

**DOCKETED**

<b>Docket Number:</b>	80-AFC-01C
<b>Project Title:</b>	Sacramento Municipal Utility District SMUDGE0 #1
<b>TN #:</b>	234709
<b>Document Title:</b>	Staff Analysis PTA - Sonoma
<b>Description:</b>	Staff Analysis of Petition to Amend for Recommissioning Activities; Installation of a permanent standby diesel engine driven pump
<b>Filer:</b>	Susan Fleming
<b>Organization:</b>	Energy Commission
<b>Submitter Role:</b>	Commission Staff
<b>Submission Date:</b>	9/15/2020 10:46:48 AM
<b>Docketed Date:</b>	9/15/2020



**DATE:** September 15, 2020

**TO:** Interested Parties

**FROM:** Eric Veerkamp, Compliance Project Manager

**SUBJECT: Sonoma Geothermal (80-AFC-01C)  
Staff Analysis of Petition to Amend for Recommissioning  
Activities; Installation of a permanent standby diesel  
engine driven pump**

On March 31, 2020, Geysers Power Company (GPC), LLC, submitted a petition for modification of the Final Decision for the Sonoma Geothermal electrical generating facility (TN 232608). 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 March 9, 2020.

Sonoma Geothermal is a dry steam, 78-megawatt geothermal power plant, originally licensed by the CEC in March 1981, with commercial operations commencing in December 1983. 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 Sonoma. 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 Staff proposes that the existing slate of air quality conditions of certification be repealed and replaced with new conditions of certification to update the reporting standards and incorporate revised NSCAPCD permit language that has changed as a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 Sonoma [\(Unit 03\) webpage](#) at:  
<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=80-AFC-01C>

CEC staff intends to recommend approval of the petition and the new conditions of certification proposed in staff's analysis at the October 14, 2020, CEC Business Meeting. After the meeting, the CEC's Order regarding this petition will also be posted on the Commission's Sonoma Geothermal webpage.

This notice and staff analysis are being provided to property owners adjacent to the Sonoma site. This notice and staff analysis are also being mailed to other interested parties and the Sonoma Geothermal mail list, and being sent electronically to the Sonoma 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, October 12, 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 to:

California Energy Commission  
Dockets Unit, MS-4  
Docket No. 80-AFC-01C  
1516 Ninth Street  
Sacramento, CA 95814-5512

All comments and materials filed with the Dockets Unit will be added to the Sonoma Geothermal Docket Log and become publicly accessible on the CEC's webpage for the facility.

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Sonoma, Unit 3 (80-AFC-01C)  
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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](mailto:eric.veerkamp@energy.ca.gov).

For information on participating in the CEC's review of the proposed modification to the Sonoma facility, please contact the CEC Public Adviser's Office at (800) 822-6228 (toll-free in California). The Public Adviser's Office can also be contacted via e-mail at: [publicadviser@energy.ca.gov](mailto:publicadviser@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](mailto:mediaoffice@energy.ca.gov).

Mail List 771  
Sonoma List Serve

**GEYSERS SONOMA, UNIT 3 (80-AFC-01C)**  
**Petition to Amend Commission Decision**  
**EXECUTIVE SUMMARY**  
Eric Veerkamp

## **INTRODUCTION**

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On March 31, 2020, Geysers Power Company, LLC, filed a post certification (TN 232608) with the California Energy Commission (CEC) requesting a change to Sonoma (Unit 3), geothermal power plant (80-AFC-01C), as part of the fire system recommissioning activities. Sonoma (Unit 3) 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 would all be contained on a single skid and placed on a foundation located in the existing developed yard. The engine would be able to be manually started locally, or remotely started from the control room at the Geysers Administrative Center in the event of a wildfire if plant personnel needs to evacuate the site. The pump would also provide water to the cooling tower wet-down system.

The purpose of the CEC's review process is to assess whether the proposed changes to the facility would have a significant impact on the environment or cause the facility 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 changes to the facility. 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 change. With the adoption of staff's recommended new air quality conditions of certification, the changes to Sonoma (Unit 3) would comply with applicable federal, state, and NSCAPCD LORS, and would not result in significant air quality impacts.

## **PROJECT LOCATION AND DESCRIPTION**

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Sonoma (Unit 3) is a 78-megawatt, dry steam geothermal plant, located in Sonoma County. Sonoma, (Unit 3), formerly known as Sacramento Municipal Utility District (SMUD) SMUDGE No. 1 Geothermal Project (SMUDGE), was renamed when it was purchased by Geysers Power Company, a wholly-owned subsidiary of Calpine Corporation, in 1999. SMUDGE No. 1 was licensed by the CEC in March 1981. Commercial operation commenced in December 1983.

## **DESCRIPTION OF PROPOSED**

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The changes proposed in this petition include the installation of a permanent standby diesel engine-powered pump and ancillary equipment for the cooling tower wet-down system.

## **NECESSITY FOR THE PROPOSED CHANGES**

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The primary purpose and need for this amendment is to upgrade the wet-down 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 March 9, 2020.

## **STAFF'S ASSESSMENT OF THE PROPOSED CHANGES**

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CEC technical staff reviewed the petition 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 Geological and Paleontological Resources, Land Use, Socioeconomics, Traffic and Transportation, Visual Resources, Waste Management, Water Quality and Soils, Transmission Line Safety and Nuisance, and Transmission System Engineering are not affected by the proposed project changes.

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 ensure 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.

For the technical areas of Biological Resources, Cultural Resources, Facility Design, Hazardous Materials Management, Noise, Public Health, 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:

### **BIOLOGICAL RESOURCES**

The diesel engine pump and associated equipment would all be contained on a single skid and located in a previously disturbed and paved area. There is no native habitat remaining on the site, and therefore there would be no impacts associated with loss of habitat, as the site is fenced and the likelihood of wildlife entering the site is extremely low. Similarly, no impacts are expected to avian species, as there are no nearby trees. No conditions of certification in the Final Commission Decision (Decision) are applicable to this change, and the project would remain in compliance with all LORS.

### **CULTURAL RESOURCES**

No known cultural resources are on the project site that could be impacted by the proposed project changes. Excavation for foundations would occur in previously disturbed soil. The CEC did not impose any conditions of certification for cultural resources. However, in the unlikely event that cultural resources are encountered during construction, the commission decision for this project states the "Applicant will contact a qualified archaeologist to evaluate finds unearthed during construction and recommend mitigation measures developed in consultation with local Native Americans" (CEC 1981, p.63). While state and local LORS have been updated since the Decision in 1981, the project would remain in compliance with LORS as they pertain to cultural resources. No changes to conditions of certification are required for this project change.

### **FACILITY DESIGN**

The installation of the standby pump for the cooling tower wet-down system within the existing Sonoma (Unit 3) site must be in accordance with the 2019 edition of the California Building Code. Implementation of the existing Facility Design conditions of certification adopted in the Decision and construction compliance oversight by the CEC's delegate chief building official would ensure this compliance.

### **HAZARDOUS MATERIALS MANAGEMENT**

During the installation of the new diesel pump, several hazardous materials would be used on site. These materials would include solvents, gasoline, lubricants, and welding gases which are already included in the annual hazardous materials business plan. No extremely hazardous or regulated hazardous materials would be used on site specifically for the installation of the new diesel pump. Therefore, with the project owner's continued compliance with existing conditions of certification, the proposed changes would not have a significant impact on the offsite public or the environment and would continue to comply with all applicable LORS.

### **NOISE**

Construction associated with this petition would be temporary and would occur during daytime hours that are consistent with the local ordinance. Any noise generated during these activities would result in a less-than-significant impact with implementation of the existing Noise conditions of the certification in the Decision.

The changes would not impact the existing operational noise levels. The standby pump would be used in the event of an emergency that would result from the loss of all or part of the normal electrical power service. The pump would also operate for periodic testing and maintenance. The rate of its use would thus be very low. The changes in this petition would create a less-than-significant noise impact. Furthermore, the project would continue to meet the operational noise requirements established in the Decision.

### **PUBLIC HEALTH**

Staff has analyzed potential public health risks associated with the construction and operation of the standby pump for the cooling tower wet-down system. Staff does not expect any significant adverse cancer, short-term, or long-term health effects on any members of the public, including low income and minority populations, from the project's toxic emissions. Staff also concludes that there is no need to add any Public Health condition of certification and that Sonoma (Unit 3) would remain in compliance with all applicable LORS.

### **WORKER SAFETY AND FIRE PROTECTION**

Activities to be performed for the installation of the diesel-powered standby pump, would comply with worker safety and fire requirements already contained in health and safety plans utilized during construction of the main facility. By



continuing to comply with existing conditions of certification, the project owner's proposed installation of a new diesel-powered pump would not have a significant impact on worker health and safety and would comply with all applicable LORS.

**Executive Summary Table 1  
 Summary of Impacts to Each Technical Area**

Technical Areas Reviewed	Technical Area Not Affected	CEQA			Conforms with applicable LORS	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	X	
Geological and Paleontological Resources	X					
Hazardous Materials Management				X		
Land Use	X					
Noise				X		
Public Health				X		
Socioeconomics	X					
Soil and Water Resources	X					
Traffic and Transportation	X					
Transmission Line Safety and Nuisance	X					
Transmission System Engineering	X					
Visual Resources	X					
Waste Management	X					
Worker Safety and Fire Protection				X		

## **ENVIRONMENTAL JUSTICE**

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**Environmental Justice – Figure 1** shows 2010 census blocks in the six-mile radius of Sonoma (Unit 3) 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 Geyserville Unified and Cloverdale 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 Sonoma (Unit 3) site.

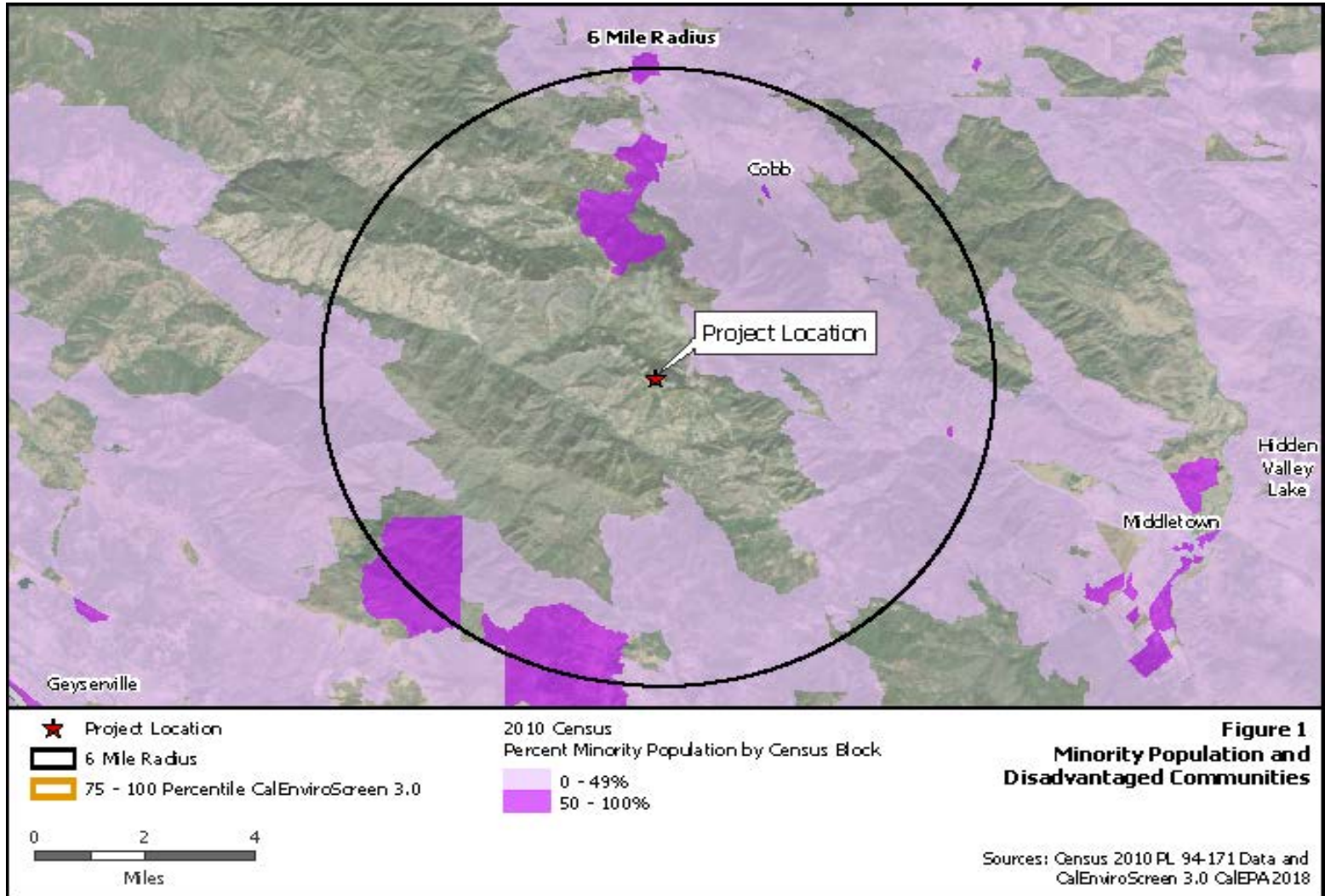
**Environmental Justice – Table 1  
 Low Income Data within the Project Area**

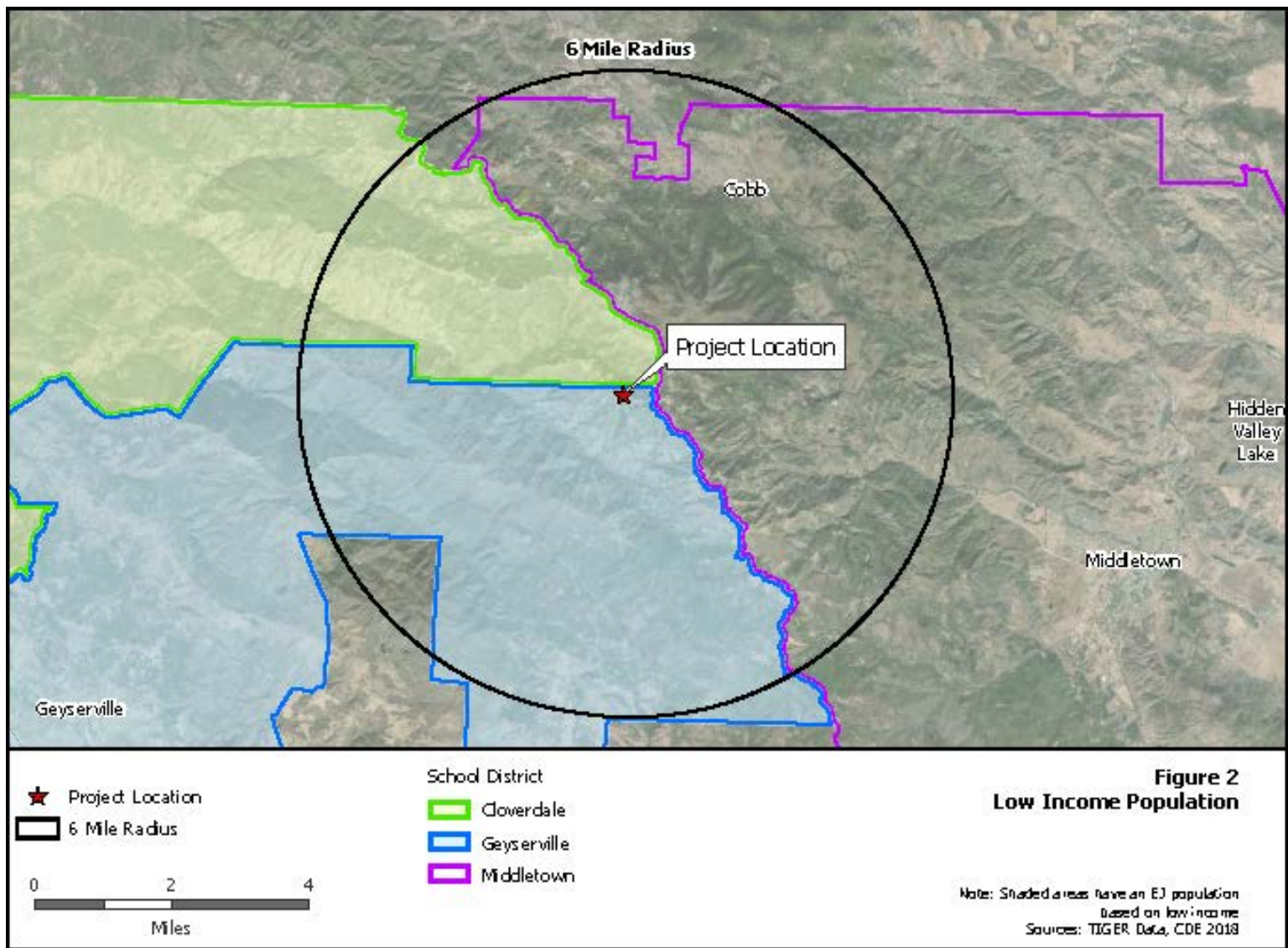
LAKE COUNTY SCHOOL DISTRICT IN SIX-MILE RADIUS	Enrollment Used for Meals	Free or Reduced Price Meals	
Middletown Unified	1,712	1,061	62.0%
REFERENCE GEOGRAPHY			
Lake County	9,549	7,324	76.7%
SONOMA COUNTY SCHOOL DISTRICTS IN SIX-MILE RADIUS	Enrollment Used for Meals	Free or Reduced Price Meals	
Geyserville Unified	237	138	58.2%
Cloverdale Unified	1,440	866	60.1%
REFERENCE GEOGRAPHY			
Sonoma County	70,455	33,570	47.6%
<b>Source:</b> CDE 2018. California Department of Education, DataQuest, Free or Reduced Price Meals, District level data for the year 2017-2018, < <a href="http://dq.cde.ca.gov/dataquest/">http://dq.cde.ca.gov/dataquest/</a> >.			

The following technical areas (if affected by a project change) consider impacts to EJ populations: Air Quality, Cultural Resources (indigenous people), Hazardous Materials Management, Land Use, Noise and Vibration, Public Health, Socioeconomics, Soil and Water resources, Traffic and Transportation, Transmission Line Safety and Nuisance, Visual Resources, Waste Management, and Worker Safety and Fire Protection.

**ENVIRONMENTAL JUSTICE CONCLUSIONS**

For the technical areas that consider EJ populations and would be affected by the project changes in this petition – Air Quality, Cultural Resources, Hazardous Materials Management, Noise, and Worker Safety and Fire Protection – staff concludes that impacts would be less than significant, or less than significant by adopting the proposed changes to the existing Air Quality conditions of certification, and thus would be less than significant on the EJ population represented in **Environmental Justice Figure 1, Figure 2, and Table 1.**





## **STAFF RECOMMENDATIONS AND CONCLUSIONS**

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After reviewing the changes proposed in the petition, staff concludes that the following findings can be made and will recommend approval of the petition by 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 will continue to comply with applicable laws, ordinances, regulations or 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 CEC's license with the Air District's permit.

## **REFERENCES**

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**CEC 2020** – Sonoma, Unit 3 Geothermal Project Petition for Modification - Fire System Recommissioning Activities, Docket No. 80-AFC-01C Sonoma (Unit 03) Geothermal Project (TN 232608) docketed April 1, 2020

**CEC 1981** – California Energy Commission – Sonoma (Unit 3) 1979 Final Decision (TN 206764) docketed November 24, 2015

**CEC 1981** – California Energy Commission – Sonoma (Unit 3) 1981 Compliance Plan (TN 206765) docketed November 24, 2015

**Sonoma Geothermal Power Plant (80-AFC-01C)**  
**Request to Amend Final Commission Decision**  
**Air Quality Analysis of Modification for the Installation of a Standby Pump for the**  
**Cooling Tower Wet-Down System**  
**Nancy Fletcher**

**INTRODUCTION AND SUMMARY**

On March 31, 2020, the Geysers Power Company, LLC (petitioner or GPC) filed a post certification petition for modification (TN 232608) with the California Energy Commission (CEC) requesting a change 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 Sonoma Geothermal Power Plant (Sonoma). Sonoma was formerly Sacramento Municipal Utility District SMUDGE0 No. 1 Geothermal Project (SMUDGE0). The CEC certified SMUDGE0 on March 25, 1981 and commercial operation began in December 1983.

Sonoma consists of a nominal 78-megawatt (MW) turbine generator, a multiple-cell mechanically induced crossflow cooling tower, turbine bypass, a hydrogen sulfide (H<sub>2</sub>S) abatement system, and ancillary equipment. The project is located in eastern Sonoma County near the Lake County border, within the Northern Sonoma County Air Pollution Control District (NSCAPCD).

Sonoma was built on federal land. The initial review was completed through a cooperative effort under a memorandum of understanding between the CEC, United States Geological Survey (USGS), and the Bureau of Land Management (BLM). In addition, prior to CEC licensing, a letter of understanding (LOU) was signed by the CEC and USGS clarifying the responsibilities of the agencies following the issuance of the license. The LOU stated the ultimate decision-making authority over operations of the facility fell with the USGS and BLM and ongoing compliance documents would be submitted to the USGS. In August 2010, the CEC approved a letter from the USGS requesting the USGS be removed as the primary compliance monitoring agency. At that time, the CEC took over the role as the primary compliance monitoring agency.

In 2015, the Valley Fire damaged the Sonoma cooling tower. Governor Brown issued Executive Order B-36-15 to expedite demolition and reconstruction of fire-damaged assets such as the cooling tower. The Energy Commission approved the requested reconstruction to remediate the wildfire damage and directed the incorporation of the Authority to Construct (ATC) issued by the NSCAPCD into the Energy Commission's Final Decision for Sonoma. The resulting changes to the conditions of certification from the cooling tower reconstruction are included in this analysis.



With this current petition for modification, GPC is proposing a Tier-3 diesel-fueled emergency engine rated at 204 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. Wet-down pump systems have been previously approved by the CEC at the Lake View, Socrates, Quicksilver, and Grant geothermal facilities, and one is also currently being proposed for installation at Calistoga. On February 28, 2020, 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 March 9, 2020, 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 conditions of certification to ensure compliance with applicable Laws, Ordinances, Regulations, and Standards (LORS) and ensure potential air quality impacts from the proposed operation of the emergency diesel-fueled engine are mitigated to a less than significant level. Staff is also proposing additional changes to update the air quality conditions of certification with current requirements. With the proposed conditions of certification, the project would comply with applicable LORS, there would be no significant air quality impacts related to Sonoma, 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 LORS.

**Air Quality Table 1** includes a summary of the LORS currently applicable to Sonoma. The conditions of certification in the Energy Commission Final Decision (September 1981) 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**

<i>Applicable Law</i>	<i>Description</i>
<b>Federal</b>	<b>U.S. Environmental Protection Agency (EPA)</b>
Title 40, Code of Federal Regulations, 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. Compliance is expected.

<i>Applicable Law</i>	<i>Description</i>
Title 40, Code of Federal Regulations, 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. Compliance is expected.
Title 40, Code of Federal Regulations, Part 52 (Approval and Promulgation of Implementation Plans)	Establishes requirements for attainment emissions. 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. Therefore, continued compliance is expected.
Title 40, Code of Federal Regulations, 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-3 engine. Compliance is expected.
Title 40, Code of Federal Regulations, 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.
<b>State</b>	
Health & Safety Code, sections 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. The emergency engine was evaluated for compliance with NSCAPCD NSR requirements.
Health & Safety Code, sections 41700-41701 (General Limitations)	Establishes nuisance and visible emission requirements. Prohibits discharge of such quantities of air contaminants that cause injury, detriment, nuisance, or annoyance. Compliance is expected.
Health & Safety Code, section 42301.6 (Permits)	Establishes requirements for facilities located near schools. Sonoma is over 1,000 feet away from any school and is therefore not subject to the requirements.

<i>Applicable Law</i>	<i>Description</i>
Title 17, California Code of Regulations, section 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. Compliance is expected.
<b>Local</b>	<b>Northern Sonoma County Air Pollution Control District</b>
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. Compliance is expected.
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. Compliance is expected.
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 the installation of Tier-3 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. 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 would be limited, and the source is remotely located. Therefore, compliance is expected.
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.

<i>Applicable Law</i>	<i>Description</i>
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 compliant.
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 <sub>2</sub> S concentrations leaving the Stretford adsorber. The treated gas is less than 10 parts per million by volume (ppmv) H <sub>2</sub> S. The gas is vented to the cooling tower. Source tests from the cooling tower indicate the H <sub>2</sub> S concentrations released to the atmosphere are compliant. Continued compliance is expected.
Regulation I Chapter 4 Prohibitions Rule 455(b)	Geothermal Emission Standards— Limits emissions of hydrogen sulfide based on the facility. The Sonoma license limits the plant H <sub>2</sub> S emissions. A monthly source test of the cooling tower verifies compliance. Continued compliance is expected.
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. Sonoma operates under a Title V operating permit. Continued compliance is expected.

**SETTING**

**Ambient Air Quality Standards**

The United States Environmental Protection Agency (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 National Ambient Air Quality Standards. 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 ( $\mu\text{g}$ ) of pollutant in a cubic meter ( $\text{m}^3$ ) of ambient air, drawn over the applicable averaging period.

**Air Quality Table 2  
 Federal and State Ambient Air Quality Standards**

<b>Pollutant</b>	<b>Averaging Time</b>	<b>Federal Standard</b>	<b>California Standard</b>
Ozone (O <sub>3</sub> )	8 Hour	0.070 ppm (137 $\mu\text{g}/\text{m}^3$ ) <sup>a</sup>	0.070 ppm (137 $\mu\text{g}/\text{m}^3$ )
	1 Hour	—	0.09 ppm (180 $\mu\text{g}/\text{m}^3$ )
Carbon Monoxide (CO)	8 Hour	9 ppm (10 $\text{mg}/\text{m}^3$ )	9 ppm (10 $\text{mg}/\text{m}^3$ )
	1 Hour	35 ppm (40 $\text{mg}/\text{m}^3$ )	20 ppm (23 $\text{mg}/\text{m}^3$ )
Nitrogen Dioxide (NO <sub>2</sub> )	Annual	53 ppb (100 $\mu\text{g}/\text{m}^3$ )	30 ppb (57 $\mu\text{g}/\text{m}^3$ )
	1 Hour	100 ppb (188 $\mu\text{g}/\text{m}^3$ ) <sup>b</sup>	180 ppb (339 $\mu\text{g}/\text{m}^3$ )
Sulfur Dioxide (SO <sub>2</sub> )	24 Hour	—	0.04 ppm (105 $\mu\text{g}/\text{m}^3$ )
	3 Hour	0.5 ppm (1300 $\mu\text{g}/\text{m}^3$ )	—
	1 Hour	75 ppb (196 $\mu\text{g}/\text{m}^3$ ) <sup>c</sup>	0.25 ppm (655 $\mu\text{g}/\text{m}^3$ )
Respirable Particulate Matter (PM <sub>10</sub> )	Annual	—	20 $\mu\text{g}/\text{m}^3$
	24 Hour	150 $\mu\text{g}/\text{m}^3$	50 $\mu\text{g}/\text{m}^3$
Fine Particulate Matter (PM <sub>2.5</sub> )	Annual	12 $\mu\text{g}/\text{m}^3$	12 $\mu\text{g}/\text{m}^3$
	24 Hour	35 $\mu\text{g}/\text{m}^3$ <sup>b</sup>	—
Sulfates (SO <sub>4</sub> )	24 Hour	—	25 $\mu\text{g}/\text{m}^3$
Lead	30 Day Average	—	1.5 $\mu\text{g}/\text{m}^3$
	Rolling 3-Month Average	0.15 $\mu\text{g}/\text{m}^3$	—

Pollutant	Averaging Time	Federal Standard	California Standard
Hydrogen Sulfide (H <sub>2</sub> S)	1 Hour	—	0.03 ppm (42 µg/m <sup>3</sup> )
Vinyl Chloride (chloroethene)	24 Hour	—	0.01 ppm (26 µg/m <sup>3</sup> )
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 2020b, U.S. EPA 2020b

Notes: <sup>a</sup> Fourth- highest maximum 8 – hour concentration, averaged over 3 years.

<sup>b</sup> 98<sup>th</sup> percentile of daily maximum value, averaged over 3 years

<sup>c</sup> 99<sup>th</sup> 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. Sonoma 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.

Sonoma is located close to the border of Sonoma County and Lake County in the Mayacamas Mountains in the Geysers 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<sub>2</sub>S, 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 <sub>2</sub>	Unclassified/Attainment	Attainment
SO <sub>2</sub>	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 2020a, U.S. EPA 2020a

Notes: \*Geysler Geothermal portion of the NSCAPCD is classified as attainment for hydrogen sulfide. The remainder is considered unclassified.

## **ANALYSIS**

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### **Construction**

The proposed permanent stationary standby wet-down pump would be driven by a diesel-fueled engine contained on a single skid. 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 from the installation of the proposed equipment.

### **Operation Summary and Emissions Analysis**

The emergency standby wet-down pump diesel drive engine would provide emergency suppression water pumping for the Sonoma cooling tower in the event of a wildfire. The emergency diesel-fueled engine would be manually started to wet the cooling tower if a wildfire approaches the facility, and could be operated remotely. 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.

During emergencies, the cooling tower wet-down system would keep surfaces of the cooling tower structure that are normally wetted when the cooling tower is in operation, also wetted when it 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 PTO is still pending. The final PTO will not be issued until the equipment has been installed and verified by the NSCAPCD.

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.

**Air Quality Table 4** includes the emission rates and the estimated potential emissions for the proposed emergency diesel-fueled engine. The NSCAPCD evaluated the diesel-fueled engine at a limited 50 hours per year for testing and maintenance purposes. The NSCAPCD does not evaluate emergency diesel-fueled engines based on potential hours of operation during emergencies. The emissions rates for NO<sub>x</sub>, CO, VOC, and PM<sub>10</sub> used to calculate the potential emissions are from the manufacturer’s specification sheet for the proposed engine. The PM<sub>2.5</sub> emission rate is conservatively assumed to be equivalent to the PM<sub>10</sub> emission rate. The SO<sub>x</sub> emission rate is based on the use of ultra-low sulfur diesel. Staff calculated CO<sub>2</sub> and carbon dioxide equivalent (CO<sub>2e</sub>) emissions using emission factors from the U.S. EPA greenhouse gas inventory and global warming potentials from the Intergovernmental Panel on Climate Change.

Staff also evaluated 200 hours of total annual engine operation to demonstrate that emissions would remain far below any level of significance established by the NSCAPCD rules and regulations. Staff expects the engines to operate well below the 200-hour scenario. Staff includes potential emissions from the 50-hour testing and maintenance operation limit and the hypothetical 200-hour scenario and compares them to the NSCAPCD significance threshold in **Air Quality Table 4**.

**Air Quality Table 4**  
**Estimated Emissions from the Proposed Diesel Engine**

	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>VOC</b>	<b>SO<sub>x</sub><sup>c</sup></b>	<b>PM<sub>10</sub>/2.5</b>	<b>CO<sub>2e</sub><sup>a</sup></b>
Emission Rate (g/bhp-hr)	2.475	1.193	0.062	0.006	0.111	NA
Potential Hourly <sup>b</sup> (pounds/hour)	1.113	0.537	0.028	0.002	0.050	239
Annual 50-hours (pounds/year)	55.65	26.83	1.39	0.12	2.50	11,967
Annual 50-hours (tons/year)	0.0278	0.0134	0.0007	0.0001	0.0012	5.983
Annual 200-hours (pounds/year)	222.62	107.31	5.58	0.49	9.98	47,867
Annual 200-hours (tons/year)	0.1113	0.0537	0.0028	0.0002	0.0050	23.933
NSCAPCD Significance (tons/year)	40	100	40	40	15/10	---

Source: NSCAPCD 2020a, staff analysis  
 Notes: NA=Not Applicable, NS=Not Significant



- a. Based on CO<sub>2e</sub> 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<sub>2</sub> = 73.96 kilograms per million British thermal units (kg/MmmBtu) and 1, CH<sub>4</sub> = 3.0 grams per million British thermal units (g/mmBtu) and 25, N<sub>2</sub>O = 0.60 g/mmBtu and 298.
- b. Potential maximum hour operation.
- c. Significant emissions of hydrogen sulfide associated with the proposed emission unit is not expected. Essentially all sulfur in the fuel is oxidized to SO<sub>2</sub>.

Based on the proposed engine, the estimated emissions, and NSCAPCD significance thresholds in **Air Quality Table 4**, staff concludes no the impact analysis is complete.

The ATC for the emergency standby wet-down pump diesel drive engine 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 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. Applicable administrative conditions for the facility are included in the Title V operating permit. 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 Sonoma was licensed and imposed requirements for the operation of facility during the original PSD review period. The NSCAPCD currently has delegated authority over the PSD requirements for Sonoma. 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 for the facility, remain on the Title V operating permit.

Staff is proposing to update the conditions of certification for consistency with changes incorporated into the NSCAPCD permits since the CEC originally licensed the Sonoma project. The changes clarify operational and reporting requirements. Sonoma operates under a federal Title V operating permit and separate NSCAPCD operating permits. Staff reviewed the updated NSCAPCD permit operating limits and reporting requirements.

CEC staff is proposing to incorporate the quarterly and annual 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 Sonoma continues to operate in compliance with CEC requirements.

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

### **Compliance Determination**

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 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 conditions of certification with emission limitations are **AQ-AE1** through **AQ-AE4**, and 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**, and the recordkeeping provision 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 accessibility 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 the emergency diesel-fueled engine operates for emergency purposes as requested, 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 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 since the final decision.

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.

CEC staff is proposing to replace the existing Applicable Laws, Ordinances, Standards, and Practices and Requirements sections with 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. 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 is considered part of the requirements. Including the equipment list at the beginning of the permit clarifies the equipment subject to air quality requirements. In addition, the equipment list includes equipment ratings and performance standards that are considered part of the license.

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 all air quality equipment included in the NSCAPCD -issued permits.

Staff proposes to separate CEC staff-proposed 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.**

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 project owner would need to demonstrate compliance with all air quality conditions of certification, including staff conditions, to satisfy the requirements of the Energy Commission annual compliance report.

CEC staff is proposing to move and update the current requirements in the Applicable Laws, Ordinances, Standards and Practices section with condition language included in the Plant-Wide Permit Conditions section. Staff is proposing to update the 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 Condition of Certification **1-1**. 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.

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 current requirements into the appropriate sections of the proposed condition format.

Proposed Conditions of Certification **AQ-A1** through **A7** would replace the existing emission requirements in Condition of Certification **1-2**. Staff is proposing to replace Condition of Certification **1-2** subparts **1** through **6**, **13A**, and **13F** 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 the emission requirements established by the PSD permit.

When Sonoma was originally licensed, there was uncertainty in the H<sub>2</sub>S modeling and the background concentrations. The license established a BACT H<sub>2</sub>S limit of 5 pounds per hour (lbs/hr). However, the license recognized the 5 lbs/hr may not be practical and allowed for

an H<sub>2</sub>S emission limit of up to 50 grams per gross megawatt-hour (gm/gMW-hr) if the background concentration was found to be as low as anticipated. The current NSCAPCD Title V contains two facility H<sub>2</sub>S emission rates, 8.6 lbs/hr and 8.0 lbs/hr. One was established by the NSCAPCD and the second was established by the U.S. EPA issued PSD permit. The NSCAPCD issued permits identifies the generator capacity as 78 gMW. The CEC license describes the facility as 72.3 MW-hr. Staff notes that assuming a gross capacity of 78 gMW yields an H<sub>2</sub>S emission rate of 8.6 lbs/hr. However, substituting 72.3 MW-hr 'net' yields an H<sub>2</sub>S emission rate of 8.0 lbs/hr. It is expected Sonoma would continue to operate well below the current emission rate requirements as source test results indicate actual H<sub>2</sub>S emission rates are much lower than the permitted rates. Monthly tests from the first quarter of 2020 indicate H<sub>2</sub>S emissions below 1 lb/hr for each month.

Staff is proposing to replace emission requirements in Condition of Certification **1-2** subpart **7** with proposed Condition of Certification **AQ-A4** to ensure compliance with NSCAPCD Rule 455(a). In addition, staff is proposing Condition of Certification **AQ-A5** establishing an annual H<sub>2</sub>S limit to ensure compliance with all LORS.

Staff is proposing the addition of Condition of Certification **AQ-A6** and **AQ-A7** to establish a particulate emission concentration for non-combustion sources, and to ensure compliance with NSCAPCD Rule 420(d). These conditions would replace Condition of Certification **1-2** subpart **7**. Sonoma 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-6** 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. Staff is proposing the addition of Conditions of Certification **AQ-B5** through **AQ-B10** 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. 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.

Proposed Condition of Certification **AQ-B11** includes additional requirements for the project owner to maintain the air pollution control equipment. These requirements were established in the facility PSD permit and are currently in the NSCAPCD issued Title V permit. Proposed Condition of Certification **AQ-B12** would replace requirements for unscheduled outages in Condition of Certification **1-2** subpart **11**.

Staff is proposing the addition of Conditions of Certification **AQ-C1** through **AQ-C10** to establish monitoring, testing and analysis requirements. All monitoring, testing and analysis requirements are consistent with NSCAPCD issued permit requirements.

Proposed Conditions of Certification **AQ-C1** and **AQ-C1a** 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 procedures to verify compliance with the emission limits in Condition of Certification **AQ-A6** and **AQ-A7**. Proposed Condition of Certification **AQ-C5** establishes ongoing testing requirements, including frequency, to verify compliance with the emission limit in Condition of Certification **AQ-A1**. Proposed Condition of Certification **AQ-C6** establishes testing requirements if secondary condensate or abatement treatment is necessary to achieve the emission limit in Condition of Certification **AQ-A1**. Proposed Condition of Certification **AQ-C7** would require NSCAPCD approval for the instruments used to test H<sub>2</sub>S. Proposed Condition of Certification **AQ-C8** establishes requirements including protocols for the ongoing testing and monitoring of H<sub>2</sub>S if secondary condensate treatment is necessary to maintain compliance with the emission limits in Conditions of Certification **AQ-A1** and **AQ-A2**. Staff is proposing to replace the monitoring requirements in Condition of Certification **1-2** subpart **13** with updated monitoring requirements in Condition of Certification **AQ-C9**. Condition of Certification **AQ-C9** would verify compliance with the emission limits in Condition of Certification **AQ-A3**.

Staff is proposing to replace the ambient air monitoring requirements in Conditions of Certification **1-2** subpart **13** and **1-7** with updated requirements in proposed Condition of Certification **AQ-C10**. 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 station(s) if the project owner chooses not to participate in GAMP.

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-E4** to establish reporting requirements. As discussed above, staff is proposing an additional reporting requirement to be included in Condition of Certification **AQ-E2**. Staff is proposing to require the project owner to submit the emergency diesel-fueled engine operating hours, including the reason for use.

Staff is proposing to update and replace language in the Applicable Laws, Ordinances, Standards, and Practices section 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**

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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 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 Sonoma and requiring 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 to the CPM;

2. Submitting the proposed emergency diesel-fueled engine operating hours noting the reason for operation in the annual reports to the CPM;
3. Submitting summaries of any notices of violation and associated report(s), and notice of complaints to the CPM;
4. A demonstration of compliance with the conditions of certification in the annual compliance report;
5. Submitting proposals for project modifications and permits issued; and
6. Maintaining a current equipment list.

The proposed updated air quality conditions of certification would include:

- Four staff conditions of certification;
- Eleven conditions of certification with emission limits (seven for the plant and abatement systems and four for the proposed engine);
- Seventeen conditions of certification with operational limits and requirements (twelve for the plant and abatement systems and five for the proposed engine);
- Eleven conditions of certification outlining monitoring, testing, and analysis (ten for the plant and abatement systems and one for the proposed engine);
- Eight conditions of certification with recordkeeping requirements (seven for the plant and abatement systems and one for the proposed engine);
- Four conditions of certification with reporting requirements;
- One condition of certification with plant wide requirements, and
- Twelve 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**

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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 to ensure the project complies with all LORS. 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. The conditions of certification from the ATC issued by the NSCAPCD for the cooling tower reconstruction are regular text as they appeared in the Energy Commission approval for the cooling tower repair. The Energy Commission order approved these conditions into the license. Updates to the conditions contained in the cooling tower replacement ATC are indicated using **bold underline** and ~~strikethrough~~.

## **CONDITIONS OF CERTIFICATION**

### **Section 1. Air Quality**

#### **GLOSSARY**

**Abatement Solution: Iron chelate, hydrogen peroxide, or any other District-approved compound used to chemically treat hydrogen sulfide 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<sub>2</sub>S 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**

**NSCAPCD or 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 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.**

**PM2.5: Particulate matter with aerodynamic equivalent diameter of less than or equal to 2.5 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**

<b><u>Unit of measure:</u></b>	<b><u>ft<sup>3</sup> = cubic feet</u></b>	<b><u>g = grams</u></b>	<b><u>gal = gallon</u></b>	<b><u>hr = hour</u></b>
	<b><u>lb = pound</u></b>	<b><u>in = inches</u></b>	<b><u>yr = year</u></b>	
	<b><u>ppmv = parts per million volume</u></b>		<b><u>scfm = standard cubic feet per minute</u></b>	
	<b><u>ppmw = parts per million weight</u></b>		<b><u>psia = pounds per square inch absolute</u></b>	

**VEE: Visible Emissions Evaluation**

**EQUIPMENT DESCRIPTION**

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

<b><u>Power Plant</u></b>		
<b><u>S-#</u></b>	<b><u>Description</u></b>	<b><u>Nominal Capacity</u></b>
<b><u>1</u></b>	<b><u>Steam Turbine</u></b>	<b><u>1,100,000 lb steam/hr maximum plant gross steam flow</u></b>
<b><u>2</u></b>	<b><u>Generator</u></b>	<b><u>78 MW gross nameplate capacity</u></b>
<b><u>3</u></b>	<b><u>Surface Condenser with Gas Removal System Consisting of 2 Stages of Steam Ejectors and Vacuum Pump</u></b>	<b><u>8.3 x 10<sup>8</sup> lb steam/hr</u></b>
<b><u>4</u></b>	<b><u>Cooling Tower, Cross-Flow, Mechanical Draft Type with 0.001% Rated Drift Eliminators with 12 fans</u></b>	<b><u>142,080 GPM, Fans 150 hp each</u></b>
<b><u>5</u></b>	<b><u>Turbine Bypass</u></b>	<b><u>908,000 lb steam/hr</u></b>

<b><u>6</u></b>	<b><u>Gland Steam Seal Leakoff System</u></b> <b><u>Consisting of:</u></b>	
<b><u>A</u></b>	<b><u>Gland Steam Seal Leakoff Condenser</u></b>	
<b><u>B</u></b>	<b><u>Gland Steam Seal Leakoff Exhaust Blower</u></b>	<b><u>5 HP</u></b>
<b><u>C</u></b>	<b><u>Gland Steam Seal Leakoff Separator</u></b>	
<b><u>7</u></b>	<b><u>Emergency Standby Diesel Powered Fire Pump</u></b>	<b><u>380 HP, Cummins Model NT-855-F2</u></b>
<b><u>8</u></b>	<b><u>Emergency Standby Wet-Down Pump Diesel Drive Engine, (Tier 3, Manufactured 2020)</u></b>	<b><u>204 HP, Cummins Model CFP7E-F40</u></b>
<b><u>Hydrogen Sulfide Control System</u></b>		
<b><u>A-#</u></b>	<b><u>Description</u></b>	<b><u>Nominal Capacity</u></b>
<b><u>1</u></b>	<b><u>Stretford Air Pollution Control System</u></b> <b><u>consisting of:</u></b>	
<b><u>A</u></b>	<b><u>Venturi Scrubber</u></b>	
<b><u>B</u></b>	<b><u>H<sub>2</sub>S Absorber, 2' 10" diameter (D) x 7' height (H)</u></b>	<b><u>95 gpm</u></b>
<b><u>C</u></b>	<b><u>Two Oxidizer Tanks, 15'D x 19'H, with 1 Oxidizer Blower, 125 HP, 2,000 cfm, and 2 oxidizer blowers, 60 HP, 900 cfm each</u></b>	<b><u>20,000 gallons each</u></b>
<b><u>D</u></b>	<b><u>Sulfur Slurry Tank, 11" D x 14' H</u></b>	<b><u>9,500 gallon</u></b>
<b><u>E</u></b>	<b><u>Sulfur Filter</u></b>	
<b><u>F</u></b>	<b><u>Pump Tank, 15' D x 14' H</u></b>	<b><u>18,000 gallon</u></b>
<b><u>G</u></b>	<b><u>Pump Evaporative Cooler, 0.002% drift</u></b>	
<b><u>H</u></b>	<b><u>Condensate Tank, 4' D x 5' H</u></b>	<b><u>470 gallon</u></b>
<b><u>I</u></b>	<b><u>Make-Up Tank, 4' D x 5' H</u></b>	<b><u>470 gallon</u></b>
<b><u>J</u></b>	<b><u>25% Caustic Supply Tank</u></b>	<b><u>10,250 gallon</u></b>
<b><u>K</u></b>	<b><u>Main Pumps consisting of:</u></b>	
<b><u>a</u></b>	<b><u>Scrubbing Solution Circulating Pump and Spare</u></b>	<b><u>60 HP each, 1,037 gpm</u></b>
<b><u>b</u></b>	<b><u>Vacuum Pumps and Spare, 10 HP</u></b>	
<b><u>c</u></b>	<b><u>Make-Up Pumps and Spare, 1 HP</u></b>	
<b><u>d</u></b>	<b><u>Sulfur Slurry Tank Pumps and Spare, 1.5 HP</u></b>	
<b><u>e</u></b>	<b><u>Caustic Supply Pump, 0.5 HP</u></b>	
<b><u>L</u></b>	<b><u>Stretford Bypass</u></b>	
<b><u>M</u></b>	<b><u>Sulfur Melter</u></b>	
<b><u>2</u></b>	<b><u>Secondary H<sub>2</sub>S Abatement System</u></b> <b><u>consisting of:</u></b>	
<b><u>A</u></b>	<b><u>Direct Condensate Reinjection/Condensate Reroute and/or</u></b>	
<b><u>B</u></b>	<b><u>Hydrogen Peroxide Injection/Storage System</u></b>	
<b><u>C</u></b>	<b><u>Metal Chelate Injection/Storage System</u></b>	

1. TURBINE, 1,000,000 LB STEAM/HR MAXIMUM
2. GENERATOR, 78 MEGAWATT NAMEPLATE RATING

- ~~3. STEAM CONDENSER WITH SHELL & TUBE TYPE~~
- ~~4. FIVE COOLERS, LUBE OIL, SEAL OIL, EXCITER AIR, HYDROGEN GAS AND AIR COMPRESSOR~~
- ~~5. COOLING TOWER, CROSS FLOW, MECHANICAL DRAFT TYPE WITH 12 CELLS (TWO 6-CELL SECTIONS) 0.001% RATED DRIFT ELIMINATORS AND 12 150 HP FANS~~
- ~~6. TWO 100% CONDENSATE PUMPS, EACH 75HP AND EACH 2250 GPM~~
- ~~7. FOUR 25% CIRCULATING WATER PUMPS, EACH 850 HP AND EACH 35,520 GPM~~
- ~~8. NON-CONDENSABLE GAS REMOVAL SYSTEM CONSISTING OF:
  - ~~A. STEAM JET EJECTOR SYSTEM~~
  - ~~B. MECHANICAL VACUUM PUMPS~~~~
- ~~9. TURBINE BYPASS~~
- ~~10. TWO REINJECTION PUMPS, EACH RATED AT 40 HP AND 2250 GPM~~
- ~~11. CIRCULATING WATER BIOCIDES INJECTION SYSTEM~~
- ~~12. SECONDARY H<sub>2</sub>S ABATEMENT SYSTEM CONSISTING OF:
  - ~~A. HYDROGEN PEROXIDE INJECTION/STORAGE SYSTEM~~
  - ~~B. IRON CATALYST INJECTION/STORAGE SYSTEM~~
  - ~~C. DIRECT CONDENSATE REINJECTION~~
  - ~~D. CONDENSATE REROUTE WITH EXTENSION~~~~
- ~~13. GLAND STEAM LEAK OFF SYSTEM CONSISTING OF:
  - ~~B. GLAND STEAM SEAL LEAK OFF CONDENSER (GSLOC)~~
  - ~~C. GLAND STEAM LEAK OFF EXHAUST BLOWER (GSLOB)~~
  - ~~D. GLAND STEAM SEAL LEAK OFF SEPARATOR (GSLOS)~~~~

~~Reconstruction of Cooling Tower Section #1.~~

~~LOCATED AT:~~

~~GEYSERS, SONOMA COUNTY, CA~~

~~Whereas application for an Authority to Construct/Temporary Permit to Operate has been made by the Geysers Power Company, LLC (hereinafter called the Operator) pursuant to Regulation 1 of the Rules and Regulations of the Northern Sonoma County Air Pollution Control District (hereinafter called the District), and said application has been reviewed and considered by the Air Pollution Control Officer of said District (hereinafter referred to as the Control Officer or NSCAPCD).~~

~~This is your Authority to Construct/Temporary Permit to Operate (hereinafter called PERMIT) subject to the following terms and conditions:~~

~~Permit Conditions:~~

## **A. Applicable Laws, Ordinances, Standards, and Practices**

- ~~Northern Sonoma County Air Pollution Control District (NSCAPCD) rules and Regulations, including but not limited to 220, 230, 400(a), 410(a), 420(d), 430 and 455 (a and b).~~
- ~~Clean Air Act and implementing federal regulations.~~
- ~~California Health and Safety Code Sections 40002 and 40701.~~

## **B. Requirements**

~~**1-1** The NSCAPCD shall perform all duties and function normally conducted by the APCD and shall have 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:** SMUD shall summarize in an annual compliance report to the CEC any interactions with the NSCAPCD. Geysers Power Company shall immediately inform the Energy Commission and ARB in writing of any formal appeals filed with the NSCAPCD.~~

**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.**

~~1-2~~ SMUD shall comply with the requirements specified in the NSCAPCD document entitled, "Determination of Compliance," dated January 28, 1981.

~~Verification:~~ SMUD shall provide the Energy Commission with copies of all reports submitted to the NSCAPCD and copies of all notices received from NSCAPCD.

DOC Conditions

- ~~1.~~ As originally proposed in the AFC, SMUDGE0 #1 (at 72.3 MW-hr) would operate at 100 gm/gMW-hr H<sub>2</sub>S. The NSCAPCD determines that operation at 100 gm/gMW-hr H<sub>2</sub>S would likely cause or contribute to a violation of the state ambient air quality standard for H<sub>2</sub>S.
- ~~2.~~ The Applicant (per telephone call with Don Martin October 9, 1980) will amend the AFC for SMUDGE0 #1 such that SMUDGE0 #1 will emit no more than 50 gm/gMW-hr H<sub>2</sub>S.
- ~~3.~~ The NSCAPD staff has reviewed the above amendment, and has concluded that if SMUDGE0 #1 is operated at 50 gm/gMW-hr for hydrogen sulfide emissions it might possibly prevent the attainment of interfere with the maintenance of the state ambient air quality standards for H<sub>2</sub>S, and therefore the project must employ BACT (Best Available Control Technology) of 5 lb/hr emission rate.
- ~~4.~~ The NSCAPCD recognizes the uncertainty in numerical modeling and concludes SMUDGE0 #1 should be designed and planned to operate at 5 lb/hr emission rate (BACT), but could emit at 50 gm/gMW-hr, if the background H<sub>2</sub>S is as low as anticipated.
- ~~5.~~ At this time, it appears that a secondary H<sub>2</sub>S control system will be needed to achieve the emissions level of 5 lb/hr.
- ~~6.~~ Applicant proposes to meet the applicable H<sub>2</sub>S emissions limitations by employing a surface condenser, Stretford unit, and secondary H<sub>2</sub>S control system, if needed.
- ~~7.~~ NSCAPCD Rule 455(a) limits geothermal power plant emissions of sulfur compounds, calculated as SO<sub>2</sub>, to 1,000 ppm or less.



- ~~8.—SMUDGE0 #1 will emit less than 1,000 ppm of sulfur compounds, calculated as SO<sub>2</sub>.~~
- ~~9.—NSCAPCD Rule 420(d) limits geothermal power plant emissions of particulate matter to whichever is the lesser of: a) 0.20 grains per actual cubic foot (ACF), or b) for a source with a process weight rate of 60,000 pounds per hour or more, 40 lb/hr.~~
- ~~10.—Under worst case conditions, SMUDGE0 #1 will emit less than .20 grains of particulate matter per actual cubic foot and less than 40 lbs/hr (provided the Stretford balance tank cooling tower is properly designed).~~
- ~~11.—In the event of any unscheduled outage at SMUDGE0 #1 once it is operational, the Applicant agrees immediately to notify the steam supplier for SMUDGE0 #1.~~
- ~~12.—The NSCAPCD believes that it is reasonable likely that the steam supplier for SMUDGE0 #1 will be able to secure the necessary permits for steam field development.~~
- ~~13.—Based upon the review of the Applicant's amendment to the AFC, the NSCAPCD has determined the following conditions to be necessary to assure compliance with applicable air quality standards:~~

~~A.—Hydrogen sulfide emissions from the power plant shall be no greater than 5 lb/hr but could emit at 50 gm/gMW hr provided SMUD shows to the satisfaction of the APCO that, from normal geothermal operations (namely power plant as well as stacking operations), H<sub>2</sub>S impacts in the Anderson Springs area do not equal or exceed 22 ppb:~~

~~a.—For two years prior to operation or,~~

~~b.—In the event of nonattainment of (a), for two years after commencement of operation (based on the fact significant source reductions will occur from other sources mid-1984 and after).~~

~~An increase in the allowable emission rate for H<sub>2</sub>S will be granted in writing by the NSCAPCD, CEC, and ARB if either (a) or (b) is attained.~~

~~The hydrogen sulfide monitoring programs shall consist of up to three (3) monitoring stations and shall be approvable by the CEC, ARB, NSCAPCD, and LCAPCD.~~

~~B.—Applicant shall return all untreated steam and/or condensate to injection points such that hydrogen sulfide will be treated up to the standard of rule 455(a) during normal power plant operation, plant~~

~~start-up and plant shut-down. Furthermore, the Applicant shall return all condensates to the condenser in such a fashion so that residual H<sub>2</sub>S is stripped and properly conveyed to the ejector/vacuum system.~~

- ~~C. Technical vacuum pumps must be designed such that oil vapors/mist will not be carried to the Stretford facility if the oil would materially decrease the Stretford control efficiency or if particulate emissions to the atmosphere will result (see finding F).~~
- ~~D. The evaporative color on the Stretford equipment will be designed to comply with particulate emission standard of Rule 420(d).~~
- ~~E. Applicant shall install and operate a continuous H<sub>2</sub>S monitoring device in the off-gas vent to the cooling tower. The gas analyzer shall have an accuracy of plus or minus 10 percent of full scale for the 0-50/ppmv range. Data shall be logged on a strip chart or other similar device which will be available for inspection on sight upon request. Applicant shall design for a target date capture of 85 percent on an annual basis. An audible alarm for H<sub>2</sub>S above 10 ppmv shall be incorporated.~~
- ~~F. Although SMUDGE #1 may be licensed on the basis of hydrogen peroxide/catalyst and Stretford/surface condenser system, the Applicant may use other means to comply with the hydrogen sulfide emissions limitation of 5 lbs/hr. The Applicant will submit, no later than two years prior to the scheduled commercial operation date of SMUDGE #1 project, the conceptual design of the finally selected abatement system, including data demonstrating that compliance with the emissions limitations of 5 lbs/hr can be met. Such data shall be submitted to the CEC, the ARB, and NSCAPCD at least 30 days prior to the date intended for commencement of the design of the proposed system. Design shall not proceed until the NSCAPCD/APCD determines that the material submitted is adequate to demonstrate compliance with the H<sub>2</sub>S emissions limitation. The APCD shall render a determination no later than 15 days following the receipt of material from the Applicant.~~
- ~~G. Applicant approved for construction drawings of the secondary abatement system shall be submitted to the CEC, ARB and the NSCAPCD at least 30 days prior to the date intended for the commencement of the system. Construction shall not proceed until the NSCAPCD/APCD determines that the drawings submitted are adequate to demonstrate compliance with the applicable~~

~~limitations. The APCO shall render a determination no later than 15 days following the receipt of the material from the Applicant.~~

~~H. Applicant shall:~~

~~a. By September 1, 1992 determine the feasibility of a continuous, condensate monitoring system for H<sub>2</sub>S, including estimated costs, which is capable of plus or minus 20 percent accuracy and which requires reasonable maintenance. The Applicant shall submit quarterly reports to the APCO, the ARB, and the CEC on its efforts toward these determinations.~~

~~b. In the event that a continuous monitoring system is infeasible or requires unreasonable maintenance, the Applicant shall be required to install an alternative system approved by the APCD.~~

~~I. Applicant shall, during the construction period, appropriately treat the construction site to prevent excessive fugitive dust emissions.~~

~~J. Applicant, within 60 days of commercial operation, shall demonstrate that the applicable emissions limitations of NSCAPCD rules are being maintained during normal power plant operations. Applicant shall submit a detailed performance test plan to the NSCAPCD at least 30 days prior to such tests. Applicant's proposed test plan must receive NSCAPCD approval before such tests may be conducted to achieve compliance. During performance of the compliance testing a representative of the NSCAPCD shall have the right to be present.~~

~~For the purposes of these conditions, "normal" operation is defined as operation of the facility with all abatement equipment installed and operating (including plant start-up and shut-down) to specifications enumerated herein.~~

~~**1-3** SMUD shall obtain written approval from both NSCAPCD and CEC before using any abatement systems other than the hydrogen peroxide/catalyst, Stretford/surface condenser, and turbine bypass system, as approved in the CEC certification, to control H<sub>2</sub>S emissions.~~

~~**Verification:** SMUD shall file a copy of the written approval from the NSCAPCD with the CEC and the USGS prior to beginning construction of any alternative H<sub>2</sub>S emissions abatement system.~~

~~**1-4** SMUD shall submit approved for construction drawings of the power plant secondary H<sub>2</sub>S control system to the CEC only if requested by the CEC.~~

~~**Verification:** If requested, SMUD shall submit such drawings to the CEC at least 30 days prior to commencing construction of the system.~~

~~1-5~~ — DOC Conditions 13E, 13H, and 13J require submittal of a detailed plan for testing the performance of the SMUDGE0 #1 H<sub>2</sub>S emissions abatement systems at normal full load operations. If continuous H<sub>2</sub>S monitors are available, SMUD shall ensure that the detailed plan includes the following test parameters: (1) the test data shall reflect a minimum of 90-100 percent of the gross electricity generating capacity; and (2) in the event that at least 30 days of qualifying data could not be obtained during the 60-day test period specified in the Determination of Compliance, SMUD shall continue to collect test data until the required information has been obtained. The application for a Permit to Operate shall be filed as specified in NSCAPDC rules and regulations.

**Verification:** SMUD shall provide the CEC with a copy of the detailed plan submitted to the NSCAPCD for review and approval and a copy of the plan as approved. In addition, if the test period extends beyond the initial 60 days after commercial operation, SMUD shall file a supplementary report with the CEC and the NSCAPCD which reflects all the results of the performance test.

~~1-6~~ — SMUD Geysers Power Company shall, if requested by the NSCAPCD, operate and maintain an on-site meteorological station capable of determining wind direction, wind speed, and temperature.

**Verification:** SMUD Geysers Power Company shall furnish such data in a form acceptable to the NSCAPCD. SMUD Geysers Power Company shall note the submittals in periodic compliance reports filed with the CEC.

~~1-7~~ — SMUD can participate in the Geysers Air Monitoring Program (GAMP) if it is implemented, to meet the monitoring requirements specified in DOC Condition 13A.

**Verification:** If SMUD participate in the GAMP, SMUD shall request the GAMP committee chairman to forward to the CEC a copy of the MOU when fully executed by the parties. If SMUD does not participate in GAMP SMUD shall submit to the NSCAPCD, LCAPCD, ARB, and CEC for their review, a detailed H<sub>2</sub>S ambient monitoring plan at least 60 days before the monitoring begins.

~~1-8~~ — SMUD shall maintain a log of all power plant outages and abatement equipment malfunctions. The log, at a minimum, shall contain (1) the periods of abatement equipment malfunction, reason for malfunctions, and the corrective action taken; (2) the periods of scheduled and unscheduled outages and the cause of the outages, if known; (3) a summary of any irregularities that occurred with the continuous monitors, if used; and (4) the dates and hours in which SMUDGE0 #1 was in excess of the appropriate H<sub>2</sub>S emission limitation as specified in the DOC.

**Verification:** The NSCAPCD shall notify the CEC and ARB if the log is not properly maintained or access to the log is not provided. The NSCAPCD shall also recommend any action which the district has or will take to correct the problem.

## **A. EMISSION LIMITS**

### **Power Plant and Abatement Systems**

1. The maximum cumulative hydrogen sulfide (H<sub>2</sub>S) emissions from the plant shall not exceed 8.6 pounds per hour (3.8 kg/hr).

**AQ-A1 The Sonoma power plant and associated abatement systems shall comply with Regulation 1 Rule 455(b) –Geothermal Emission Standards. Total emissions of hydrogen sulfide (H<sub>2</sub>S) emissions shall not exceed 8.6 pounds per hour averaged over any one hour-period. Total H<sub>2</sub>S emissions shall be the cumulative emissions to the atmosphere from the power plant and associated abatement equipment. [ref. Rule 455(b), PTO 97-30B Cond. 20, PTO 97-30A Cond. 16]**

**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<sub>2</sub>S content in the main steam supply as required in AQ-C5, 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 8.0 pounds/hour of H<sub>2</sub>S from the Sonoma Power Plant. (ACP). [ref. PSD NC 80-01 Cond. VIII.C.]**

**Verification: The project owner shall verify compliance by conducting an annual performance test on the turbine exhaust system to determine the H<sub>2</sub>S emission rate as required in AQ-C1A.**

**AQ-A3 The exit concentration in the process piping leading from the Stretford system shall not exceed 10 ppmv H<sub>2</sub>S, averaged over any consecutive 60-minute period, unless operating under a Stretford bypass allowance or a District-approved Alternative Compliance Plan (ACP). [ref. PTO 97-30A Cond. 17]**

**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.**

2. ~~Annual emissions from the cooling tower shall not exceed, on a calendar year basis, 14.5 tons per year of hydrogen sulfide (H<sub>2</sub>S), 20.3 tons per year particulate matter less than 10 microns in diameter (PM-10) and 15.3 tons per year particulate matter less than 2.5 microns in diameter (PM-2.5).~~

**AQ-A5 Annual emissions from the cooling tower shall not exceed, on a calendar year basis, 14.5 tons per year of hydrogen sulfide (H<sub>2</sub>S). [ref. Rule 240(d)]**

**Verification: The project owner shall maintain records of total H<sub>2</sub>S as indicated in Condition AQ-D7 and submit reports as indicated in Condition AQ-E2. Records shall be based on required source testing in Condition AQ-C1, and an annual summation from January through the end of December.**

**AQ-A6 The power plant and associated abatement systems shall comply 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 perform a source test 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-A7 Annual emissions from the cooling tower shall not exceed, on a calendar year basis, 20.3 tons per year particulate matter less than 10 microns in diameter (PM-10) and 15.3 tons per year particulate matter less than 2.5 microns in diameter (PM-2.5). [ref. Rule 240(d)]**

**Verification: The project owner shall verify compliance through monitoring as indicated in AQ-C4. The project owner shall maintain records according to AQ-D6 and AQ-D7 and submit reports as indicated in AQ-E2. Records shall be based on required sampling and an annual summation from January to December.**

### **Emergency Engine**

**AQ-AE1 S-8, 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 S-8, particulate emissions shall not exceed an emission rate of 0.11 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 S-8, combined non-methane hydrocarbons and nitrogen oxide emissions shall not exceed an emission rate of 2.54 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 S-8, carbon monoxide emissions shall not exceed an emission rate of 1.19 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**

1. \_\_\_\_\_ The permit holder shall install drift eliminators rated at 0.001% or less at the cooling tower.

### **Power Plant and Abatement Systems**

**AQ-B1 The project owner shall not operate the plant unless untreated gases are vented to the Stretford Air Pollution Control System unless operating under a Stretford bypass allowance. Stretford bypasses shall be limited to no more than 6 allowances per calendar year. Each Stretford bypass allowance shall be carried out as expeditiously as possible and shall not exceed a total duration of 8 hours. During a Stretford bypass allowance main steam flow shall not exceed 150,000 pounds per hour. Direct condensate re-injection shall be maximized to reduce H<sub>2</sub>S in the cooling towers. The project owner shall notify the District in writing at least 1 day prior to conducting a Stretford bypass. Stretford bypass allowances shall only be utilized during Stretford maintenance procedures. The secondary H<sub>2</sub>S abatement system and the Stretford abatement system**

**shall be kept in good working order and operated as necessary in order to limit H<sub>2</sub>S 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 97-30A Cond. 15A, PTO 97-30B Cond. 14, 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-B2 In the event that chemical secondary condensate treatment is necessary and 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 abatement solution concentration shall be maintained at or above the ppmw concentration recommended in the power plant operating guidelines as necessary to abate H<sub>2</sub>S emissions from the power plant to the emission limit specified in Condition AQ-A1. [ref. PTO 97-30B 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-B3 Any continuously operated abatement solution feed systems shall have 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 97-30B 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-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 97-30A Cond. 14, PTO 97-30B 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-B5 Untreated vent gas shall be emitted to the atmosphere only during upset/breakdown situations pursuant to Regulation 1 Rule 540. During periods of cold start-ups the vent gas H<sub>2</sub>S 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 97-30B 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-B6 All areas in the immediate vicinity and under the project owner's responsibility shall be properly treated to control fugitive dust. [ref. PTO 97-30B Cond. 21]**

**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<sub>2</sub>S 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 97-30B Cond. 21]**

**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 Conditions AQ-A2, AQ-A4, and 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 Conditions AQ-A2, AQ-A4, and 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 and AQ-A3. 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 and AQ-A3. 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 project owner shall operate and maintain the following air pollution control equipment at the Sonoma Power Plant:**

- A. The non-condensable gas stream exiting from the surface condenser shall be ducted to an operating Stretford process unit.**
- B. Condensate exiting from the surface condenser shall be treated as necessary to reduce the levels of dissolved hydrogen sulfide. The project owner shall use a Hydrogen Peroxide/ Iron Catalyst system to accomplish this reduction. With prior written EPA approval, the project owner may use an alternative secondary treatment system.**
- C. The project owner shall have installed equipment to allow the turbine to be bypassed during plant startup and scheduled and unscheduled outages of the turbine. This bypass shall allow all other pollution control devices to continue to treat all incoming steam. At no times shall the project owner allow the venting of untreated steam to the atmosphere from the Sonoma Power Plant.**
- D. The project owner shall have installed drift controls on the power plant cooling towers to minimize emissions of particulate matter. [ref. PSD NC 80-01 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.**

**AQ-B12 The project owner shall, in each calendar year, limit unscheduled outages for the Sonoma Power Plant to no more than 3 stacking events.**

**The project owner shall have on file with the District an approved operating protocol describing the methods that will be used to meet the 3-stacking event performance standard. The protocol must include a description of the operational procedures between the steam supplier and project owner, project owner's operational procedures, and equipment to meet the above standard. The terms and requirements of the protocol may be modified by the Air Pollution Control Officer or CPM for good cause upon written request from the project owner.**

**In the event the project owner is not able to meet the standards specified above, the following shall be required:**

**The project owner shall prepare and submit a revised "plan" to the Air Pollution Control Officer and CPM, within 30 days of the end of the**

**month in which the outage limit is exceeded, to achieve the outage standards set forth in this permit condition. At a minimum, the measures to be considered in the "plan" shall include: improved coordination of the power plant and steam field operations, improved alarming and control systems, increased duration of manned operation of the power plant, improved preventative maintenance, and design modifications as may be indicated by the operating history of this unit.**

**Within 30 days of receipt of the "plan" the Air Pollution Control Officer shall determine whether the "plan" is satisfactory and, if so, shall approve the "plan". Upon approval, the revised "plan" shall supersede the old plan and become a part of the terms and conditions of this permit. [ref. PTO 97-30B Cond. 17]**

**Verification: The project owner shall submit revised plans to the CPM for approval. 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-8, 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-8, 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-8, 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-8, 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-8, 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**

1. Within 30 days of start up the permit holder shall conduct a performance evaluation of the new cooling tower, including particulate matter and H<sub>2</sub>S emission rates.

**AQ-C1 The project owner shall, on a monthly basis, conduct a source test of the cooling tower to determine the H<sub>2</sub>S emission rate to verify compliance with Condition AQ-A1. A source test shall also be conducted every time the Stretford bypass allowance is utilized. District Method 102 shall be utilized to determine the H<sub>2</sub>S emission rate. The project owner 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 Conditions AQ-1. 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 97-30B Cond. 20]**

**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 plan modification to the CPM in the following quarterly report.**

**AQ-C1A The project owner shall conduct or cause to be conducted performance tests on the turbine exhaust system to determine the H<sub>2</sub>S emission rate to verify compliance with Condition AQ-A2. Performance tests shall be conducted in accordance with Northern Sonoma County APCD Method 102, unless otherwise specified by the U.S. EPA. The project owner shall furnish the Northern Sonoma County APCD, the California Air Resources Board and the U.S. EPA (Attn: Air-5) a written report of such tests. All performance tests shall be conducted at the maximum operating capacity of the plant. Performance tests shall be conducted at least on a yearly basis and at such times as shall be specified by the U.S. EPA. [ref. PSD NC 80-01 Cond. VIII.D]**

**Verification: The project owner shall submit source test results according to Condition AQ-E1.**

**AQ-C2 The project owner shall provide platforms, electrical power and safe access to sampling ports to enable representatives of the District, ARB and U.S. EPA 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 97-30B Cond. 12, PSD NC 80-01 Cond. VIII.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.**

2. ——— The operator shall submit to the District, for prior approval, a performance evaluation test plan at least 15 days prior to conducting the tests.

**AQ-C3 The project owner, as requested by the Air Pollution Control Officer or CPM, shall conduct a District-approved performance test for particulate matter (PM), H<sub>2</sub>S, 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 of the Air Pollution Control Officer, the project owner shall submit to the District at least 45 days prior to testing a detailed performance test plan. The District shall approve, disapprove or modify the plan within 45 days of receipt of the plan. The project owner shall incorporate the District's comments or modifications to the plan which are required to assure compliance with the District'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 by the Air Pollution Control Officer. [ref. PTO 97-30B Cond. 11]**

**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.**

3. ~~Compliance with the particulate mass emission limitation from the cooling tower shall be based on the evaporative cooling tower manufacturers design drift eliminator drift rate, 0.001 percent, 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.~~

**AQ-C4 Compliance with the particulate mass emission limitation shall be estimated using calculations based on the evaporative cooling tower manufacturer's design drift eliminator drift rate, 0.001 percent for the main cooling tower and 0.002% for the Stretford cooling tower, multiplied by the circulating water rate or Stretford solution circulating 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 97-30A Cond. 16, PTO 97-30B Cond. 22]**

**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<sub>2</sub>S concentrations shall be determined minimally on a weekly basis and any additional times as required by the operating protocol or ACP. [ref. Rule 240(d)]**

**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** **In the event that chemical secondary condensate treatment is necessary the project owner shall perform a condensate H<sub>2</sub>S concentration test, on a frequency that is defined in the Alternative Compliance Plan or 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. Rule 240(d)]**

**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<sub>2</sub>S 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<sub>2</sub>S 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** **In the event that chemical secondary condensate treatment is necessary, all sampling protocols, chemical feed charts, targets and operational guidelines for using said charts and targets, necessary to abate H<sub>2</sub>S 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<sub>2</sub>S 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<sub>2</sub>S in the treated gas is in excess of 10 ppmv. The project owner shall respond to the alarm with appropriate mitigative measures. Mitigative measures taken shall be logged in the power plant abatement log book. In the event H<sub>2</sub>S concentrations are in excess of 10 ppmv and the range of the CCM is exceeded, the project owner shall test for H<sub>2</sub>S 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 25 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<sub>2</sub>S exceeds the hourly average limit of 10 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 Air Pollution Control Officer 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" H<sub>2</sub>S emission limitations of condition AQ-A1. Written notification from the Air Pollution Control Officer must be received by the project owner prior to any change in monitoring specifications. [ref. PTO 97-30A Cond. 16, 17]**

**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<sub>2</sub>S/meteorological monitoring/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, 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 permit 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 97-30B Cond. 23]**

**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, project owner shall conduct a District-approved source test to determine NOx and particulate emissions from the diesel-powered generator, S-8. 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 In the event that chemical secondary treatment is necessary, the project owner shall maintain a weekly abatement solution 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<sub>2</sub>S 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 Condition 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<sub>2</sub>S 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 97-30B Cond. 20]**

**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(a) 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 inspector. Any leak in the above listed pieces of equipment exceeding the limitations of Condition AQ-B7(a) 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 97-30B Cond. 21]**
- 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(b) 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 inspector. Any leak in the above listed pieces of equipment exceeding the limitations of Condition AQ-B7(b) 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 97-30B Cond. 21]**

**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-A1, AQ-A4, 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.**

1. ~~In order to demonstrate compliance with the above permit 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 H<sub>2</sub>S, PM-10 and PM-2.5 annual emissions to date.~~

**AQ-D7** ~~In order to demonstrate compliance with the above permit 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~~ **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, and AQ-A2.**
- 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.**
- i. **Total H<sub>2</sub>S, PM-10 and PM 2.5 annual emissions to date.**

**[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 above permit conditions for S-8, 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.**
- d. **Type and amount of fuel purchased.**

**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**

1. ~~Within 30 days of conducting the performance tests pursuant to Condition A. I. the permit holder shall submit to the District the test results from the performance tests as outlined in the performance evaluation plan.~~

### **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<sub>2</sub>S.**
- 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 main steam H<sub>2</sub>S 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 carbon dioxide equivalent (CO<sub>2</sub>e) emissions**
- j. **Annual H<sub>2</sub>S, PM-10 and PM-2.5 emissions.**

**Additional requirement for reports submitted to the Energy Commission:**

- k. **Hours of operation for the emergency engine S-8. 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.**

**AQ-E4 Outages which Result in Steam Stacking**

**The project owner shall on a quarterly basis, provide a written report to the District with the outage events, cause of each outage, and the balance of events for the year for all outages which result in steam stacking. The Air Pollution Control Officer may change the frequency of reporting. The project owner shall inform the District when total outages have reached three (3) in any consecutive 12-month period. The District shall be notified within 5 days of the 3<sup>rd</sup> outage. [ref. PTO 97-30B Cond. 17**

**Verification: The project owner shall provide the CPM with any outage report submitted to the District in the following quarterly report. The project owner shall complete a statement of compliance the annual report submitted to the CPM. The project owner shall make the site and records available to the CPM upon request.**

## **F. PLANT-WIDE CONDITION**

**AQ-F1 The project owner shall comply with the following District regulations:**



- 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 6 Subpart M)-Asbestos**
- e. **Regulation 1 Rule 540- Equipment Breakdown**
- f. **Regulation 2- Open Burning**
- g. **40 CFR Part 82- Chlorinated Fluorocarbons**

**If in the event this stationary source as defined in 40 CFR Part 68.3, becomes subject to Part 68, this stationary source shall submit a risk management plan (RMP) by the date specified in Part 68.10. As specified in Parts 68, 70, and 71, this stationary source shall certify compliance with the requirements of Part 68 as part of the annual compliance certification required by 40 CFR Part 70 or 71.**

**If in the event this stationary source as defined in 40 CFR Part 63, becomes subject to Part 63, this stationary source shall notify the District and CPM within 90 days of becoming subject to the regulation. The stationary source 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**

### **1—Facilities Operation**

- a. ~~Operation under this permit 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. This permit must be posted in a conspicuous place nearby or, as per rule 240.~~
- b. ~~All equipment of this PERMIT shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [NSCAPCD Rule 240.d]~~

### **2—Permit Expiration**

~~This Authority to Construct is valid for one year and may be extended by an additional year with the payment of the annual renewal fees. After construction of the listed equipment, the permit to operate shall remain valid provided the annual~~

~~renewal fees are paid in accordance with District Rule 300 and all Permit conditions are met. [NSCAPCD Rule 300.5.1]~~

### **AQ-G1 Payment of Fees**

**This Permit 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 U.S. EPA pursuant to section 502(a) of the Clean Air Act. [ref. Reg 5.670]**

**Verification: No verification needed.**

### **AQ-G25 Right to Entry and Inspection**

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

- a. to enter upon the premises where the source is located or areas in which any records are required to be kept under the terms and conditions of this Permit; and
- b. at reasonable times to have access to and copy any records required to be kept under the terms and conditions of this Permit; and
- c. to inspect any equipment, operation, or method required in this Permit; and
- d. to sample emissions from the source.

~~[NSCAPCD Rule 240.e] [ref. Reg 5.610e]~~

**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 Title V Operating Permit expires on August 8, 2021. The project owner shall submit a complete application for renewal of this Title V Operating Permit no later than 6 months prior to expiration and no earlier than one year prior to expiration. If a complete application for renewal has not been submitted in accordance with these deadlines, the facility may not operate after August 7, 2021. [ref. Reg 5.660]**

**The project owner shall comply with all conditions of this permit. Any non-compliance with the terms and conditions of this 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 this 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)]**

**This 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 within 30 days any information that the District requests in writing 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. 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 shall make the site and records available for inspection by representatives of the District, ARB, and Energy Commission upon request.**

3. ~~Severability~~

~~The provisions of this PERMIT are severable, and, if any provision of this PERMIT is held invalid, the remainder of this PERMIT shall not be affected.~~

**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(g)]**

**Verification: No verification needed.**

4. ~~Notification Requirements~~

~~a. Applicant shall notify the District at least 3 days prior to the start up of this source~~

~~b. Upsets and Breakdowns – In the event of any failure of process or abatement equipment to operate in a normal manner which results in an increase in emissions above any allowable emissions limit stated in District Rules or in conditions to this PERMIT the Operator shall notify the District as provided by Rule 540 regarding upset breakdown conditions to petition for shelter from enforcement actions. In order to qualify for such shelter an initial notification of the equipment failure must be reported to the District Office no later than one (1) hour after its detection during normal office hours (8:00 am to 4:30 pm) or one (1) hour after the start of the next regular business day, whichever is sooner. [NSCAPCD Rule 540]:~~

~~c. ownership of facilities to be constructed or modified, this PERMIT together with its terms and conditions shall be binding on all subsequent owners and operators. The Applicant shall notify the succeeding owner and operator of the~~

~~existence of this PERMIT and its conditions by letter, a copy of which shall be forwarded to the Control Officer. [NSCAPCD Rule 240.j.]~~

~~[NSCAPCD Rule 240.e].~~

#### **AQ-G6   Transfer of Ownership**

**In the event of any changes in control or ownership of facilities to be modified and/or operated, this Permit is 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 this Permit and its 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 5.640]**

**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 the U.S. EPA approval. [ref. 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 the U.S. EPA approved process. [ref. 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 Malfunction**

**The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in emissions above allowable emissions limit stated in Condition AQ-A2. In addition, the Regional Administrator shall be notified in writing within fifteen (15) days of any such failure. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of the initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under Condition AQ-A2, and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violation of this permit or of any law or regulations which such malfunction may cause. [ref. PSD NC 80-01 Cond. III]**

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

#### **AQ-G10 Permit Posting**

**Operation under this permit must be conducted in compliance with all data specifications included in the application which attest to the**

**operator's ability to comply with District rules and regulations. This permit 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 permit cannot be so placed, the permit 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-G11 Compliance Certification**

**Compliance reports and certifications shall be submitted annually by the responsible official of this facility to the Northern Sonoma County Air Pollution Control District, U.S. 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. Reg 5.650]**

**This license does not authorize the emission of air contaminants in excess of those allowed by the Health & Safety Code of the State of California or the Rules and Regulations of the Northern Sonoma County Air Pollution Control District. This Permit cannot be considered as permission to violate existing laws, ordinances, regulations or statutes of other governmental agencies. [ref. Rule 240(d)]**

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

#### **AQ-G12 Permit Modification**

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

**Verification: No verification needed.**

## REFERENCES

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- ARB 2020a** - California Air Resources Board. Air Designation Maps available on ARB website. <http://www.arb.ca.gov/desig/adm/adm.htm> Accessed July 2020.
- ARB 2020b** - California Air Resources Board. California Ambient Air Quality Data Standards available on ARB website. <http://www.arb.ca.gov/research/aqs/aqs.htm> Accessed July 2020
- GPC 2020** – Geysler Power Company – Sonoma Geothermal Project (Unit 3) Petition for Modification for the Installation of a Standby Pump for the Cooling Tower Wet-Down System. (TN 232608) April 1, 2020
- GPC 2020a** – Geysler Power Company – Sonoma (Unit 3) Petition for Modification for Installation of Diesel Standby Pump -Air District Health Risk Analysis. (TN 233972) July 21, 2020
- CEC 1981** – California Energy Commission – Sonoma (Unit 3) 1981 Final Decision (TN 206764) docketed November 24, 2015
- CEC 1981b** – California Energy Commission – Sonoma (Unit 3) Compliance Plan (TN 206765) docketed November 24, 2015
- CEC 2010** – California Energy Commission – Order Approving Termination of the MOU & LOU Between CEC and USGS (TN 58491) docketed September 16, 2010
- CEC 2016**– California Energy Commission – Final Permission for Exe. Order B-36-16 Expedited Processing & N. Sonoma Air Pollution Control District Authority to Construct (ATC) (TN 210231) docketed February 8, 2016
- NSCAPCD 2016** – Northern Sonoma County Air Pollution Control District – Title V Operating Permit effective August 8, 2016
- NSCAPCD 2020** – Northern Sonoma County Air Pollution Control District – Evaluation Report Geysers Power Company Emergency Standby Wet-Down Diesel Drive Engine – Application Number 20-03 issued March 4, 2020
- NSCAPCD 2020b** – Northern Sonoma County Air Pollution Control District – Authority to Construct and Temporary Permit to Operate 20-03 issued March 9, 2020
- U.S. EPA 2020a** – United States Environmental Protection Agency. The Green Book Nonattainment Areas for Criteria Pollutants website. <https://www.epa.gov/green-book> Accessed October 2019.



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