown).~~
- ~~Clean Air Act and implementing federal regulations.~~
- ~~California Health and Safety Code, and implementing state regulations.~~

~~B. REQUIREMENTS~~

~~**1-1.** The NSCAPCD shall perform all duties and functions normally conducted by the APCD, including authority to issue a Permit to Operate, collect the permit fees, levy fines, order correction of operational or mechanical procedures or functions, and perform compliance tests. The established NSCAPCD appeal procedures shall apply for all contested NSCAPCD actions.~~

~~**Verification:** PGandE shall summarize in a periodic compliance report any interactions with the NSCAPCD concerning Unit 17. PGandE shall immediately inform the CEC and ARB in writing of formal filed with the NSCAPCD.~~

~~**1-2.** P GandE shall comply with the requirements specified in the Air Quality Findings, and Conclusions, contained in the Final Decision any formal for geysers Unit 17, dated September 30, 1979, specifically Findings, 3, 4, 13 – 13e, 26a, 49 – 49c, 52 – 52a, and 53, which are listed below.~~

~~Relevant Findings~~

~~3. At the time Unit 17 is scheduled to begin operation, the hydrogen sulfide (H_2S) emission limitation during normal power plant operation is expected to be 100 grams/gross MWhr (26.4 lb/hr) pursuant to Northern Sonoma County Air Pollution Control District (NSCAPCD) Rule 455(b).~~

~~4. Beginning January 1, 1985, Unit 17 is expected to be limited to Rule 455(b) to H_2S emissions of 50 grams/gross MWhr (13.9 lb/hr), subject to review by the NSCAPCD before January 1, 1984.~~

~~13. Since the Applicant was unable to provide sufficient data from Geysers Unit 15 on the partitioning efficiency of the surface condenser to allow the Commission to make a finding that Unit 17 will comply with NSCAPCD Rule 455(b), such a finding can be based on preliminary process design criteria and bench scale test data on a hydrogen peroxide/catalyst condensate treatment system which is expected to be capable of achieving the abatement needed to comply with the 100 grams/gross MWh limitation.~~

~~13a. The Applicant has agreed to provide the NSCAPCD and the Commission all testing data on the partitioning efficiency of the surface condenser at Unit 17. This data shall be submitted as soon as possible.~~

~~13b. The Applicant has provided preliminary process design criteria for an H_2O_2 Secondary treatment system capable of treating 35 percent of the total H_2S in the incoming steam.~~

~~13c. The Applicant has submitted a detailed description of its intended peroxide and air oxidation testing program at Unit 15 and also provided the current secondary abatement test program schedule. The Applicant shall submit to the NSCAPCD, the ARB, and the Commission staff quarterly reports providing the results of the Abatement Testing program described in the document entitled "Composite Schedule of The Secondary Abatement." The report shall include updates of the testing schedule made by the Applicant.~~

~~13d. Although Unit 17 may be licensed on the basis of a modified hydrogen peroxide/catalyst system, the Applicant may use other means to comply with Rule 455(b). The Applicant will submit, no later than two years prior to the scheduled commercial operation date of Unit 17, the conceptual design of the Secondary Abatement System, including data demonstrating that compliance with Rule 455(b) of the NSCAPCD can be achieved. Such data shall be submitted to the staff, the ARB, and the NSCAPCD. The Applicant may, not sooner than 30 days after submission of the data, proceed with construction of the proposed system unless otherwise notified by the Executive director within 30 days. In this event, the Commission shall hold a hearing within 10 days and issue a decision within 20 days of the hearing.~~

~~13e. PGandE approved-for-construction drawings or the Secondary Abatement System shall be submitted to the staff, the ARB, and NSCAPCD prior to the start of construction of the Secondary Abatement System. Applicant may proceed with the construction of this system unless otherwise notified by the Executive Director within 30 days. In the event or this notification, the Commission shall conduct a hearing within 10 days and issue a decision within 20 days of the hearing.~~

~~26a. In the event of any unscheduled plant outage at Unit 17 once it is operational, the Applicant shall immediately notify the steam supplier for Unit 17.~~

~~49. Since the concentration of H2S in the gas stream is in excess of 1,000 ppm, the following conditions are required in order to ensure compliance with NSCAPCD Rule 455(a):~~

~~a. The H_2S control system shall be operated to preclude the release of untreated off gases to the atmosphere or the cooling tower during normal power plant operation, plant start-up, and plant shutdown;~~

~~b. Until such time as a continuous emission compliance monitor (CEM) is installed, PGandE shall install and operate a computer based alarm system (CBSA) as follows:~~

~~1. PGandE shall install and have operational. Commencing as of unit start-up, a computer based system which monitors the following critical equipment on or about the Stretford facility and the secondary abatement:~~

~~(a) Posit on of the Stretford bypass valve,~~
~~(b) Circulation of the Stretford chemicals,~~
~~(c) Operation of oxidizer blowers, and~~
~~(d) Chemical feed pumps of secondary system.~~

~~2. The CBAS shall be operated during power plant operations, power plant start-up, and power plant shutting down procedures and shall detect alarm and log failures or operation of the above equipment or systems which could lead to 2 significant loss of abatement. Each time this CBAS system indicates a malfunction or other change in equipment operations, PGandE shall immediately commence: (1) an investigation to determine the cause of the alarm system tripping, (2) manual H2S concentration tests of the Stretford exhaust, and (3) any necessary corrective actions. All such investigation, testing, and corrective actions. All such investigation, testing, and corrective action shall be logged by the plant operator. The computer system shall be logged along with the actions taken. For purposes of this interim~~

requirement, the Air Pollution Control Officer deems this system a monitoring system under District Rule 540.

3. PGandE plant personnel shall inspect the operating Stretford and secondary abatement facilities no less than one per shift, checking for proper operation. Stretford solution chemistry and off gas H_2S concentration will be checked weekly when the system in in operation.

4. Computer system alarm logs and operator logs shall be prepared and maintained, recording all normal checks, abnormal or alarm conditions, responses, and corrective actions, and shall be available for inspection on site upon request.

5. Quarterly reports on the performance of the CBAS shall be submitted in writing to the Air Pollution Control Officer.

c. Until such time as a continuous emission compliance monitor (CEM) is installed, or in the event that the Control Officer determines upon PG&E's completion of the program requirements of subsection "e" below that approprate continuous emissions monitors are not available, PGandE shall conduct source testing no less than once every thirty (30) operating days to ensure compliance with Determination of Compliance (DOC) conditions. The testing procedures to determine compliance shall be submitted November 30, 1982, for District approval. A lof of such testing shall be maintained and made available to the district upon request.

d. A summary of CBAS or monitoring data and source test data shall be forwarded to the District every thirty days. This summary is subject to the requirements of Rule 455(c). the Air Pollution control Officer may consider reducing the frequency of this required reporting if he finds it to be warranted based on his review of monitoring data and operational records covering at least one calendar year.

e. On or before January 14, 1983, PGandE shall submit to the District for approval a proposal that outlines an "in-house" program which PGandE shall implement, upon receiving district approval, to develop appropriate continuous compliance H_2S monitoring devices to meet the requirements below. Upon approval, the program requirements shall become part of the terms and conditions of the DOC and the AFC. Within 30 days of receipt of the proposal, the Air Pollution Control Officer shall approve it or shall notify PGandE of deficiencies in the proposal which shall be corrected within 30 days after notice and the proposal resubmitted for Air Pollution Control Officer action:

1. H2S emissions shall be monitored by measuring the following parameters: (a) total process mas or volume flow rates, and (b) H_2S concentrations within those proposed streams.

2. The following process streams are to be sampled: (a) the treated gas outlet of the Stretford Unit; (b) the main condenser condensate prior to any secondary abatement chemical injection or the condensate upstream of the cooling tower after chemical injection; and (c) The cooling tower. It is allowed that item "c" can serve in lieu of "a" and "b" would have to be pursued as a means of overall unit compliance monitoring.

3. As a development goal the H_2S monitoring devices should strive for a relative accuracy of ±10 of full scale (as compared to a standard reference method or reference analysis acceptable to the district), an average weekly calibration drift of ±10 percent (assumes weekly calibrations averaged over a 30 day period), and provide measurements at least every 15 minutes. Monthly data capture should be 80 percent or better of the operational hours, and the monitor should not require more than 16 hours of maintenance per month. The Air Pollution Control Officer may for good cause change the specifications above.

4. Flow rate measuring devices must have accuracies of ±15 percent at 40 percent to 120 percent of total flow rate and calibrations must be performed as necessary and at least quarterly. The Air Pollution Control officer may for good cause change the specification above.

5. Quarterly written progress reports on the operation of the development program shall be submitted to the Air pollution Control Officer. All monitoring records and calibration information must be made readily accessible to district staff upon request.

6. The proposed program shall include a milestone schedule for CEM development.

7. The development and testing program must be completed within two years of its approval by the Air Pollution Control Officer.

f. Participation by PGandE in an approved cooperative continuous emission monitor development program may be deemed acceptable in place of Finding 49e above, provided the goals and requirements set forth are the same as those identified in 49e.1 through 49e.4, and a proposed program is submitted to the Air Pollution Control Officer on or before January 14, 1983. Within 30 days of receipt of a proposal, the Air Pollution Control Officer shall approve the program or shall notify PGandE of deficiencies which must be corrected prior to approval. Such a cooperative program must obtain NSCAPCD approval prior to being implemented. If PGandE elects to pursue a cooperative program pursuant to this provision and complies with the deadline to submit an appropriate program, the time for program completion may be extended by the Air Pollution Control Officer

by up to 60 days if made necessary by the time required for the preparation of final documents by the program participants.

g. Within 60 days after completion of the program described in 40.e or 49.f, PGandE shall submit a final report to the district on the availability of acceptable continuous monitors which satisfy criteria 49.e.1 through 49.e.4. Within 30 days of receipt of the report, the Control Officer shall determine whether or not such monitors are available and shall be installed at Unit 17.

h. Any dispute relative to this Finding 49 may be heard before the Hearing Board of the NSCAPCD.

52. Applicant shall operate an ambient H2S monitoring station at the location of SRI #4 for the first three years of plant operation unless an alternative method of ambient monitoring mutually agreed upon by the Applicant, the CEC, and the Northern Sonoma County AOCD is implemented, or monitoring at SRI #4 is performed by another party.

52a. The Applicant shall, at a location which has been approved by the APCD, undertake ambient monitoring for TSP and sulfates every (6) days for a 24 hour period. The Applicant shall commence such monitoring no later than three (3) months prior to commercial operation and should continue until six (6) months after commercial operation.

53. The Applicant has submitted information required for a Permit to Operate by NSCAPCD Rules to the NSCAPCD and the Commission. The Applicant, within 60 days of commercial operation, agrees to demonstrate that the applicable emissions limitations of NSCAPCD rules are being maintained during normal operations. Failure to completely and accurately make such demonstrations may be cause for Commission action to shut-down or curtail the operation of Unit 17 until remedial action can be taken after proper notice and public hearing."

"For the purposes of these Findings and Conclusions, "normal" operation is defined as the operation of the facility with all abatement equipment installed and operating to specifications enumerated herein."

Verification: PGandE shall annually obtain a letter from the NSCAPCD verifying PGandE's compliance with the conditions of the Findings and Conclusions on Air Quality. PGandE shall provide the CEC with a copy of this letter in the annual compliance report. In addition, PGandE shall provide the CEC with a copy of all quarterly reports and testing/monitoring summary reports submitted to the NSCAPCD concerning Unit 17.

~~**1-3.** PGandE shall obtain NSCAPCD and CEC written approval before using any equipment other than the Hydrogen Peroxide/catalyst and Stretford/surface condenser system in the CEC Decision to control H_2S emissions.~~

~~**Verification:** If requested, such drawings shall be submitted by PGandE to the CEC at least 30 days prior to commencing construction of system.~~

~~**1-4.** PGandE shall apply for a Permit to Operate in accordance with NSCAPCD rules and regulations.~~

~~**Verification:** PGandE shall submit a copy of the application for a Permit to Operate to the CEC within 90 days of submittal to NSCAPCD. PGandE shall submit a copy of the Permit to Operate to the CEC within 30 days of its receipt from the NSCAPCD.~~

GLOSSARY

Abatement Solution: Iron chelate or any other District-approved compound used to chemically treat hydrogen sulfide (H_2S) in the steam condensate.

ACP: Alternative Compliance Plan. A list of all parametric monitoring data to be collected and recorded as a means of determining compliance with the H_2S emission limits.

APCO: Air Pollution Control Officer

BACT: Best Available Control Technology

CAA: The federal Clean Air Act

CCM: Continuous Compliance Monitor

CCM Availability: Hours CCM is in operation divided by the hours the primary abatement system is in service.

CEQA: California Environmental Quality Act

CFR: The Code of Federal Regulations. 40 CFR, contains the implementing regulations for federal environmental statutes such as the Clean Air Act. Parts 50-99 of 40 CFR contain the requirements for air pollution programs.

Cold Startup: Starting the power plant from inactive status

District: The Northern Sonoma County Air Pollution Control District

U.S. EPA: The United States Environmental Protection Agency

Federally Enforceable, FE: All limitations and conditions which are enforceable by the Administrator of the EPA, including those requirements developed pursuant to 40 CFR Part 51, subpart I (NSR), Part 52.21 (PSD), Part 60, (NSPS), Part 61, (NESHAPs), Part 63 (HAP), and Part 72 (Permits Regulation, Acid Rain).

GPH: Gallons per hour

HAP: Hazardous Air Pollutant. Any pollutant listed pursuant to Section 112(b) of the Act. Also refers to the program mandated by Title I, Section 112, of the Act and implemented by both 40 CFR Part 63, and District Regulation 2, Rule 5.

Irregularity: Period of time a CCM monitor reading is not consistent with other verifiable data or information.

Low Flow: The flowrate below 10% of the required flowrate of the back-up caustic scrubber pumps.

Major Facility: A facility with potential emissions of regulated air pollutants greater than or equal to 100 tons per year, greater than or equal to 10 tons per year of any single hazardous air pollutant, and/or greater than or equal to 25 tons per year of any combination of hazardous air pollutants, or such lesser quantity as determined by the EPA administrator.

MW: Megawatts

N/A: Not Applicable

NESHAPs: National Emission Standards for Hazardous Air Pollutants contained in 40 CFR Part 61.

NSCAPCD: Northern Sonoma County Air Pollution Control District

NMHC: Non-methane Hydrocarbons

NSR: New Source Review. A federal program for preconstruction review and permitting of new and modified sources of air pollutants for which the District is classified "non-attainment". Mandated by Title I of the Clean Air Act and implemented by 40 CFR Parts 51 and 52 as well as District Regulation 1, Rule 220.

PM: Total Particulate Matter

PM10: Particulate matter with aerodynamic equivalent diameter of less than or equal to 10 microns.

Primary Pressure Gauges and Flowmeters: All pressure gauges and flow meters used for parametric compliance verification.

Prolonged Outage: The scheduled shutdown of a unit lasting longer than 1 week.

PSD: Prevention of Significant Deterioration. A federal program for permitting new and modified sources of air pollutants for which the District is classified "attainment" of the National Air Ambient Quality Standards. Mandated by Title I of the Act and implemented by both 40 CFR Part 52 and District Regulation 1, Rule 220.

SIP: State Implementation Plan. State and District programs and regulations approved by EPA and developed in order to attain the National Ambient Air Quality Standards. Mandated by Title I of the Act.

Standby Spare: A back-up piece of equipment available for use in the event the primary piece of equipment fails.

Sulfur Compounds: Any inorganic compound containing sulfur.

Sulfur Oxides calculated as Sulfur Dioxide: Oxides of sulfur normalized to the molecular weight of sulfur dioxide.

Title V: Title V of the federal Clean Air Act. Requires a federally enforceable operating permit program for major and certain other facilities.

TOG: Total Organic Gasses

TDS: Total Dissolved Solids

TRS: Total Reduced Sulfur

TSS: Total Suspended Solids

Unit of measure:	**ft3 = cubic feet**	**g = grams**	**gal = gallon**	**hr = hour**
	lb = pound	**in = inches**	**yr = year**	
	ppmv = parts per million volume		**scfm = standard cubic feet per minute**	
	psia = pounds per square inch absolute		**ml = milliliter**	

VEE: Visible Emissions Evaluation

EQUIPMENT DESCRIPTION

The equipment and capacities listed are based on information provided by the permit holder to the Northern Sonoma Air Pollution Control District (District or NSCAPCD). Routine maintenance, repair, or replacement with identical equivalent equipment that

does not result in an increase, or potential increase, in emissions of any air pollutant subject to District control does not require a permit modification with the District. Replacement equipment that is within 5% of the listed capacity shall be considered equivalent for the purposes of the District permit(s).

Pumps listed with a capacity range may be replaced with pumps within the listed range without notification to the District. Any replacement of pumps outside the listed range shall receive District approval prior to replacement.

Geothermal Power Plant, Lake View (Unit 17) Consisting of:

Power Plant	
Description	**Nominal Capacity**
S1: Steam Turbine	**1,968,900 lb steam/hr maximum plant gross steam flow**
S2: Generator	**119.95 MW gross nameplate capacity**
S3: Surface Condenser with Two Steam Operated Three-Stage Gas Ejector Systems	**1,750,000,000 British thermal units per hour (Btu/hr)**
S4: Cooling Tower, Cross-Flow Mechanical Draft Type with 0.002% rated drift eliminators with 11 fans	**165,000 GPM, Fans 200 hp each**
Hydrogen Sulfide Control System	
Description	**Nominal Capacity**
Stretford Air Pollution Control System consisting of:	**476 lb/hr H_2S**
Three Venturi Scrubbers	**1,200 gallons per minute (gpm) each**
H_2S Absorber, 5' 6" diameter (D) x 38' height (H)	**560 gpm**
Three Oxidizer Tanks, 19" D x 20' H, with four Oxidizer Air Blowers each 100 HP	**790 SCFM air per blower**
Reaction Tank, 19" D x 20' H	**42,000 gallon**
Balance Tank, 24' D x 18' H	**60,000 gallon**
Froth Tank, 12' D x 12' H	**15,000 gallon**
Caustic Tank, 12' D x 12' H	**10,000 gallon**
Condensate Tank, 4' D x 5' H	**450 gallon**
Heat Exchangers consisting of:	
Stretford Heater	**3.0 million British thermal units per hour (mmBtu/hr)**
Stretford Cooling Tower, 0.002% drift	**5.6 mmBtu/hr**
Auxiliary Stretford Heater	
Main Pumps consisting of:	
Four Stretford Circulating Pumps	**1,560 gpm each**
Two Stretford Cooler Circulating Pumps	**1,100 gpm each**

Two Air Operated Diaphram Sulfur Slurry Pumps	200 gpm each
Make up Sump Pump	110 gpm each
Two Sulfur Cake Wash Pumps	150 gpm each
Caustic Additive Pump	15-100 gpm each
Stretford Treated Gas Analyzer and Alarm System	
Sulfur Filter Press	
Circulating Water H_2S Abatement Solution Injection (For H_2S Control) System consisting of:	
Abatement Solution Storage Tank	6,000 gallon
One Abatement Solution Feed Pump and One Spare Pump	0-100 gph range
Mass Flow Meter and Flow Alarm	
Three Storage Tanks	20,500 gallons
Two Transfer Pumps	5 hp
Mercury Removal System consisting of:	
Vapor Liquid Separator Assembly	
Mercury Adsorption Vessel	
Emergency Engine	
Description	**Nominal Capacity**
S5: Emergency Standby Wet-Down Pump Diesel Drive Engine, Perkins Model 1206-E70TTA 3924-2200 (Tier 4, Manufactured 2019)	275 HP

STAFF CONDITIONS

AQ-SC1 The project owner shall provide the compliance project manager (CPM) copies of any Northern Sonoma County Air Pollution Control District (NSCAPCD or District) issued project air permit for the facility. The project owner shall submit any request or application for a new project air permit or project air permit modification to the CPM.

Verification: The project owner shall submit any request or application for a new project air permit or project air permit modification to the CPM at the time of its submittal to the permitting agency. The project owner shall provide the CPM a copy of all issued air permits, including all modified air permits, to the CPM within 30 days of finalization.

AQ-SC2 The project owner shall provide the CPM with copies or summaries of the quarterly and annual reports submitted to the District, U.S. EPA, or ARB. The project owner shall submit to the CPM in the required quarterly reports a summary of any notices of violation and reports, and complaints relating to the project.

Verification: The project owner shall provide the reports to the CPM within the timeframes required in the conditions of certification.

AQ-SC3 The project owner shall provide the CPM with an Annual Compliance Report demonstrating compliance with all the conditions of certification as required in the General Provisions of the Compliance Plan for the facility.

Verification: The project owner shall provide the Annual Compliance Report to the CPM within 45 calendar days after the end of the reporting period or a later date as approved by the CPM.

AQ-SC4 The project owner shall maintain a current equipment list for the facility.

Verification: The project owner shall provide the CPM with the equipment list upon request.

PERMIT CONDITIONS:

A. EMISSION LIMITS

Power Plant and Abatement Systems

AQ-A1 The Lake View (Unit 17) power plant and associated abatement systems shall comply with Regulation 1 Rule 455(b) – Geothermal Emission Standards. Total emissions of hydrogen sulfide (H_2S) shall not exceed 6.0 kilograms averaged over any one-hour period unless operating under a District-approved Alternative Compliance Plan (ACP) in accordance with note 8 or Regulation 1 Rule 455(b). Total H_2S emissions shall be the cumulative emissions to the atmosphere from the power plant and associated abatement equipment. [ref. Rule 455(b), PTO 79-23 Cond. 16.A]

Verification: The project owner shall verify compliance by conducting a monthly source test on the cooling tower as indicated in AQ-C1, weekly determinations of the H_2S content in the main steam supply as required in AQ-C6, or as required in an approved Alternative Compliance Plan.

AQ-A2 The project owner shall not discharge or cause the discharge into the atmosphere of more than a total of 12 kilograms/hour of H_2S from Lake View (Geysers Unit 17). [ref. PSD NC 79-01 Cond. VIII.A.]

Verification: The project owner shall verify compliance by conducting an annual performance test on the turbine exhaust system to determine the H_2S emission rate as required in AQ-C1.

AQ-A3 The exit concentration in the process piping leading from the Stretford system shall not exceed 135 ppmv H_2S, averaged over any consecutive 60-

minute period, unless operating under a District-approved Alternative Compliance Plan (ACP). [ref. PTO 79-23 Cond. 16.B.]

Verification: The project owner shall verify compliance by operating a continuous compliance monitor as required in AQ-C9.

AQ-A4 The project owner shall comply with Regulation 1 Rule 455 (a)-Geothermal Emission Standards; no person shall discharge into the atmosphere from any geothermal operation sulfur compounds, calculated as sulfur dioxide, in excess of 1,000 ppmv. [ref. Rule 455(a)]

Verification: The project owner shall verify compliance by adhering to all monitoring and testing requirements.

AQ-A5 The project owner shall operate the power plant and associated abatement systems in compliance with Regulation 1 Rule 420 (d) Non-Combustion Sources- Particulate Matter; no person shall discharge particulate matter into the atmosphere from a non-combustion source in excess of 0.2 grains per cubic foot of exhaust gas or in total quantities in excess of the amount shown in Table I. (40 lb/hr) whichever is the more restrictive condition. [ref. Rule 420(d)]

Verification: The project owner shall verify compliance according to AQ-C4. The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

Emergency Engine

AQ-AE1 Visible particulate emissions shall not exceed an opacity as to obscure an observer's view to a degree equal to or greater than Ringelmann 2.0 or 40 percent opacity for a period or periods exceeding 3 minutes in any one hour.

Verification: The project owner shall perform a Visible Emissions Evaluation to determine compliance as requested by the NSCAPCD or CPM. The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-AE2 Particulate emissions shall not exceed an emission rate of 0.002 g/bhp-hr.

Verification: The project owner shall verify compliance according to Condition AQ-CE1. The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-AE3 Combined non-methane hydrocarbons and nitrogen oxide emissions shall not exceed an emission rate of 0.28 g/bhp-hr.

Verification: The project owner shall perform a source test to verify compliance with the emission rate upon request of the District or CPM. The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-AE4 Carbon monoxide emissions shall not exceed an emission rate of 1.3 g/bhp-hr.

Verification: The project owner shall perform a source test to verify compliance with the emission rate upon request of the District or CPM. The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

B. OPERATIONAL LIMITS AND REQUIREMENTS

Power Plant and Abatement Systems

AQ-B1 The project owner shall not operate the plant unless emissions are vented to the Stretford Air Pollution Control System. The condensate H_2S abatement chemical feed system and the Stretford abatement system shall be kept in good working order and operated as necessary in order to limit H_2S and particulate emissions on a continuous basis from the power plant as specified in conditions AQ-A1, AQ-A2, AQ-A3, AQ-A4, and AQ-A5. [ref. Rule 240.d, PTO 88-62 Cond. 18]

Verification: The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-B2 The abatement solution storage tank shall have a minimum of 1,000 gallons of abatement solution at all times when the plant is in operation. All continuously operated abatement solution feed pumps shall have a standby spare available, a readily accessible flowmeter readable in appropriate units and equipped with alarms signaling no or low flow. Flowmeter accuracy shall be plus or minus 10% of flow. [ref. PTO 88-62 Cond. 18]

Verification: The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-B3 Except for justifiable reasons during performance testing or under operation of an ACP, for which the project owner has received prior District written approval, the circulating water shall be kept to the following specification: Circulating water iron chelate concentration shall be maintained at or above the ppmw concentration recommended in the power plant operating guidelines as necessary to abate H_2S emissions from the power plant to the emission limit specified in Condition AQ-A1. [ref. PTO 88-62 Cond. 19]

Verification: The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-B4 All the abatement systems shall be properly winterized and maintained to ensure proper and reliable functioning. All primary pressure gauges and flow meters associated with abatement equipment shall be readily identified, maintained in good operating condition and calibrated on a quarterly basis. Alarm systems associated with abatement equipment shall be tested on a quarterly basis. Calibration and maintenance shall be performed according to manufacturer's recommendations or per the project owner's maintenance schedule as needed to maintain the equipment in good working order. [ref. PTO 79-23 Cond. 14]

Verification: The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-B5 Untreated vent gas shall be directed through the vent to the atmosphere only during upset/breakdown situations pursuant to Regulation 1 Rule 540. During periods of cold startups, the vent gas H_2S treatment system shall be operated as necessary to preclude the release of untreated vent gases to the atmosphere above the permitted emission limits specified in Conditions AQ-A1 and AQ-A4. [ref. PTO 79-23 Cond. 15]

Verification: The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-B6 All areas in the immediate vicinity and under the project owner's responsibility shall be properly treated to control fugitive dust. [ref. PTO 79-23 Cond. 17]

Verification: The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-B7 Fugitive Leaks

A. Non-condensable gas leaks: Valves, flanges, seals on pumps and compressors, piping and duct systems shall be inspected, maintained and repaired to prevent the emission of non-condensable gases to the atmosphere. Valves, flanges and seals shall be tightened, adjusted, or have gasket material added using the best modern practices for the purpose of stopping or reducing leakage to the atmosphere.

Non-condensable gas leaks shall not (i) exceed (as measured within 1 cm of such leak) 1,000 ppmv H_2S nor 10,000 ppmv methane nor (ii) exceed emission limits of Rule 455. Such leaks shall be repaired within 24 hours, unless the leak is from essential equipment. If the leak is from essential equipment, the leak must be minimized within 24 hours using best modern practices and eliminated at the next prolonged outage of the process unit unless an extension is approved by the APCO.

Essential Equipment is defined as equipment which cannot be taken out of service without shutting down the process unit which it serves.

Leak Minimization is defined as the tightening, adjusting, or addition of packing material which surrounds the leak, or the replacement of the valve or flange for the purpose of stopping or reducing leakage to the atmosphere, using best modern practices.

B. Steam and Condensate leaks: Valves, flanges, seals on pumps and compressors, piping and duct systems shall be inspected, maintained and repaired to prevent the emission of steam and condensate to the atmosphere. Valves, flanges and seals shall be tightened, adjusted, or have gasket material added using the best modern practices for the purpose of stopping or reducing leakage to the atmosphere. Valves, flanges, drip legs, threaded fittings and seals on pipelines shall be maintained to prevent or reduce the emission of steam and condensate to the atmosphere as noted below:

Liquid leak rate in pressurized steam and condensate lines shall not exceed 20 ml in 3 minutes. Liquid leak rates in excess of 20 ml in 3 minutes shall be repaired within 15 calendar days, excepting those leaks from essential equipment. If the leak is from essential equipment, the leak must be minimized within 15 days using best modern practices and eliminated at the next prolonged outage of the process unit unless an extension is approved by the APCO.

Essential Equipment is defined as equipment which cannot be taken out of service without shutting down the process unit which it serves.

Leak Minimization is defined as the tightening, adjusting, or addition of packing material which surrounds the leak, or the replacement of the valve or flange for the purpose of stopping or reducing leakage to the atmosphere, using best modern practices.

The project owner shall check the power plant for fugitive leaks at least once per quarter. [ref. PTO 79-23 Cond. 17]

Verification: The project owner shall keep records according to Condition AQ-D5. The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-B8 Alternative Compliance Plan

A. **The project owner may propose an Alternative Compliance Plan (ACP) which allows for operating flexibility of the power plant while maintaining compliance with all applicable emission limits of Condition AQ-A5. The ACP shall list operating parameters such as power output (MW) and abatement solution concentration levels which shall be met in order to meet all applicable emission limits listed above. The ACP shall be submitted to the APCO for approval. The APCO shall approve, disapprove or modify the plan within 30 days of receipt of the ACP. An APCO-approved ACP shall consist of all parametric operating guidelines which shall be used to determine compliance with Condition AQ-A5. The ACP shall list the specific operating conditions the ACP will supersede.**

B. **The project owner may propose an Alternative Compliance Plan (ACP) which allows for operating flexibility of the power plant while maintaining compliance with all applicable emission limits of Conditions AQ-A1, AQ-A3, and AQ-A4. The ACP shall list operating parameters such as power output (MW) and abatement solution concentration levels which shall be met in order to meet all applicable emission limits listed above. The ACP shall be submitted to the APCO for approval. The APCO shall approve, disapprove or modify the plan within 30 days of receipt of the ACP. An APCO approved ACP shall consist of all parametric operating guidelines which shall be used to determine compliance with Conditions AQ-A1, AQ-A3, and AQ-A4. The ACP shall list the specific operating conditions the ACP will supersede.**

Verification: The project owner shall submit any ACP to the CPM for review at the time it is submitted to the District. The project owner shall submit the District's approval, disapproval or plan modification to the CPM in the quarterly report.

AQ-B9 All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this license shall at all times be maintained in good working order. The equipment shall be operated in a manner necessary to meet all emission limits of the permit. [Ref. Rule 240(d)]

Verification: The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-B10 The cooling tower shall be maintained in good operating condition. The project owner shall conduct an integrity inspection of the cooling tower

during each scheduled plant overhaul and carry out any repairs necessary to correct all deficiencies encountered. [ref. Rule 240(d)]

Verification: The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-B11 The control technology utilized at Lake View (Unit 17) to achieve compliance with the H_2S emission limitation specified in Condition AQ-A2 shall include a surface condenser/Stretford process system. [ref. PSD NC 79-01 Cond. VIII.B.]

Verification: The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

Emergency Engine

AQ-BE1 S-5, emergency standby wet-down pump diesel drive engine, shall only be used because of a failure or loss of all or part of normal electrical power service, except for testing and maintenance as defined in CA HSC 93115.4 (30).

Verification: The project owner shall maintain records according to Condition AQ-DE1. The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-BE2 S-5, emergency standby wet-down pump diesel drive engine, shall be equipped with a non-resettable hour counting meter to indicate the number of hours the engine is operated.

Verification: The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-BE3 S-5, emergency standby wet-down pump diesel drive engine, shall be operated exclusively on California Air Resources Board (CARB) Diesel Fuel.

Verification: The project owner shall maintain records according to Condition AQ-DE1. The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-BE4 S-5, emergency standby wet-down pump diesel drive engine, shall be operated according to manufacturer specifications.

Verification: The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-BE5 Total operating hours used for testing and maintenance of S-5, emergency standby wet-down pump diesel drive engine, shall not exceed 50 hours in any consecutive 12-month period. The total hours of operation do not include use during emergencies.

Verification: The project owner shall maintain records according to Condition AQ-DE1. The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

C. MONITORING, TESTING, AND ANALYSIS

Power Plant and Abatement Systems

AQ-C1 The project owner shall, on a monthly basis, conduct a source test of the cooling tower to determine the H_2S emission rate to verify compliance with condition AQ-A1. District Method 102 shall be utilized to determine the H_2S emission rate. The permit holder may propose an Alternative Compliance Plan (ACP) which allows for operating flexibility of the power plant, including periods when accessing the cooling tower is not possible, while maintaining compliance with all applicable emission limits of condition AQ-A1. The ACP shall list operating parameters such as power output (MW), target pH, abatement solution concentration levels, and burner/scrubber exit concentrations which shall be met in order to meet all applicable emission limits listed above. The ACP shall be submitted to the APCO for approval. The APCO shall approve, disapprove or modify the plan within 30 days of receipt of the ACP. An APCO-approved ACP shall consist of all parametric operating guidelines which shall be used to determine compliance with condition AQ-A1. The ACP shall list the specific operating conditions the ACP will supersede. [ref. PTO 88-62 Cond. 22.]

The project owner shall, on an annual basis, conduct a source test of the cooling tower to determine the H_2S emission rate to verify compliance with condition AQ-A2. District Method 102 shall be utilized to determine the H_2S emission rate. [ref. PSD NC 79-01 Cond. VIII.C.]

Verification: The project owner shall submit source test results according to Condition AQ-E1. The project owner shall submit any ACP to the CPM for review. The project owner shall submit the District's approval, disapproval or modification of an ACP to the CPM in the following quarterly report.

AQ-C2 The project owner shall provide platforms, electrical power, and safe access to sampling ports to enable representatives of the District, and ARB to collect samples from the main steam supply, treated and untreated

condensate, circulating water upstream of the cooling tower, cooling tower stacks, untreated and treated non-condensable gas stream to and from the Stretford abatement facility, any off gas bypass vents to the atmosphere and any Stretford tanks or evaporative coolers. [ref. PTO 79-23 Cond.11.]

Verification: The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-C3 The project owner, as requested by the Air Pollution Control Officer or CPM, shall conduct a requestor-approved performance test for particulate matter (PM), H_2S, other species (i.e. benzene, mercury, arsenic, TRS, mercaptans, radon, other nitrogen compounds (amines) and compounds listed under NESHAPS and/or AB2588) from the power plant evaporative cooling tower and/or the Stretford evaporative cooling tower. Upon written request, the project owner shall submit to the requestor at least 45 days prior to testing a detailed performance test plan. The requestor shall approve, disapprove or modify the plan within 45 days of receipt of the plan. The project owner shall incorporate the requestor's comments or modifications to the plan which are required to assure compliance with the requestor's regulations. The Air Pollution Control Officer and CPM shall be notified 15 days prior to the test date in order to arrange for an observer to be present for the test. The test results shall be provided to the District and CPM within 45 days of the test date unless a different submittal schedule is approved in advance. [ref. PTO 88-62 Cond. 9 and 10]

Verification: The project owner shall conduct performance tests as requested by the Air Pollution Control Officer or CPM. The project owner shall submit results to the CPM within 45 days if the test was requested by the CPM or in the quarterly reports according to Condition AQ-E1 if the test was requested by the Air Pollution Control Officer.

AQ-C4 Compliance with the particulate mass emission limitation shall be estimated using calculations based on the evaporative cooling tower manufacturers design drift eliminator drift rate, 0.002 percent for the main cooling tower, multiplied by the circulating water rate and, total dissolved solids (TDS) and total suspended solids (TSS). A circulating water sample shall be collected and analyzed for TDS and TSS on a monthly basis. [ref. PTO 88-62 Cond. 21]

Verification: The project owner shall maintain records according to Conditions AQ-D6 and AQ-D7 and submit reports as indicated in Condition AQ-E2.

AQ-C5 Main steam supply H_2S concentrations shall be determined minimally on a weekly basis and any additional times as required by the operating protocol or ACP. [ref. PTO 88-62 Cond. 19]

Verification: The project owner shall maintain records according to Conditions AQ-D6 and AQ-D7 and submit reports as indicated in Condition AQ-E1 and AQ-E2.

AQ-C6 The project owner shall perform an abatement solution concentration test of the cooling tower circulating water once per operating shift when abatement solution is necessary in order to achieve compliance with Condition AQ-A1. The testing equipment shall be kept calibrated per the manufacturer's specifications. [ref. PTO 88-62 Cond. 19]

Verification: The project owner shall maintain records according to Conditions AQ-D6 and AQ-D7 and submit reports as indicated in Conditions AQ-E1 and AQ-E2. The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-C7 Instruments used for the measurement of H_2S or total organic gases to satisfy District permit conditions or regulations shall receive District approval prior to use. Test plans shall be submitted for District approval of instruments used for the measurement of H_2S or Total Organic Gases to satisfy District permit conditions or regulations. [ref. Rule 240(d)]

Verification: The project owner shall submit any District approvals to the CPM in the quarterly reports. The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-C8 All sampling protocols, chemical feed charts, targets and operational guidelines for using said charts and targets, necessary to abate H_2S emissions from the power plant to the emission limits specified in Conditions AQ-A1 and AQ-A2 must be developed using good engineering judgment and supporting data. The APCO or CPM may review such sampling protocols, chemical feed charts, targets and guidelines upon request. If the APCO or CPM determines that any of the protocols, feed charts, targets, or guidelines are not sufficient to maintain compliance with Conditions AQ-A1 and AQ-A2, the APCO or CPM shall require the project owner to develop revised protocols, feed charts, targets and guidelines. [ref. Rule 240(d)]

Verification: The project owner shall submit any revised protocol, feed charts, targets and guidelines or summary to the CPM in the annual reports required by Condition AQ-E2. The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request. The CPM shall consult with the APCO and the project owner when developing revised protocols, feed charts, targets and guidelines.

AQ-C9 Continuous Compliance Monitoring (CCM)

The project owner shall operate a continuous compliance monitor capable of

measuring the concentrations of H_2S in the exhaust stream from the Stretford absorber in order to verify compliance with Conditions AQ-A1 and AQ-A3. The monitoring system must alarm the operator when H_2S in the treated gas is in excess of 135 ppmv. The project owner shall respond to the alarm with appropriate mitigation measures. Mitigation measures taken shall be logged in the power plant abatement log book. In the event H_2S concentrations are in excess of 135 ppmv and the range of the CCM is exceeded, the project owner shall test for H_2S using an approved alternative method (ex Draeger tester, wet chemical tests) once every hour during the excess. The monitor shall have a full range of at least 300 ppmv. The monitor shall meet the following operational specifications: an accuracy of plus or minus 10% of full scale, provide measurements at least every 3 minutes, provide a continuous strip chart record or a District-approved alternative, and provide monthly data capture of at least 90%. The District must be notified when the concentration of H_2S exceeds the hourly average limit of 135 ppmv.

A one-point calibration shall be performed at least once per week. A three-point calibration shall be performed at least once per quarter.

The APCO may allow modifications to the above specifications under an ACP upon written request with justification by the project owner as long as emissions from the power plant do not exceed the "total" H2S emission limitations of Condition AQ-A1. Written notification from the APCO must be received by the project owner prior to any change in monitoring specifications.

[ref. PTO 79-23 Cond. 19]

Verification: The project owner shall provide the District and CPM with a summary of the monitor's availability and any irregularities that occurred with the continuous monitor. The summary shall be provided to the CPM in the quarterly reports required by Condition AQ-E1.

AQ-C10 Ambient Air Monitoring

The project owner shall maintain and operate one H_2S/meteorological monitoring station, PM10 high volume station, at a location approved in advance by the Air Pollution Control Officer for the life of the facility. The project owner shall install and operate additional monitoring stations, such as a PM2.5 monitoring station, if required by the Air Pollution Control Officer, Energy Commission, California Air Resources Board, or U.S. EPA. Participation by the project owner in a joint air monitoring program, such as the Geysers Air Quality Monitoring Program (GAMP), shall be deemed to satisfy all ambient air quality monitoring requirements of this license provided the term of monitoring is equivalent. The Air Pollution Control

Officer can alter, suspend, or cancel this requirement provided no ambient air quality standard applicable to this facility is threatened or that sufficient other monitoring is available by the District, Lake County AQMD, or other third party. [ref. PTO 88-62 Cond. 22.]

Verification: If the project owner does not participate in GAMP, the project owner shall submit to the NSCAPCD, ARB, and CPM, for their review and approval, a detailed ambient monitoring plan.

Emergency Engine

AQ-CE1 At any time as specified by the Air Pollution Control Officer or CPM, the project owner shall conduct a requestor-approved source test to determine NOx and particulate emissions from the emergency standby wet-down pump diesel drive engine. The test results shall be provided to the District and CPM within 30 days of the test.

Verification: The project owner shall perform an approved source test upon request of the District or CPM. Test results shall be submitted to the District and CPM.

D. RECORDKEEPING

Power Plant and Abatement Systems

AQ-D1 All records and logs shall be retained for a period of at least 5 years from the date the record or log was made and shall be submitted to the NSCAPCD or CPM upon request.

Verification: The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-D2 The project owner shall maintain a weekly abatement solution and caustic inventory log available for on-site inspection. [ref. Rule 240(d)]

Verification: The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-D3 The project owner shall maintain a strip chart or other District-approved data recording device of H_2S readings measured by the CCM. All measurements, records, and data shall be maintained by the project owner for at least five (5) years. The project owner shall report all exceedances of Condition AQ-A3 in the quarterly report as required in AQ-E1. The report shall include a description of all measures taken to bring the Stretford system back into compliance with Condition AQ-A3. The project owner shall include in the report a copy of the output from the H_2S CCM or alternative District-approved

data during the upset condition. [ref. Rule 240(d)]

Verification: The project owner shall comply with all recordkeeping and reporting provisions. The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-D4 The project owner shall maintain copies of the source test results as required in Condition AQ-C1 for a minimum of 5 years. [ref. PTO 88-62 Cond. 22]

Verification: The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-D5 Fugitive Leak Records

A. Any non-condensable gas leak in excess of the limitations of Condition AQ-B7 which has been detected by the project owner and is awaiting repair shall be identified in a manner which is readily verifiable by a District or Energy Commission inspector. Any leak in the above listed pieces of equipment exceeding the limitations of Condition AQ-B7 and not identified by the project owner and which is found by the District shall constitute a violation of this license. The project owner shall maintain a current listing of such leaks awaiting repair and shall make this list available to the District and CPM upon request.

B. Any valve, flange, drip leg threaded fitting or seal on a pipeline, or condensate collection system with a leak in excess of the limitations of Condition AQ-B7, which has been detected by the project owner and is awaiting repair, shall be identified in a manner which is readily verifiable by a District or Energy Commission inspector. Any leak in the above listed pieces of equipment exceeding the limitations of Condition AQ-B7 and not identified by the project owner and which is found by the District shall constitute a violation of this license. The project owner shall maintain a current listing of such leaks awaiting repair and shall make this list available to the District and CPM upon request.

[ref. PTO 88-62 Cond. 20]

Verification: The project owner shall comply with all recordkeeping and reporting provisions. The project owner shall report all deviations to the CPM as required in Condition AQ-G4. The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request

AQ-D6 The project owner shall maintain records detailing:

a. **Any periods of significant abatement equipment malfunction, reasons for malfunctions, and corrective action.**
b. **The dates and hours in which the emission rates were in excess of the emission limitations specified in permit Conditions AQ-A2 and AQ-A5.**
c. **Fugitive steam and non-condensable gas emission source inspections, leak rates, repairs, and maintenance.**
d. **Total dissolved solids and total suspended solids in the circulating water.**

[ref. Rule 240 (d)]

Verification: The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-D7 The project owner shall maintain records detailing:

a. **Hours of operation**
b. **Types, concentrations, and amounts of chemicals used for Stretford absorbing solution and used for condensate treatment, including target levels for abatement solution concentration in the circulating water.**
c. **A summary of any irregularities that occurred with a continuous compliance monitor.**
d. **The dates and hours in which the emission rates were in excess of the emission limitations specified in permit Conditions AQ-A1, AQ-A3, and AQ-A4.**
e. **Periods of scheduled and unscheduled outages and the cause of the outages.**
f. **Time and date of all pump and flowmeter calibrations required by this permit.**
g. **Time and date of all alarm system tests.**
h. **Leaking equipment awaiting repair; time and date of detection and final repair.**

[ref. Rule 240(d)]

Verification: The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

Emergency Engine

AQ-DE1 In order to demonstrate compliance with the engine conditions, records shall be maintained in a District-approved log, shall be kept on site, and made available for District inspection for a period of 5 years from the date on which a record is made. The records shall include the following information summarized on a monthly basis:

a. **Total engine operating hours**
b. **Emergency use hours of operation**
c. **Maintenance and testing hours of operation.**

Verification: The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request. The project owner shall report hours of operation, identifying the reason for operation, to the CPM in the annual reports required by Condition AQ-E2.

E. REPORTING

AQ-E1 A quarterly report shall be submitted to the District which contains the following information:

a. **CCM availability for the given quarter.**
b. **Any periods of significant abatement equipment malfunction, reasons for malfunctions, and corrective action taken.**
c. **Time and date of any monitor indicating an hourly average exceedance of 10 ppmv of H_2S.**
d. **Source test results.**

The quarterly report shall be submitted to the District and CPM within 30 days of the end of each quarter. The reports are due by May 1, August 1, November 1 and February 1 for each corresponding quarter.

[ref. Rule 240(d)]

Verification: The project owner shall submit the quarterly reports to the CPM. The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-E2 An annual report shall be submitted to the District and CPM which contains the following information:

a. **Average mainsteam H_2S and ammonia concentrations.**
b. **Average total dissolved and suspended solids and average flowrate of the cooling tower water.**
c. **Annual ammonia emissions.**
d. **Gross megawatt hours generated.**
e. **Steaming rate, gross average (gross steam flow; lb/ gross MW).**
f. **Update to any changes in operating protocols used to determine plant chemical feed charts and targets; calibration and maintenance programs.**
g. **Total organic gasses emitted as methane.**
h. **Hours of plant operation.**
i. **Annual CO_2e emissions**

Additional requirement for reports submitted to the Energy Commission:

j. **Hours of operation for the emergency engine. The hours of operation shall be reported according to total use, emergency use, and maintenance and testing.**

The annual report shall be submitted to the District within 45 days of the end of each calendar year.

[ref. Rule 240(d)]

Verification: The project owner shall submit the annual reports to the CPM within 45 days of the end of each calendar year or another timeframe approved by the CPM. The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request.

AQ-E3 The project owner shall submit reports to the California Air Resources Board in accordance with the provisions of CCR Title 17, Division 3, Chapter 1, Subchapter 10, Article 2, Regulation for Mandatory Reporting of Greenhouse Gas Emissions.

Verification: The project owner shall provide a statement of compliance in the annual report regarding the submittal of greenhouse gas emissions reporting to the ARB. The greenhouse gas emissions report is not required to be submitted to the CPM in the periodic compliance reports. The project owner shall make the reports available to the CPM upon request.

F. PLANT-WIDE PERMIT CONDITIONS

AQ-F1 The project owner shall comply with the following District regulations. The text of the referenced regulations can be found in Appendix A of the Title V Operating Permit.

a. **Regulation 1 Rule 400-General Limitations**
b. **Regulation 1 Rule 410-Visible Emissions**
c. **Regulation 1 Rule 430-Fugitive Dust Emissions**
d. **Regulation 1 Rule 492 (40 CFR part 61 Subpart M)-Asbestos**
e. **Regulation 1 Rule 540-Equipment Breakdown**
f. **Regulation 2-Open Burning**
g. **If in the event this stationary source, as defined in 40 CFR part 68.3, becomes subject to part 68, the project owner shall submit a risk management plan (RMP) by the date specified in part 68.10. As specified in Parts 68, 70 and 71, the project owner shall certify compliance with the requirements of part 68 as part of the annual compliance certification required by 40 CFR part 70 or 71.**
h. **40 CFR Part 82-Chlorinated Fluorocarbons**

i. **If in the event the project owner, as defined in 40 CFR part 63, becomes subject to part 63, the project owner shall notify the District within 90 days of becoming subject to the regulation. The project owner shall identify all applicable requirements of part 63 and submit a plan for complying with all applicable requirements.**

Verification: The project owner shall make the site and records available for inspection by representatives of the District, ARB, U.S. EPA, and Energy Commission upon request. The project owner shall provide a statement of compliance in the annual compliance reports. The project owner shall report all breakdowns to the CPM as required in Condition AQ-G8.

G. ADMINISTRATIVE REQUIREMENTS

AQ-G1 Payment of Fees

The operating permits shall remain valid during the 5-year term as long as the annual renewal fees are paid in accordance with Regulation 1 Rule 300 and Rule 360 of the District. Failure to pay these fees will result in forfeiture of this permit. Operation without a permit subjects the source to potential enforcement action by the District and the EPA pursuant to section 502(a) of the Clean Air Act. [ref. Reg 5.670]

Verification: No verification needed.

AQ-G2 Right to Entry and Inspection

The Air Pollution Control Officer, the Chairman of the California Air Resources Board, the Regional Administrator of U.S. EPA, the CPM, and/or their authorized representatives, upon the presentation of credentials, shall be permitted:

a. **To enter the premises where the source is located or in which any records are required to be kept under the terms and conditions of the operating permits; and**
b. **At reasonable times to have access to and copy any records required to be kept under the terms and conditions of the operating permits; and**
c. **To inspect any equipment, operation, or method required in the operating permits; and**
d. **To sample emissions from the source.**

[NSCAPCD Rule 240.e and Reg. 5.610(e)]

Verification: The project owner shall make the site and records available for inspection by representatives of the District, ARB, and Energy Commission upon request.

AQ-G3 Compliance with Permit Conditions

The project owner shall submit a complete application for renewal of the Title V operating permit in accordance with the District deadlines. [ref. Reg 5.660]

The project owner shall comply with all conditions of the Title V operating permit. Any non-compliance with the terms and conditions of the Title V operating permit will constitute a violation of the law and may be grounds for enforcement action, including monetary civil penalties, permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. [ref. Reg 5.610(f)(3)]

In the event any enforcement action is brought as a result of a violation of any term or condition of the Title V operating permit, the fact that it would have been necessary for the project owner to halt or reduce the permitted activity in order to maintain compliance with such term or condition shall not be a defense to such enforcement action. [ref. Reg 5. 610(f)(4)]

The filing of a request by the facility for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated non-compliance does not stay the applicability of any permit condition. [ref. Reg 5. 610(f)(5)]

The Title V operating permit does not convey any property rights of any sort, nor any exclusive privilege. [ref. Reg 5. 610(f)(2)]

The project owner shall supply in writing within 30 days any information that the District requests to determine whether cause exists, per Regulation 5.570, for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. [ref. Reg 1, Rule 200, Reg 5.430]

Verification: The project owner shall make the site and records available for inspection by representatives of the District, ARB, and Energy Commission upon request.

AQ-G4 Reporting

All deviations from permit requirements, including those attributable to upset conditions (as defined in the permit) must be reported to the District and CPM at least once every six months. For emissions of a hazardous air pollutant (HAP) or a toxic air pollutant (as identified in an applicable regulation) that continue for more than an hour in excess of the permit requirements, the report must be made within 24 hours of the occurrence. For emissions of any regulated air pollutant, excluding those HAP emission requirements listed above, that continue for more than two hours in excess of permit requirements, the report must be made within 48 hours. All reports of deviation from permit requirements shall include the probable cause of the deviation and any preventative or corrective action taken. A progress

report shall be made on a compliance schedule at least semi-annually and shall include the date when compliance will be achieved, an explanation of why compliance was not, or will not be, achieved by the scheduled date, and a log of any preventative or corrective action taken. The reports shall be certified by the responsible official as true, accurate and complete. [ref. Reg 5.625]

Verification: The project owner shall submit deviation reports to the CPM according to the outlined timeframes. The project owner make the site and records available for inspection by representatives of the District, ARB, and Energy Commission upon request.

AQ-G5 Severability

In the event that any provision of this permit is held invalid all remaining portions of the permit shall remain in full force and effect. [ref. Reg 5.610]

Verification: No verification needed.

AQ-G6 Transfer of Ownership

In the event of any changes in control or ownership of facilities to be modified and/or operated, the operating permits are transferable and shall be binding on all subsequent owners and operators. The project owner shall notify the succeeding owner and operator of the existence of the operating permits and the conditions by letter, a copy of which shall be forwarded to the Air Pollution Control Officer. [ref. Rule 240(j)]

Verification: The project owner shall provide a copy of the letter of notification to the CPM in the following quarterly report.

AQ-G7 Records

Notwithstanding the specific wording in any requirement, all records for federally enforceable requirements shall be maintained for at least five years from the date of entry and shall include: date, place, and time of sampling, operating conditions at the time of sampling, date, place, and method of analysis and the results of the analysis. [ref. Reg 5.615]

Verification: The project owner shall make the site and records available for inspection by representatives of the District, ARB, and Energy Commission upon request.

AQ-G8 Emergency Provisions

The project owner may seek relief from enforcement action in the event of a breakdown, as defined by Regulation 1 Rule 540 of the District's Rules and

Regulations, by following the procedures contained in Regulation 1, rule 540 (b). The District will thereafter determine whether breakdown relief will be granted in accordance with Regulation 1, Rule 540 (b)(3). [ref. Reg 5.670]

The project owner may seek relief from enforcement action for a violation of any of the terms and conditions of this permit caused by conditions beyond the project owner's reasonable control by applying to the District's Hearing Board for a variance pursuant to Health and Safety Code Section 42350. The Hearing Board will determine after notice and hearing whether variance relief should be granted in accordance with the procedures and standards set forth in Health and Safety Code Section 42350 et seq. Any variance granted by the Hearing Board from any term or condition of this permit which lasts longer than 90 days will be subject to EPA approval. [ref. Reg 1 Rule 600]

Notwithstanding the foregoing, the granting by the District of breakdown relief or the issuance by the Hearing Board of a variance will not provide relief from federal enforcement unless the Title V Operating Permit has been modified pursuant to Regulation 5 or other EPA-approved process. [ref. Reg 1 Rule 600]

Verification: The project owner shall notify the CPM of any breakdown, as defined by Regulation 1 Rule 540 of the District's Rules and Regulations, within the timeframes outlined in Regulation 1 Rule 540 of the District's Rules and Regulations. The project owner shall submit the required breakdown reports and report any variance to the CPM in the next quarterly report. The project owner shall make the site and records available for inspection by representatives of the District, ARB, and Energy Commission upon request.

AQ-G9 Permit Posting

Operations under the operating permits must be conducted in compliance with all data and specifications included in the application which attest to the operator's ability to comply with District Rules and Regulations. The permits must be posted in such a manner as to be clearly visible and accessible at a location near the source. In the event that the permits cannot be so placed, the permits shall be maintained readily available at all times on the operating premises. [ref. Rule 240(i)]

Verification: The project owner shall make the site and records available for inspection by representatives of the District, ARB, and Energy Commission upon request.

AQ-G10 Compliance Certification

Compliance reports and certifications shall be submitted annually by the project owner of the facility to the Northern Sonoma County Air Pollution Control District, EPA, and CPM. Each compliance certification shall be

accompanied by a written statement from the responsible official which certifies the truth, accuracy, and completeness of the report. [ref. Regulation 5.650]

Permits shall not authorize the emissions of air contaminants in excess of those allowed by the Health and Safety Code of the State of California or the Rules and Regulations of the Northern Sonoma County Air Pollution Control District. Permits shall not be considered as permissions to violate existing laws, ordinances, regulations or statutes of other governmental agencies. [Rule 240(d)]

Verification: The project owner shall submit the annual compliance reports and certification to the CPM.

AQ-G11 Permit Modification

The project owner shall comply with all applicable requirements in NSCAPCD Regulation 1 Chapter II- Permits and New Source Review. [ref. Regulation 1 Rule 200]

Verification: No verification needed.

REFERENCES

ARB 2019a - California Air Resources Board. Air Designation Maps available on ARB website. http://www.arb.ca.gov/desig/adm/adm.htm Accessed October 2019.

ARB 2019b - California Air Resources Board. California Ambient Air Quality Data Standards available on ARB website. http://www.arb.ca.gov/research/aaqs/aaqs.htm Accessed October 2019

GPC 2019 – Geyser Power Company – Lake View Geothermal power Plant Petition for Modification Fire System recommissioning Activities. (TN 229127) July 29, 2019

GPC 2019a – Geyser Power Company – Revised Lake View Geothermal power Plant Petition for Modification Fire System recommissioning Activities. (TN 229899) October 1, 2019

CEC 1979 – California Energy Commission – Lake View (Unit 17) 1979 Final Decision (TN 206754) docketed November 24, 2015

CEC 1979b – California Energy Commission – Lake View (Unit 17) Compliance Plan (TN 206753) docketed November 24, 2015

NSCAPCD 2014 – Northern Sonoma County Air Pollution Control District – Title V Operating Permit effective March 124, 2014

NSCAPCD 2016 – Northern Sonoma County Air Pollution Control District – Title V Operating Permit issued January 16, 2016

NSCAPCD 2019a – Northern Sonoma County Air Pollution Control District – Evaluation Report Geysers Power Company Emergency Standby Wet-Down Diesel Drive Engine issued July 3, 2019

NSCAPCD 2019b – Northern Sonoma County Air Pollution Control District – Authority to Construct and Temporary Permit to Operate #19-18 issued July 3, 2019

U.S. EPA 2019a – United States Environmental Protection Agency. The Green Book Nonattainment Areas for Criteria Pollutants website. https://www.epa.gov/green-book Accessed October 2019.

U.S. EPA 2018b - United States Environmental Protection Agency. National Ambient Air Quality Data Standards available on U.S. EPA website. https://www.epa.gov/criteria-air-pollutants/naaqs-table Accessed October 2019.