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CALIFORNIA ENERGY COMMISSION

CALIFORNIA NATURAL RESOURCES AGENCY

STATEMENT OF STAFF APPROVAL OF POST CERTIFICATION CHANGE

HIGH DESERT POWER PROJECT (97-AFC-01C)

On September 20, 2022, the High Desert Power Project, LLC (HDPP), the project owner, filed a Post Certification Petition for Changes in Project Design, Operation or Performance and Amendments to the Commission Decision (Petition) (TN#246160) with the California Energy Commission (CEC) requesting to amend the High Desert Power Project (HDPP) Final Commission Decision (Final Decision).

The HDPP is an 830-megawatt, combined-cycle power plant that was certified by the Energy Commission on May 2000, and began commercial operations in April 2003. The facility is located in the city of Victorville, in San Bernardino County.

DESCRIPTION OF PROPOSED CHANGE

The project owner seeks approval to modify the following:

- Air Quality conditions of certification to conform with the Title V Operating Permit issued by the Mojave Desert Air Quality Management District (MDAQMD) for the planned turbine efficiency improvements.

The HDPP efficiency improvements will increase the turbine firing temperature with new Ultra-Low Nitrogen Oxides (NOx) combustion and turbine hardware.

To access the petition to amend, go to the CEC's project webpage , https://www.energy.ca.gov/powerplant/combined-cycle/high-desert-power-plant. In the box labeled "Compliance Proceeding" click on the Docket Log (97-AFC-01C) and locate the petition by the transaction number noted above.

CEC STAFF REVIEW AND CONCLUSIONS

California Code of Regulations, title 20, section 1769(a)(1) requires a project owner to petition the CEC for the approval of any change the project owner proposes to the project design, operation, or performance requirements of a certified facility. Pursuant to 1769(a)(3)(A), the petition may be approved by CEC staff (staff) only if the following criteria are met:

i. There is no possibility that the change may have a significant impact on the environment, or the change is exempt from the California Environmental Quality Act;
ii. The changes would not cause the project to fail to comply with any applicable laws, ordinances, regulations, or standards; and
iii. The changes will not require a change to, or deletion of, a condition of certification adopted by the Commission in the final decision or subsequent amendments.

Section 1769(a)(3)(B) allows staff to approve changes to air quality conditions of certification provided that:

i. the criteria in subdivisions (a)(3)(A)(i) and (ii) are met; and
ii. no daily, quarterly, annual or other emission limit will be increased as a result of the change.

Staff reviewed the petition for potential environmental effects and consistency with applicable laws, ordinances, regulations, and standards (LORS). Staff's conclusions for all technical and environmental areas are summarized in **Table 1**.

TABLE 1
Summary of Conclusions for all Technical and Environmental Areas

Technical Areas Reviewed	CEQA				Conforms with applicable LORS
	Potentially Significant Impact	Less Than Significant Impact with Mitigation (with Revised or New COCs)	Less Than Significant Impact (with or without Existing COCs)	No Impact	
Air Quality			X		X
Biological Resources				X	X
Cultural Resources				X	X
Efficiency				X	
Facility Design					N/A
Geological Resources				X	X
Hazardous Materials Management			X		X
Land Use				X	X
Noise and Vibration			X		X
Paleontological Resources				X	X
Public Health			X		X
Reliability					
Socioeconomics				X	
Soil and Water Resources				X	X
Traffic and Transportation				X	X
Transmission Line Safety and Nuisance				X	X
Transmission System Engineering					X
Visual Resources				X	X
Waste Management			X		X
Worker Safety and Fire Protection			X		X

Areas shown in gray are not subject to CEQA consideration or have no applicable LORS the project must comply with.

Staff has determined that the modified project would continue to comply with applicable LORS, and the project change would not result in any significant adverse environmental impacts or require a change to any conditions of certification (COCs), other than the changes to air quality conditions of certification. The bases for each of staff's conclusions are provided below:

AIR QUALITY

The petitioner's request to upgrade natural gas turbine equipment and perform administrative updates to the facility's air quality COCs would not result in significant air quality related impacts. No increases to the facility's emission limits are proposed, and the turbine upgrades would not impact the facility's ability to comply with applicable LORS. The modified HDPP will not have a significant impact on the ambient air quality and the facility's greenhouse gas emissions would not increase beyond what was previously analyzed and therefore will have a less than significant impact on the environment. Greenhouse emissions would also continue to be mitigated through the HDPP's participation in CARB's cap-and-trade program.

To ensure the CEC's COCs maintain consistency with the MDAQMD's permit requirements, staff has proposed to modify AQ COCs **AQ-16**, **AQ-18**, **AQ-29**, and **AQ-31**, to incorporate administrative changes to the Title V permit and modifications the MDAQMD made to incorporate conditions from the HDPP's Federal Prevention of Significant Deterioration (PSD) Permit that were absent in the Title V permit. CEC staff also proposes to add **AQ-40**, **AQ-41**, **AQ-42**, **AQ-43**, **AQ-E1**, **AQ-E2**, **AQ-E3**, **AQ-E4**, **AQ-E5**, **AQ-E6**, **AQ-E8**, **AQ-EE1**, **AQ-EE2**, and **AQ-FE1**, to incorporate the MDAQMD engine permits, add reasonable possibility requirements triggered by the use of the unused capacity exemption in the PSD analysis, and add the requirement for a post-upgrade project compliance test.

See attached Air Quality analysis for details.

BIOLOGICAL RESOURCES

The proposed project changes would have no potential to impact biological resources, as they entail no ground disturbance. Effects of reduction of nitrogen oxides may be considered beneficial to biological resources.

CULTURAL RESOURCES

The proposed project changes would have no potential to impact cultural resources. There would be no ground disturbance and therefore buried archaeological resources could not be impacted. Additionally, the alterations would not visually impact other cultural resources.

EFFICENCY

The turbine upgrade would slightly increase the nominal turbine rating, capacity output, and efficiency. The increase in thermal efficiency would be roughly three to four percent and increase the power generation by approximately 50 MW. There would be no adverse impact to thermal efficiency.

FACILITY DESIGN

There would be no new construction as the result of this petition to amend. There would be no impact to facility design.

GEOLOGICAL AND PALEONTOLOGICAL RESOURCES

The planned efficiency improvements would occur within the existing power block area and require no excavation, earth moving, or foundation installation. Therefore, the proposed modification would not affect the paleontological or geological resources as described in the Final Decision. The proposed modification does not require changes to the COCs.

HAZARDOUS MATERIALS MANAGEMENT

The proposed efficiency improvements would not use any extremely hazardous materials and the use of hazardous materials during construction would comply with applicable LORS. Therefore, the proposed efficiency improvement would not have a significant impact on the environment or the facility's hazardous materials management.

LAND USE

The efficiency improvements would be performed during required scheduled maintenance for the HDPP and would not change the project's design or operations. The project would remain in compliance with applicable LORS and no changes to existing Land Use COCs would be required. No impact to land use would occur.

NOISE AND VIBRATION

Activities associated with this petition to amend would be identical to those that take place during normal maintenance activities and outages. Any noise generated during these activities would be temporary, intermittent, and consistent with the local noise ordinance (City of Victorville Section 13.01). This work would result in a less-than-significant impact with implementation of the existing Noise COCs in the Final Decision.

The operational noise would not be affected as the result of this petition to amend.

PUBLIC HEALTH

The proposed turbine equipment upgrades and administrative changes to the Air Quality COCs would result in an increase in maximum hourly emissions of toxic air contaminants (TAC). To quantify the impact on public health, the MDAQMD performed a health risk prioritization analysis of the proposed changes. The prioritization analysis of the modified HDPP showed that the proposed changes would be below the MDAQMD public health thresholds of significance and therefore have a less than significant impact on public health.

RELIABILITY

The project modifications would not adversely impact the reliability of the project. The turbine upgrade would increase capacity, thereby, increasing grid reliability by serving the transmission grid to which it is connected.

SOCIOECONOMICS

The efficiency improvements would be performed during required scheduled maintenance for the HDPP and would not change the project's operations or workforce needs. No changes to socioeconomics COCs are required. No impact to socioeconomics would occur.

SOIL AND WATER

The planned efficiency improvements would occur within the existing power block area and would not require construction related grading or excavation. The proposed modification would not affect soil and water resources as described in the Final Decision. No changes to the COCs would be required.

TRAFFIC AND TRANSPORTATION

The efficiency improvements would be performed during required scheduled maintenance for the HDPP and would not change the project's design or operations. The project would remain in compliance with applicable LORS and no changes to existing transportation COCs would be required. No impact to traffic and transportation would occur.

TRANSMISSION LINE SAFETY AND NUISANCE

No substantial changes to the off-site transmission system are anticipated due to the proposed turbine equipment upgrades. Therefore, there would be no potential for impacts related to transmission line safety and nuisance. The implementation of the existing conditions of certification adopted in the Final Decision would ensure continued compliance with LORS.

TRANSMISSION SYSTEM ENGINEERING

The proposed efficiency improvement of replacement of existing combustion turbine parts including blades, vanes, rings, and seals. The efficiency improvement will result in increasing the project output estimated to be 49.7 MW. The additional power output to the existing transmission grid was approved by the California Independent System Operator that the total HDPP generation would not exceed the approved capacity of 950 MW.

The proposed efficiency improvement would not cause additional downstream transmission impacts other than those identified in the approved HDPP. The project will comply with applicable LORS and will not require a change to any of the COCs.

VISUAL RESOURCES

The efficiency improvements would be performed during required scheduled maintenance for the HDPP and would not change the project's design or operations. The project would remain in compliance with applicable LORS and no changes to existing visual resources COCs would be required. No impact to visual resources would occur.

WASTE MANAGEMENT

The proposed modification would not require changes to the waste management setting described in the Final Decision. The proposed modification would not result in an increase in waste generation at the site, beyond the normal construction waste generated during a maintenance outage. No new waste streams other than those already identified in the waste management plan would be generated. The proposed modifications would not require additional mitigation measures and would conform to applicable LORS related to waste management. Therefore, the proposed modification is not expected to have significant impacts to waste management.

WORKER SAFETY AND FIRE PROTECTION

Continued compliance with existing COC SAFETY-1 would ensure that the proposed efficiency improvements would not have a significant impact on worker safety or the offsite public and would continue to comply with applicable LORS.

CALENVIROSCREEN 4.0

Staff reviewed CalEnviroScreen 4.0 data to determine whether the United States census tract where the High Desert Power Plant is located (6071980200) is identified as a disadvantaged community. This science-based mapping tool is used by the California Environmental Protection Agency (CalEPA) to identify disadvantaged communities based on geographic, socioeconomic, public health, and environmental hazard criteria pursuant to Health and Safety Code section 39711 as enacted by Senate Bill 535 (De León, Chapter 830, Statutes of 2012). The census tract (6071980200) does not have a CalEnviroScreen 4.0 overall percentile score because of a low population or the socioeconomic and/or health data are unreliable. The CalEnviroScreen 4.0 cumulative pollution score for this census tract is 4.25 and, thus, is not identified as a disadvantaged community[1].

ENVIRONMENTAL JUSTICE

Environmental Justice Figure 1 shows 2020 census blocks in the six-mile radius of the High Desert Power Plant 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.

[1] The four categories of geographic areas identified by CalEPA as disadvantaged are: 1) Census tracts receiving the highest 25 percent of overall scores in CalEnviroScreen 4.0, 2) Census tracts lacking overall scores in CalEnviroScreen 4.0 due to data gaps, but receiving the highest 5 percent of CalEnviroScreen 4.0 cumulative pollution burden scores, 3) Census tracts identified in the 2017 DAC designation, regardless of their scores in CalEnviroScreen 4.0, and 4) Lands under the control of federally recognized Tribes. Source: CalEPA Final Designation of Disadvantaged Communities: May 2022 https://calepa.ca.gov/envjustice/ghginvest/

Based on California Department of Education data in the **Environmental Justice Table 1**, staff concluded that the percentage of those living in the Lemoore Union Elementary School District (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. Thus, it is considered an EJ population based on low income as defined in *Guidance on Considering Environmental Justice During the Development of Regulatory Actions*.

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

SCHOOL DISTRICTS IN SIX-MILE RADIUS	Enrollment Used for Meals	Free or Reduced-Price Meals	
Adelanto Elementary	8,044	6,204	77.1%
Victor Elementary	12,470	10,878	67.2%
Oro Grande	5,359	3,989	74.4%
REFERENCE GEOGRAPHY			
San Bernardino County	398,648	268,060	67.2%
Source: CDE 2022. California Department of Education, DataQuest, Free or Reduced Price Meals, District level data for the year 2021-2022, http://dq.cde.ca.gov/dataquest/.			

The following technical areas (if affected) 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.

FIGURE 1

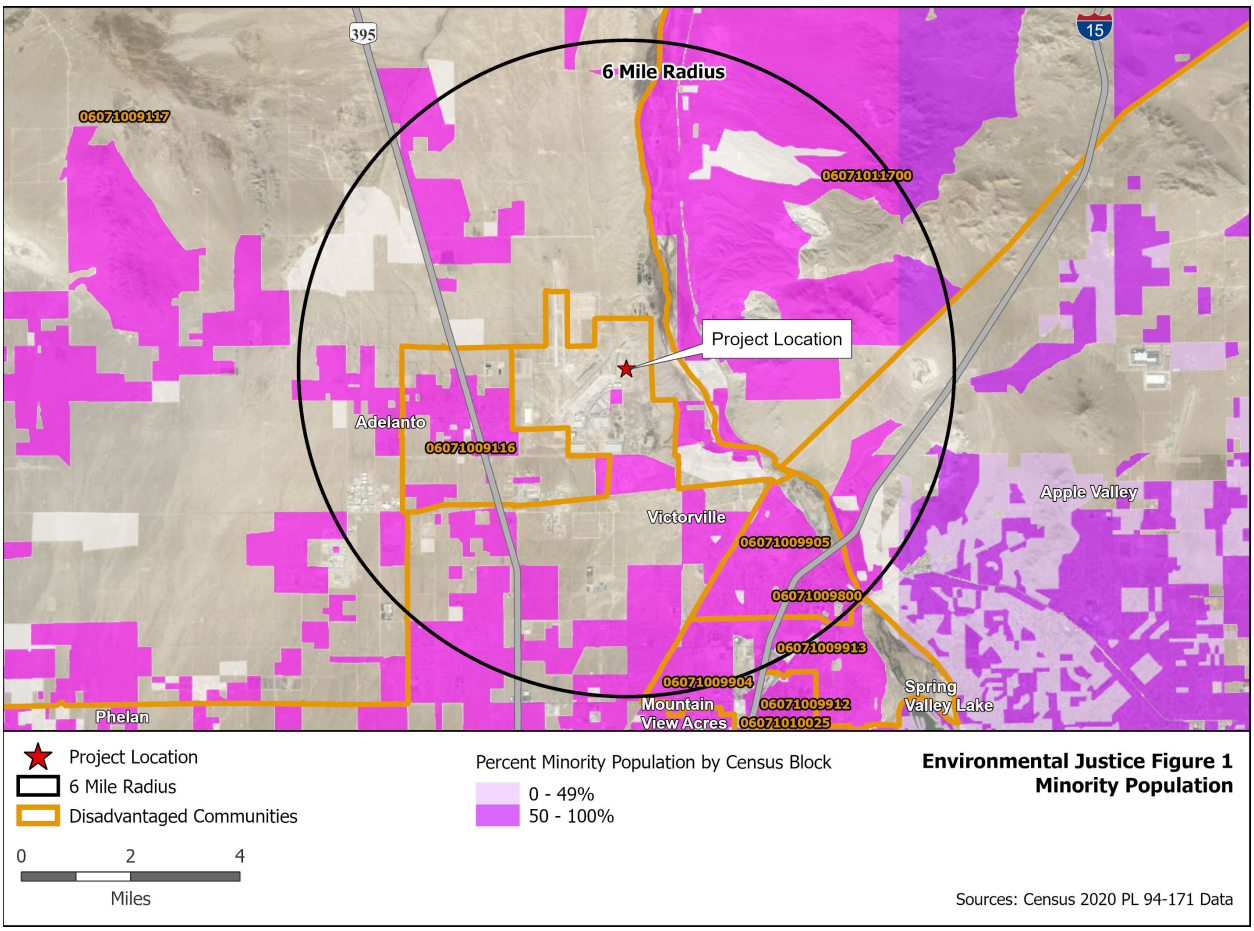
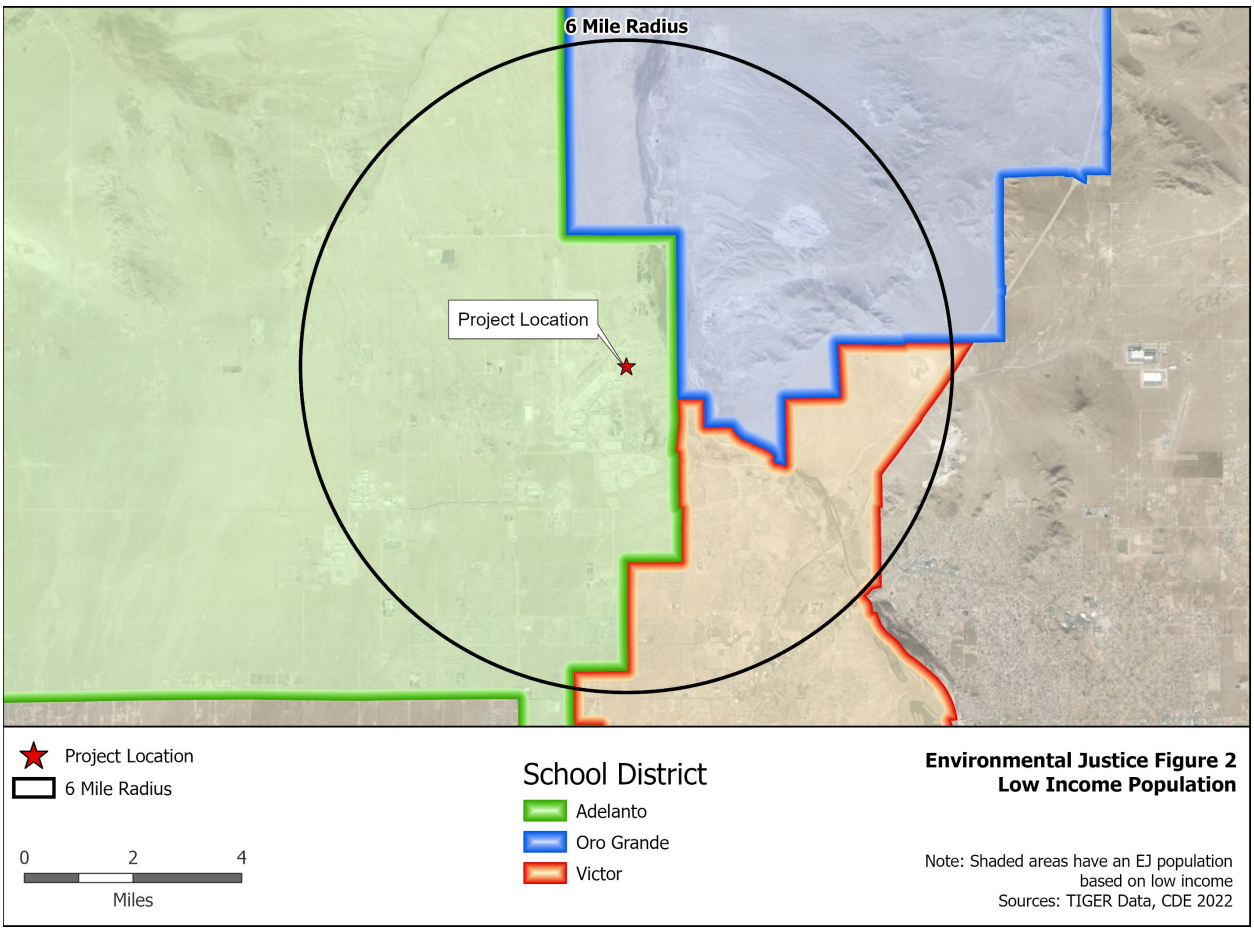

395
15
6 Mile Radius
060710091117
060710111700
Project Location
Adelanto
060710091116
Victorville
Apple Valley
060710099905
060710099800
060710099913
060710099904
060710099912
060710100025
Mountain View Acres
Spring Valley Lake
Phelan
Project Location
6 Mile Radius
Disadvantaged Communities
0
2
4
Miles
Percent Minority Population by Census Block
0 - 49%
50 - 100%
Environmental Justice Figure 1
Minority Population
Sources: Census 2020 PL 94-171 Data

FIGURE 2



Environmental Justice Conclusions

For the technical areas that address EJ and would be affected by the project change—Air Quality—staff concludes that impacts would be less than significant, and thus impacts on the EJ population, represented in **Figures 1** and **2**, and **Table 2**, would be less than significant. In the Air Quality analysis, staff proposes new COCs and changes to existing COCs to mitigate potentially significant impacts on the environment. Staff has determined that by adopting the proposed new COCs and changes to the existing COCs, the proposed project change(s) would not cause significant impacts for any population in the project's six-mile radius, including the EJ population. Impacts to the EJ population are less than significant.

CEC STAFF DETERMINATION

Staff has determined that the petition meets the criteria for approval by staff, and therefore, submission to the CEC for approval is not required. Specifically, based on the environmental and other analysis set forth above, staff has determined the proposed changes described in the petition, including changed to air quality conditions of certification, meet the following requirements:

1. There is no possibility that the change may have a significant impact on the environment, or the change is exempt from the California Environmental Quality Act;
2. The changes would not cause the project to fail to comply with any applicable laws, ordinances, regulations, or standards;
3. Other than air quality, the changes will not require a change to, or deletion of, a condition of certification adopted by the Commission in the final decision or subsequent amendments; and
4. Regarding the changes to the air quality conditions of certification, no daily, quarterly, annual or other emission limit will be increased as a result of the change.

Staff also concludes that none of the findings specified in 1748(b) apply to the proposed changes and the proposed changes do not meet any of the criteria requiring the production of subsequent or supplemental review pursuant to Public Resources Code section 21166 and California Code of Regulations, tit. 20, section 15162.

WRITTEN COMMENTS

This statement of staff summary and approval of the proposed project changes has been filed in the docket for this project. Pursuant to California Code of Regulations, title 20, section 1769(a)(3)(C), any person may file an objection to the CEC staff's determination within 14 days of the filing of this statement on the grounds that the project change does not meet the criteria set forth in sections 1769(a)(3)(A) or (a)(3)(B). Absent any objections as specified in section 1769(a)(3)(C), this petition will be approved 14 days after this statement is filed.

The CEC's project webpage, https://www.energy.ca.gov/powerplant/combined-cycle/high-desert-power-plant has a link to the petition and this Statement of Staff Approval on the right side of the webpage in the box labeled "Compliance Proceeding." Click on the "Docket Log (97-AFC-01C)" option.

Written comments or objections to staff's determination may be submitted using the CEC's e-Commenting feature, as follows: Go to the CEC's project webpage and click on either the "Comment on this Proceeding," or "Submit e-Comment" link. When your comments are filed, you will receive an email with a link to them.

Written comments or objections may also be mailed to:

California Energy Commission
Docket Unit, MS-4
Docket No. 97-AFC-01C
715 P Street
Sacramento, CA 95814-5512

All comments and materials filed with the Docket Unit will be added to the facility Docket Log and be publicly accessible on the CEC's project webpage.

If you have questions about this document, please contact Compliance Project Manager Joseph Douglas, Compliance Monitoring and Enforcement Unit, Safety and Reliability Branch, at (916) 956-9527, or via email at Joseph.Douglas@energy.ca.gov.

For information on public participation, please contact the CEC's Office of Public Advisor, Energy Equity, and Tribal Affairs at (916) 957-7910 or email at publicadvisor@energy.ca.gov.

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High Desert Power Project (97-AFC-01C)
Petition to Amend Commission Decision
Air Quality, Public Health, and Greenhouse Gases
Andres Perez

INTRODUCTION AND SUMMARY

On September 20, 2022, the High Desert Power Project, LLC, filed a post certification petition with the California Energy Commission (CEC) for the High Desert Power Project (HDPP). The petition requests to implement turbine efficiency improvements for the facility's three existing combustion turbines. The fuel input on an hourly basis would increase, resulting in an increase in output of the respective gas turbines. The maximum nominal output of the facility would increase from 830 megawatts (MW) to 879 MW.

The HDPP was certified by the CEC on May 3, 2000 and began commercial operation in April 2003. The facility is located on the former George Air Force Base in the City of Victorville, San Bernardino, and within the Mojave Desert Air Basin.

The facility uses three F-Class Westinghouse combustion turbine generators (CTGs), each with an associated heat recovery steam generator (HRSG), which combine to output into one steam turbine generator (STG). Natural gas-fired duct burners are included with each HRSG to provide supplementary firing during high ambient temperature to maintain constant steam production to the STG.

Since the project was approved, the CEC has approved multiple amendments including: 1) modification of air quality Condition of Certifications (COCs) to require surrender of ERCs prior to commercial operation (CEC 2001a); 2) Modification of AQ COCs involving startup and other requirements (CEC 2004); 3) CEC approval to modify AQ COCs relating to source test intervals (CEC 2008).

The current Petition to Amend (PTA) requests to increase the input heat rate from 1,711 million British thermal units per hour (MMBtu/hr) to 2,037 MMBtu/hr, and the electrical output from 276.6 MW to 293 MW for each of the three CTGs (HDPP 2022b and HDPP 2022c). The PTA also proposes to modify air quality COCs **AQ-16** and **AQ-18** to reflect the administrative changes to the time intervals between source test proposed by the Mojave Desert Air Quality Management District (MDAQMD) in their draft Title V Renewal Permit, dated November 15, 2022 (MDAQMD 2022a). Additionally, the PTA requests changes to **AQ-31** to reflect reductions in the 12-month rolling period emissions limits for five criteria pollutants and the addition of **AQ-40** to require a post-modification compliance test.

Following comments received by the Environmental Protection Agency (EPA), the MDAQMD proposed an amended draft Title V Renewal permit, dated December 5, 2022. This amended permit incorporated the Federal Prevention of Significant Deterioration (PSD) permit for the facility, corrected NO_x and SO_x source testing timelines, added requirements for backup generator use, added New Source Performance Standard (NSPS) requirements for the combustion turbines regarding GHG emissions, and other administrative changes.

Staff reviewed the PTA and the associated MDAQMD Statement of Basis, dated December 5, 2022, and permit (MDAQMD 2022b and 2022c). The MDAQMD Statement of Basis addresses EPA comments on the previous Statement of Basis, dated November 15, 2022 (MDAQMD 2022a). As a result, the MDAQMD permit includes permit condition revisions different from the HDPP proposed revisions. The CEC staff proposes to incorporate the revisions in the MDAQMD permit in the Conditions of Certification **AQ-16**, **AQ-18**, **AQ-29**, and **AQ-31**, and include the addition of new Condition of Certifications **AQ-40** through **AQ-43,** to reflect the post-upgrade project compliance test and reasonable possibility reporting requirement permit additions proposed by MDAQMD. Staff also proposes to incorporate HDPP's emergency generator and fire pump engine permit conditions, through the addition of COCs **AQ-E1** through **AQ-E8**, **AQ-EE1** through **AQ-EE2**, and **AQ-FE1**, to make the facility's COCs consistent with the MDAQMD engine permits. Both the fire pump engine and the emergency generator had been previously analyzed for environmental impacts and approved by the CEC once the engines' were determined to not have the potential for adverse environmental or public health impacts (CEC 2001b and 2003). The proposed addition of the MDAQMD engine permit conditions would therefore constitute an administrative change to the HDPP COCs.

The modified project would comply with all laws, ordinances, regulations, and standards (LORS). There would be no increases in any permitted emission limits. Annual greenhouse gas emissions are not expected to increase beyond what was previously analyzed and approved as part of the Final Commission Decision. Greenhouse gas emissions would continue to be mitigated through the California Air Resources Board's (CARB) cap-and-trade program. Minor increases in actual hourly toxic air contaminants (TACs) emissions could occur as a result of the increased input heat rate, however, MDAQMD determined that the increase would result in a less than significant impact to public health. Therefore, there are no significant air quality, public health, or greenhouse gas impacts and there would be no significant impacts to any environmental justice populations or any minority or low-income populations as a result of the evaluated facility modifications.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS COMPLIANCE

CEC staff reviewed the PTA and the MDAQMD evaluation for consistency with all federal, state, and MDAQMD LORS. **Air Quality Table 1** includes a summary of the air quality LORS relevant to the proposed changes. **Air Quality Table 1** in this analysis is not intended to be comprehensive of all LORS applicable to the facility. The conditions of certification in the Final Commission Decision and amendments thereafter ensure that the facility would remain in compliance with all LORS.

Air Quality Table 1
Laws, Ordinances, Regulations, and Standards (LORS)

Applicable LORS	Description	Compliance
Federal	**U.S. Environmental Protection Agency**	
40 CFR 60, Subpart KKKK (Standards of Performance for Stationary Combustion Turbines)	This subpart establishes emission standards and compliance schedules for the control of emissions from stationary combustion turbines with a heat input at peak load equal to or greater than 10 MMBtu per hour, based on the higher heating value of the fuel, that commenced construction, modification, or reconstruction after February 18, 2005. The pollutants regulated by this subpart are NOx and SO_2.	Continued compliance with the NOx and SO_2 limits is expected with the use of SCR to control NOx emissions and the use of PUC-quality pipeline natural gas that complies with the sulfur limits of MDAQMD Rule 431. The units also use Continuous Emission Monitoring Systems (CEMS) for NOx and CO.
40 CFR Part 63 Subpart YYYY (National Emissions Standards for Hazardous Air Pollutants for Stationary Combustion Turbines)	This regulation applies to gas turbines located at major sources of hazardous air pollutants (HAP) emissions. A major source is defined as a facility with emissions of 10 tons per year or more of a single HAP or 25 tons per year or more of a combination of HAPs.	The largest single HAP emission from the facility is hexane which emits from the turbines at a potential to emit of 1.3 tons per year. The total combined HAPs from the facility is less than 4 tons per year which is below the 25 tons per year threshold. Therefore, the facility is not a major source, and the requirements of this regulation do not apply.
40 CFR Part 64 (Compliance Assurance Monitoring)	The Compliance Assurance Monitoring (CAM) regulation applies to emission units at major stationary sources, required to obtain a Title V Permit, which use control equipment to achieve a specified emission limit.	The facility uses CEMS to monitor, report and record both NOx and CO emissions continuously downstream of the control equipment. VOC emissions are also subject to an emission limit and are partially controlled by the oxidation catalyst. The VOC emission limit is verified through source test required once every 36 months and the oxidation catalyst is continuously monitored by the CO CEMS, which can

Applicable LORS	Description	Compliance
		be used as a surrogate monitor for the reliable operation of the oxidation catalyst for VOC control. Continued compliance is expected.
40 CFR Part 72 (Acid Rain Provisions)	The Acid Rain Program requires the monitoring and reporting of emissions of acidic compounds and their precursors from combustion equipment owned by a utility. Under the Acid Rain Provisions, SO_2 emissions from the unit are required to be offset with SO_2 allowances. SO_2 allowances are, however, not required in any year when the unit emits less than 1,000 lbs of SO_2.	In order to determine the amount of SO_2 emitted from the turbine, the SO_2 emissions are required to be monitored through the use of fuel gas meters and gas constituent analyses, or, if fired with pipeline quality natural gas, as in the case of this facility, a default emission factor of 0.060 lb/MMBtu is allowed. SO_2 mass emissions are to be recorded every hour. NOx and O_2 must be monitored with CEMS in accordance with the specifications of Part 75. Under this program, NOx and SOx emissions will be reported directly to the U.S. EPA. Continued compliance is expected.
40 CFR Part 60 Subpart TTTT	Establishes standards of performance for carbon dioxide (CO2). Non-base load electric generating units (EGUs) are subject to a CO2 emission standard of 120 lbs CO2/MMBtu and base load EGUs are subject to a CO2 emission standard of 1,030 lbs CO2/MMBtu based on gross energy output.	The facility's three combustion turbines are exempt from Subpart TTTT as they are neither a new source nor would the proposed modification be considered a "reconstruction", as the fixed capital cost of the new components would be less than 50% of the fixed capitol cost of constructing a comparable, entirely new facility (as described in 40 CFR 60.15(b)).
Local	**Mojave Desert Air Quality Management District**	
Regulation II – Permits Rule 218 (Stack Monitoring)	This rule applies to all sources that require CEMS as specified in the regulations or permit conditions.	The turbines have CEMS for CO and NOx. The facility is required to calibrate, maintain, and operate the CEMS according to the requirements of Rule 218. The facility has a District-approved monitoring plan for the CEMS and submits quarterly reports summarizing CEMS performance. Continued compliance is expected.
Regulation IV – Prohibitions Rule 401 (Visible Emissions)	This rule prohibits visible emissions from operating equipment exceeding Ringelmann No. 1 for a period aggregating more than 3 minutes in any hour.	The CCGTs combust natural gas and will continue to combust natural gas following implementation of the proposed changes. Visible emissions are not expected from a well-maintained and properly operated

Applicable LORS	Description	Compliance
		equipment. Continued compliance is expected.
Regulation IV – Prohibitions Rule 402 (Nuisance)	This rule prohibits the discharge of air contaminants or materials which may cause nuisance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.	The CCGTs combust natural gas and will continue to combust natural gas following implementation of the proposed changes. Nuisance emissions are not expected with the proper operation of the equipment. Continued compliance is expected.
Regulation IV – Prohibitions Rule 405 (Particulate Matter Concentration)	This rule limits solid particulate matter (PM) emissions to values determined by the facility's hourly exhaust discharge rate.	Prior source test results demonstrate that none of the CCGTs exceeded the permitted PM10 Title V limits, which indicates compliance with this rule. The proposed modifications are not expected to change the PM10 emission rate from the equipment; therefore, continued compliance with this rule is expected.
Regulation IV – Prohibitions Rule 406 (Specific Contaminants)	This rule limits SO_2 emissions to 500 parts per million by volume (ppmv), at standard conditions.	The CCGTs combust PUC-quality pipeline natural gas with a sulfur content of less than 0.25 grain (gr) per 100 standard cubic feet (scf), which is equivalent to a sulfur concentration of about 4 ppmv. Continued compliance with this rule is expected.
Regulation IV – Prohibitions Rule 407 (Liquid and Gaseous Air Contaminants)	This rule limits CO emissions to 2,000 parts per million by volume, dry basis (ppmvd), averaged over 15 minutes.	The CO emissions will continue to be controlled by the CO catalyst to meet the limit of 4.0 ppmvd CO at 15 percent O_2, 1-hour average, which is below the 2,000 ppmvd limit.
Regulation IV – Prohibitions Rule 409 (Combustion Contaminants)	This rule restricts the discharge of contaminants from the combustion of fuel to 0.23 grams per cubic meter (0.1 grain per cubic foot) of gas, calculated to 12 percent CO_2, averaged over 15 minutes.	The CCGTs combust PUC-quality pipeline natural gas, which will ensure continued compliance with this rule. In addition, the facility is required to test for PM emissions once every 12 months. Results of the last source test show compliance with the rule.
Regulation IV – Prohibitions Rule 431 (Sulfur Content of Fuels)	This rule limits the sulfur compounds in the natural gas to 16 ppmv, calculated as H_2S.	The CCGTs combust PUC-quality pipeline natural gas with a sulfur content of less than 0.25 grain (gr) per 100 standard cubic feet (scf), which is equivalent to a sulfur concentration of about 4 ppmv. Continued compliance with this rule is expected.

Applicable LORS	Description	Compliance
Regulation XI – Source-Specific Standards Rule 1159 (Stationary Gas Turbines)	The purpose of this rule is to limit emissions of NOx from commercial, industrial, and institutional stationary gas turbines.	This rule limits NOx emissions to 5 ppmv at 15 percent O_2, for stationary gas turbines with SCR and DLN equipment. The CCGTs already comply with the NOx limits pursuant to current permit conditions. Continued compliance is expected. The existing permit includes limitations for the duration and emissions of startup and shutdown periods, and MDAQMD proposes the addition of per turbine emissions startup and shutdown limits to bring the Title V permit in line with the facility's PSD permit. These additional limits are incorporated in Condition of Certification **AQ-29**. Continued compliance is also expected for other provisions of the rule.
Regulation XII – Federal Operating Permits Rule 1203	This regulation defines federal operating permit term, issuance procedures, restrictions, content, operational flexibility, as well as compliance requirements associated with the Federal Operating Permit Program.	The proposed changes will result in a decrease of all annual facility-wide criteria pollutant limits and would therefore constitute a minor modification. MDAQMD issued the final permit on December 21, 2022, after incorporating comments submitted by the EPA.
Regulation XIII – New Source Review (NSR) Rule 1303 (Requirements)	This rule requires BACT for any equipment (or modification of that equipment) with a potential to emit greater than 25 pounds per day for any nonattainment pollutant. The rule also requires offsets any new or modified facilities that exceed the offset threshold amounts for a nonattainment pollutant.	<u>Best Available Control Technology (BACT):</u> The proposed modification would not result in an emissions increase for any nonattainment pollutant, so BACT would not be triggered. An emission limit increase is being proposed for CO, however, since CO is not a nonattainment pollutant, BACT specified on the permits at the time of original issuance would still apply. Continued compliance is expected. <u>Offsets:</u> MDAQMD's analysis shows that there would be no increase in emissions for CO, VOC, PM10 or SOx. Therefore, offsets are not required per Rule 1303(C)(2)(d).
Regulation XIV – New Source Review	This rule outlines the requirements for facilities that are subject to the State Toxic New Source Review Program	MDAQMD calculated prioritization scores for each turbine and categorized each as having "Intermediate Priority". Since no State

Applicable LORS	Description	Compliance
Rule 1320 (New Source Review for Toxic Air Contaminants)	and/or the Federal Toxic New Source Review Program.	Air Toxics Control Measures are applicable to the turbines, and the facility is not a major source of Hazardous Air Pollutant (and therefore Federal T-NSR is not required), no further analysis was required. The modified project would continue to comply with Rule 1320.
Regulation XV – Emission Standards for Specific Toxic Air Contaminants Rule 1520 (Control of Toxic Air Contaminants From Existing Sources)	This rule controls the emissions of toxic air contaminants from existing sources and outlines the Air Toxics "Hot Spots" Program requirements for these sources.	The required risk prioritization for the modified facility was performed as required by Rule 1520(D)(1)(b). The facility is categorized as "Intermediate Priority", so a Health Risk Assessment was not required. MDAQMD is expected to continue to comply with this rule by submitting their annual Comprehensive Emission Inventory report.
Regulation XVI Prevention of Significant Deterioration (PSD) Rule 1600	The purpose of this regulation is to establish preconstruction review requirements for all new Major PSD Facilities and Major PSD Modifications.	The proposed modification would not constitute a major modification, as detailed by the project owner's PSD analysis submitted to the EPA and MDAQMD's Statement of Basis for the modification. The facility will continue to comply with the existing PSD permit implemented by the EPA.

ANALYSIS

Criteria Pollutant Emissions Analysis

The HDPP efficiency improvements will increase the turbine firing temperature with new Ultra-Low Nitrogen Oxides (NOx) combustion and turbine hardware. The replacement of blades and vanes with updated, functionally equivalent parts, will result in improved efficiency. HDPP is also proposing to increase the maximum hourly heat input rating for each of the CCGTs from 1,711 MMBtu/hr to 2,037 MMBtu/hr. The increase in hourly heat input rate would not result in an increase to any of the facility's permitted emission limits. The emission limit revisions requested by the project owner would result in a reduction to the annual limits for four criteria pollutants (NO_x, CO, VOC, and PM10) and no changes to the annual limit for the remaining criteria pollutant (SO_x).
NOx, CO, and ammonia emission concentrations are each limited to 2.0 ppmvd at 15 percent O_2, 4.0 ppmvd at 15 percent O_2, and 10 ppmvd at 15 percent, respectively, in Condition of Certification **AQ-28a**. VOC is limited to 1 ppmvd at 15 percent O_2, in Condition of Certification **AQ-28b**, which also limits SO_x and PM10 on a pound per hour basis, with SO_x limited to 1.11 pounds per hour, when based on the lower heating value

of the input fuel, and PM10 emissions limited to 18.14 pounds per hour. These limits will not change due to the proposed increase in maximum hourly heat input rating.

Emissions during startups and shutdowns will not change with the proposed increase in heat input during normal operation. However, MDAQMD has proposed to include the per turbine startup and shutdown emissions and duration limits present in the facility's PSD permit. This addition would add duration limits for cold startups, warm startups, hot startups, and shutdowns, and incorporate per turbine emission limits for both NO_x and CO for each of these scenarios. CEC staff proposes to amend Condition of Certification **AQ-16** to reflect these changes.

MDAQMD also amended the source testing requirements for the facility by converting all source testing intervals from years to the equivalent time in months and reducing the source testing interval for SO_x from once every 5 years to once every 14 months. CEC staff proposes to incorporate the source testing requirement changes into Condition of Certification **AQ-16**.

MDAQMD District Rule 1304(B) defines an emission change as equal to the Potential to Emit (PTE) of the modified unit minus its Historic Actual Emissions (HAE), where PTE is defined as the permitted annual emission limit for the modified unit and HAE is defined as the average annual emissions of the two most representative, consecutive years of the previous five years. However, for an emissions change where offsets were required due to prior NSR permitting action, the emissions change proposed would result in an emissions decrease, and any excess emissions are not banked, HAE is set equal to the PTE. Since NO_x, VOC, and PM10 offsets were provided during the original permitting of the facility, the proposed emissions changes for those pollutants would result in an emissions decrease, and the excess emissions will not be banked, the NO_x, VOC, and PM10 emissions change HAEs for this modification were set equal to the new, reduced PTE. Consequently, the proposed modification would not be considered an emission increase under Rule 1304(B), so a Best Available Control Technology (BACT) analysis was not required.

For CO, since it is an attainment pollutant for the Mojave District Air Basin, no offsets were required, nor are they required, for the facility. Consequently, the emissions change for CO was calculated by taking the difference between the average annual emissions of the two most representative years of the past five years and the facility's CO PTE.

The proposed modification would not result in any SO_x emissions changes. Since the facility is not a major source for SO_x (as its SO_x PTE is less than 100 tons per year) and the facility is not requesting an increase in the PM10 emissions (for which SO_x is a precursor), no SO_x offsets would be required.

Air Quality Table 2 shows the comparison of the annual emissions limits for the facility before and after the proposed modifications, based on MDAQMD calculations.

Air Quality Table 2
Summary of Facilitywide Annual Emissions Limits

Pollutant	Pre-Modification Emissions (tons/year)	Post-Modification Emissions (tons/year)	Change in Emissions (tons/year)
NOx	205	204.5	-0.55
CO	700	192.8	-557.2
VOC	129	128.5	-0.55
PM10	233.2	232.7	-0.55
SOx	15.8	15.8	0

Source: MDAQMD 2022c, Tables 1a and 1b

Since the proposed modification would not result in the increase of any hourly, daily, or annual emission limits, no updates to the facility's Air Quality Impact Analysis are required.

PSD Applicability Analysis

Pursuant to 40 CFR Section 52.21(a)(2)(ii), a PSD review is required only when a proposed modification would result in a significant emission increase of an attainment (PSD) pollutant. For electric utility steam generating units, such as the subject turbines, the emissions increase would be calculated as the difference between the unit's baseline actual emissions (BAE), defined as the average annual emission rate during any consecutive two-year period within the last five years, and the unit's projected actual emissions (PAE), defined as the maximum annual rate the unit is projected to emit in any one of the five years following project implementation. 40 CFR Section 52.21(b)(41)(ii)(c) also allows for the exclusion of a unit's emissions that could have been accommodated in the two-year period used to establish the unit's BAE, which the project owner chose to do for projected emissions of PM10 and greenhouse gases (GHGs).

Air Quality Table 3 shows the PSD pollutant emission changes calculated by the project owner and demonstrates that all emission changes would be below their associated significance thresholds (HDPP 2022a).

Air Quality Table 3
PSD Pollutant Emission Changes for the Project

Pollutant	Baseline Actual Emissions (tons/year)	Projected Actual Emissions[a] (tons/year)	Significance Threshold (tons/year)	Change in Emissions (PAE-BAE) (tons/year)
NOx	113.1	204.5	**40**	35.25
CO	93.8	192.8	**100**	4.21
SOx	7.8	128.5	**40**	2.54
PM10[a]	75.6	232.7	**15**	7.49
CO_2e[a] (GHGs)	1,526,958	2,029,267	**75,000**	-462,469

[a] PM10 and GHG projected actual emissions (PAE) include an adjustment where emissions from unused capacity were subtracted from calculated projected actual emissions. PAE for NO_x, CO, and SO_x were not adjusted.
Source: HDPP 2022b, Table 7

Because the PAE increase was greater than 50% for the NO_x emission change, and greater than 50% for the unadjusted emission changes for PM10 and GHGs, the District added reasonable possibility reporting requirements for those emissions pursuant to 40 CFR Sections 52.21(r)(6)(iii), 52.21(r)(6)(iv), and 52.21(r)(7). These would require the project owner to monitor PM10, NO_x, and GHG emissions for a period of 10 years following the modification and submit the monitoring records 60 days after the end of the year. CEC staff recommends adding conditions **AQ-41**, **AQ-42**, and **AQ-43**, to include the reasonable possibility reporting requirements and maintain consistency with the MDAQMD turbine permits.

Toxic Air Contaminants Emissions Analysis

MDAQMD State T-NSR Rule 1320 requires that Federal and State Toxic-New Source Review (T-NSR) analyses be performed whenever a facility with the potential to emit a Toxic Air Contaminant (TAC) is modified. Pursuant to District Rule 1320(B)(3), since the facility is not a major source of Hazardous Air Pollutants (a federally recognized subset of TACs), a Federal T-NSR analysis is not required.

Since the facility has the potential to emit TACs and the proposed increase in hourly heat input rate would result in an increase in maximum hourly emissions of TACs, the MDAQMD performed a State T-NSR analysis. State T-NSR Rule 1320, Section (E)(1) requires the District to determine whether the modified emission units are subject to any Airborne Toxic Control Measures (ATCM). MDAQMD determined that there are no State ATCMs applicable to the combustion turbines. Rule 1320, Section (E)(2) also requires the District to calculate a prioritization score for each modified emission unit. If the prioritization score indicates that the emissions unit would be categorized as "High Priority", the District would require a Health Risk Assessment (HRA) for the emissions

unit. All three modified combustion turbines were categorized as "Intermediate Priority", so no further analysis was required. **Air Quality Table 4** shows the District calculated prioritization scores for each turbine.

Air Quality Table 4
Summary of Emission Unit Prioritization Scores

Combustion Turbine Permit Number	Cancer Priority	Chronic/ Noncancer Priority	Acute Priority	Prioritization Category
B005266	1.87	0.98	0.66	Intermediate
B005267	1.87	0.98	0.66	Intermediate
B005268	1.87	0.98	0.66	Intermediate

Source: MDAQMD 2022c, Table 2

District Rule 1520 (Control of Toxic Air Contaminants from Existing Sources) requires the District to calculate a new facility prioritization score when the facility submits an application to modify existing emissions units. The prioritization score was based on the PTE for the modified turbines and the actual emissions for the remainder of the equipment, as reported in the Facility's 2021 Comprehensive Emission Inventory. As shown in **Air Quality Table 5**, the facility's prioritization score was less than 10 for all health risk categories, placing it in the "Intermediate Priority" facility class. Pursuant to District Rule 1520 Section (E)(2)(b), the District determined that no further analysis was required.

Air Quality Table 5
Facility Prioritization Score

	Cancer Priority	Chronic/ Noncancer Priority	Acute Priority	Prioritization Category
Prioritization Score	8.40	0.98	0.66	Intermediate
Significance Thresholds	**10**	**1**	**1**	**N/A**

Source: MDAQMD 2020; MDAQMD 2022c, Table 3

Pursuant to the MDAQMD CEQA Guidelines, the modified HDPP would have a less than significant public health impact as it would result in a cancer risk impact less than 10 in a million, a chronic/noncancer hazard index of less than 1, and an acute hazard index of less than 1.

Greenhouse Gas Emissions

As shown in **Air Quality Table 3**, the proposed modification would not result in a significant emission increase of greenhouse gases. Annual greenhouse gas emissions

would not increase beyond what was previously analyzed and approved as part of the Final Commission Decision. Greenhouse gas emissions would continue to be mitigated through CARB's cap-and-trade program. The upgrade project is therefore expected to have a less than significant impact on the environment due to greenhouse gas emissions.

CONCLUSIONS AND RECOMMENDATIONS

CEC staff recommends approval of the proposed upgrade of the HDPP's three gas turbine units with accompanying changes to the air quality conditions of certification. The proposed changes would conform with the applicable LORS related to air quality and would not result in significant impacts to ambient air quality and public health, nor would it result in greenhouse gas emissions that would have a significant impact on the environment. The MDAQMD has analyzed the requested changes and issued a revised Title V permit.

AMENDED CONDITIONS OF CERTIFICATION

The modifications to the Air Quality conditions of certification are included below. **Bold underline** indicates new language. ~~Strikethrough~~ indicates deleted language. **Air Quality Table 6** includes a summary of the proposed modifications and justification.

Air Quality Table 6
Air Quality Conditions of Certification (COCs)with Proposed Modifications and Justification

Energy Commission Numbering	SCAQMD Numbering	Proposed Modifications and Justification
AQ-16	Title V Permit – Part III, Combustion Turbines Condition 14	MDAQMD staff implemented an administrative change to convert emission compliance test time intervals from years to months and increase the frequency of NOx compliance testing to once every 14 months (previously once every five years) to make the Title V permit consistent with the EPA's PSD permit.
AQ-18	Title V Permit – Part III, Combustion Turbines Condition 14	MDAQMD staff implemented an administrative change to convert the emission compliance test time intervals for startup and shutdown VOC emissions from years to months.
AQ-29	Title V Permit – Part III, Combustion Turbines Condition 6	MDAQMD staff added the turbine startup and shutdown duration limits, per turbine startup and shutdown emission limits, and allowance for an alternative cold startup scenario to make the Title V permit consistent with the EPA's PSD permit.
AQ-31	Title V Permit – Part III, Combustion Turbines Condition 8	MDAQMD staff implemented the project owner's request to reduce NOx, CO, VOC, SOx, and PM10 annual emission limits.
AQ-40	Title V Permit – Part III, Combustion Turbines Condition 13	MDAQMD staff added a requirement for the project owner to perform a compliance test for the turbines after the upgrade project has been completed.
AQ-41	MDAQMD Turbine Permits B005266, B005269, and B005268 Condition 20	MDAQMD added the PM2.5, NOx, and GHG monitoring requirement to comply with the reasonable possibility requirements triggered by the modification.
AQ-42	MDAQMD Turbine Permits B005266, B005269, and B005268 Condition 21	MDAQMD added the PM2.5, NOx, and GHG monitoring report submittal requirement to comply with the reasonable possibility requirements triggered by the modification.
AQ-43	MDAQMD Turbine Permits B005266, B005269, and B005268 Condition 22	MDAQMD added the PM2.5, NOx, and GHG monitoring recordkeeping requirement to comply with the reasonable possibility requirements triggered by the modification.
AQ-E1	MDAQMD Engine Permits E008665 and E008159 Condition 1	CEC staff proposes to add the emergency and fire pump engine MDAQMD permit conditions to maintain consistency between the two documents.

AQ-E2	MDAQMD Engine Permits E008665 and E008159 Condition 2	CEC staff proposes to add the emergency and fire pump engine MDAQMD permit conditions to maintain consistency between the two documents.
AQ-E3	MDAQMD Engine Permits E008665 and E008159 Condition 3	CEC staff proposes to add the emergency and fire pump engine MDAQMD permit conditions to maintain consistency between the two documents.
AQ-E4	MDAQMD Engine Permits E008665 Condition 6 and E008159 Condition 4	CEC staff proposes to add the emergency and fire pump engine MDAQMD permit conditions to maintain consistency between the two documents.
AQ-E5	MDAQMD Engine Permits E008665 Condition 8 and E008159 Condition 6	CEC staff proposes to add the emergency and fire pump engine MDAQMD permit conditions to maintain consistency between the two documents.
AQ-E6	MDAQMD Engine Permits E008665 Condition 7 and E008159 Condition 9	CEC staff proposes to add the emergency and fire pump engine MDAQMD permit conditions to maintain consistency between the two documents.
AQ-E7	MDAQMD Engine Permits E008665 Condition 9 and E008159 Condition 7	CEC staff proposes to add the emergency and fire pump engine MDAQMD permit conditions to maintain consistency between the two documents.
AQ-E8	MDAQMD Engine Permits E008665 Condition 10 and E008159 Condition 8	CEC staff proposes to add the emergency and fire pump engine MDAQMD permit conditions to maintain consistency between the two documents.
AQ-EE1	MDAQMD Engine Permits E008665 Condition 4	CEC staff proposes to add the emergency engine MDAQMD permit conditions to maintain consistency between the two documents.
AQ-EE2	MDAQMD Engine Permits E008665 Condition 5	CEC staff proposes to add the emergency engine MDAQMD permit conditions to maintain consistency between the two documents.
AQ-FE1	MDAQMD Engine Permits E008159 Condition 5	CEC staff proposes to add the fire pump engine MDAQMD permit conditions to maintain consistency between the two documents.

AQ-16 The project owner shall perform the following compliance tests in accordance with the MDAQMD Compliance Test Procedural Manual. The test report shall be submitted to the MDAQMD no later than six (6) weeks prior to the expiration date of this permit. The following compliance tests and their frequencies are required:

a. NO_x as NO_2 in ppmvd at 15% O_2 and lb/hr at least once every ~~five years~~ **fourteen (14) months** (measured per

USEPA Reference Methods 7E, 19 and 20).

b. VOC as CH_4 in ppmvd at 15% O_2 and lb/hr at least once every ~~five years~~ **thirty-six (36) months** (measured per USEPA Reference Methods 25A and 18).

c. SO_x **at least once every fourteen (14) months in accordance with the requirements specified 40 CFR 60.4415**. ~~as SO_2 in ppmvd at 15% O_2 and lb/hr at least once every five years.~~

d. CO in ppmvd at 15% O_2 and lb/hr at least once every ~~five years~~ **sixty (60) months** (measured per USEPA Reference Method 10).

e. PM_{10} in ~~mg/m3 at 15% O_2 and~~ lb/hr at 15% O_2 at least once ~~a year~~ **every 12 months** (measured per USEPA Reference Methods 5 and 202 or CARB Method 5).

f. Flue gas flow rate in scfmd ~~each time a compliance test is conducted.~~**, at least once every sixty (60) months.**

~~g. Opacity (measured per USEPA reference Method 9).~~

g. Ammonia slip in ppmvd at 15% O_2 at least once every ~~five years~~ **sixty (60) months.**

Verification: See verification for Condition **AQ-15**.[2]

AQ-18 The project owner shall, at least as often as once every ~~five (5) years~~ **sixty (60) months** (commencing with the initial compliance test), include the following supplemental source tests in the annual compliance testing:

a. Characterization of cold startup VOC emissions;

b. Characterization of warm startup VOC emissions;

c. Characterization of hot startup VOC emissions; and

d. Characterization of shutdown VOC emissions.

Verification: See verification for Condition **AQ-15**.

AQ-29 Emissions of CO and NO_x from the power block may exceed the limits contained in Condition **AQ-28** during startup and shutdown periods as follows:

[2] Verification for Condition AQ-15 reads as follows: "Forty-five (45) days after testing the project owner shall provide the CEC CPM a copy of the source test results."

a. Startup shall be defined as the period beginning with ignition and lasting until the power block has reached operating permit limits.

   Cold startup means a startup when the power block has not been in operation during the preceding seventy-two (72) hours.

   Hot startup means a startup when the power block has been in operation during the preceding eight (8) hours.

   Warm startup means a startup that is not a hot or cold startup.

   Shutdown shall be defined as the period beginning with the lowering of power block from normal operating load and lasting until fuel flow is completely off and combustion has ceased.

b. ~~Deleted.~~ **Transient conditions shall not exceed the following durations:**

   i. **Cold startup: 4.5 hours**

   ii. **Warm startup: 2.6 hours**

   iii. **Hot startup: 1.9 hours**

   iv. **Shutdown: 1 hour**

c. During a cold startup emissions shall not exceed the following, verified by CEMS:

   i. NO_x — 549 lb

   ii. CO — 10,623 lb

d. During a warm startup emissions shall not exceed the following, verified by CEMS:

   i. NO_x — 504 lb

   ii. CO — 10,788 lb

e. During a hot startup emissions shall not exceed the following, verified by CEMS:

   i. NO_x — 414 lb

   ii. CO — 11,187 lb

f. During a shutdown emissions shall not exceed the following, verified by CEMS:

   i. NO_x — 291 lb

   ii. CO — 717 lb

Per turbine emissions during startup and shutdown, verified by CEMS, shall not exceed the following:

g. **During a cold startup emissions shall not exceed the following, verified by CEMS:**
   i. **NO_x — 183 lb**
   ii. **CO — 3541 lb**

h. **During a warm startup emissions shall not exceed the following, verified by CEMS:**
   i. **NO_x — 168 lb**
   ii. **CO — 3596 lb**

i. **During a hot startup emissions shall not exceed the following, verified by CEMS:**
   i. **NO_x — 138 lb**
   ii. **CO — 3729 lb**

j. **During a shutdown emissions shall not exceed the following, verified by CEMS:**
   i. **NO_x — 97 lb**
   ii. **CO — 239 lb**

k. **Alternative Cold Startup Scenario**

   The project owner may use the following alternative startup scenario for cold starts: one combustion turbine ("warming turbine") is used to warm the components of the steam turbine generator and to bring the SCR online. The remaining two combustion turbines are then brought online quickly. Emissions during the alternative cold startup scenario shall not exceed the following:

   Warming Turbine – Startup Duration: 9.5 hours
   i. **NO_x — 235 lb/event**
   ii. **CO — 4,394 lb/event**

   Combustion Turbine 2 – Startup Duration: 1.9 hours
   i. **NO_x — 138 lb/event**
   ii. **CO — 2,391 lb/event**

Combustion Turbine 3 – Startup Duration: 1.9 hours

i. **NO_x — 128 lb/event**

ii. **CO — 2,391 lb/event**

Verification: See Condition **AQ-20** and its verification.[3]

AQ-31 Emissions from this facility, including the cooling towers, may not exceed the following emission limits, based on a rolling twelve (12) month summary:

a. NO_x — ~~205~~ **204.5** tons/year, verified by CEMS

b. CO — ~~750~~ **198.2** tons/year, verified by CEMS

c. VOC as CH_4 — ~~129~~ **128.5** tons/year, verified by compliance tests and hours of operation

d. SO_x as SO2 — 14 tons/year (LHV), 15.8 tons/year (HHV), verified by fuel sulfur content and fuel use data

e. PM_{10} — ~~233.2~~ **232.7** tons/year, verified by compliance tests and hours of operation

Verification: See Condition **AQ-20** and its verification.[4]

AQ-40 **POST TURBINE IMPROVEMENT PROJECT INITIAL COMPLIANCE TESTS: The project owner shall perform an initial test within 180 days of the turbine improvement project.**

a. NO_x as NO_2 in ppmvd at 15% O2 and lb/hr (measured per USEPA Reference Method 20 or Method 7E performed with Method 3 or 3A to determine NO_x and diluent concentration), at least once every fourteen (14) months in accordance with the requirements specified in 40 CFR 60.4400.

b. VOC as CH_4 in ppmvd at 15% O_2 and lb/hr (measured per USEPA Reference Methods 25A and 18).

c. SOx in accordance with the requirements specified in 40 CFR 60.4415.

[3] Verification for Condition AQ-20 reads as follows: "The project owner shall prepare quarterly reports for the preceding calendar quarters by January 30, April 30, July 30 and October 30 with the January 30 report including an annual summary. The reports shall be submitted to the District, EPA, and the CEC."
[4] Id.

d. CO in ppmvd at 15% O_2 and lb/hr (measured per USEPA Reference Method 10).

e. PM10 in lb/hr at 15% O_2 (measured per USEPA Reference Methods 5 and 202 or CARB Method 5).

f. Flue gas flow rate in scfmd.

Verification: Forty-five (45) days after testing the project owner shall provide the CEC CPM a copy of the source test results.

AQ-41 **The project owner shall monitor the emissions of $PM_{2.5}$, NO_x, and GHGs from each of the three combustion turbines for a period of 10 years following resumption of regular operations after the Turbine Upgrade Project (defined as the modifications to the combustion turbines (B005266, B005267, B005268) that increase the heat input rate for each unit to 2,037 MMBtu/hr).**

Verification: See Condition AQ-42 and its verification.

AQ-42 **The Owner/Operator shall submit a report to EPA Region 9 within 60 days after the end of each year during which records must have been generated pursuant to Condition of Certification AQ-41 setting out the units' annual emissions during the calendar year that preceded submission of the report. This report may be submitted with the annual compliance certification.**

Verification: Sixty (60) days after the end of each year the project owner shall provide the CEC CPM a copy of the report submitted to EPA Region 9 or include the information in the facility's annual summary report required by AQ-20 and its verification.

AQ-43 **The project owner shall make the information required to be documented and maintained pursuant to Condition of Certification AQ-41 for review upon a request for inspection by the EPA or the general public consistent with 40 CFR 70.4(b)(3)(viii).**

Verification: The project shall make the records required by Condition of Certification AQ-41 available upon request by MDAQMD, EPA, and CEC staff, or the public.

Conditions of Certification AQ-E1 through AQ-E7 apply to both the Emergency Engine Generator and the Emergency Fire Water Pump Engine

AQ-E1 **This equipment shall be installed, operated and maintained in strict accordance with those recommendations of the manufacturer/supplier and/or sound engineering principles which produce the minimum emissions of contaminants. Unless otherwise noted, this equipment shall also be operated in accordance with all data and specifications submitted with the application for MDAQMD permit.**

Verification: The project owner shall certify compliance with this condition in the facility's annual summary report required by AQ-20 and its verification and shall make the site and data available for inspection by representatives of the MDAQMD, EPA or CEC.

AQ-E2 **This equipment shall only be fired on diesel fuel that meets the following requirements, or an alternative fuel approved by the ATCM for Stationary CI Engines:**

a. Ultra-low sulfur concentration of 0.0015% (15 ppm) or less, on a weight per weight basis; and,

b. A cetane index or aromatic content, as follows:

i. **A minimum cetane index of 40; or,**

ii. **A maximum aromatic content of 35 volume percent.**

Verification: The project owner shall certify compliance with this condition in the facility's annual summary report required by AQ-20 and its verification and shall make the site and data available for inspection by representatives of the MDAQMD, EPA or CEC.

AQ-E3 **A non-resettable hour meter with a minimum display capability of 9,999 hours shall be installed and maintained on this unit to indicate elapsed engine operating time.**

Verification: The project owner shall certify compliance with this condition in the facility's annual summary report required by AQ-20 and its verification and shall make the site and data available for inspection by representatives of the MDAQMD, EPA or CEC.

AQ-E4 **This unit shall be limited to use for emergency power, defined as in response to a fire or when commercially available power has been interrupted. Emergency stationary RICE located at area sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations 40 CFR**

60.6640(f)(4). In addition, pursuant to 17 CCR 93115.6(b) this unit shall be operated no more than 50 hours per year for testing and maintenance. The 50 hours of testing and maintenance hours are counted as part of the 50 hours of operation in non-emergency situations provided in 40 CFR 60.6640(f)(4). Except as provided in 40 CFR 60.6640 (f)(4)(ii), the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

Verification: The project owner shall certify compliance with this condition in the facility's annual summary report required by AQ-20 and its verification and shall make the site and data available for inspection by representatives of the MDAQMD, EPA or CEC.

AQ-E5 **The project owner shall maintain an operations log for this equipment current and on-site (or at a central location) for a minimum of five (5) years, and this log shall be provided to MDAQMD, EPA and/or CEC staff, upon request. The log shall include, at a minimum, the information specified below:**

- **a. Date of each use and hours of operation with documentation of how many hours are spent for emergency operation, including what classified the operation as emergency, and how many hours are spent for non-emergency operation, including what classified the operation as non-emergency. and,**
- **b. Monthly and calendar year operation in terms of total hours, both emergency and non-emergency use, classified as described in Condition of Certification AQ-E4a; and,**
- **c. Monthly fuel use; and,**
- **d. Documentation of certified fuel use, as required by Condition of Certification AQ-E2 (may use the supplier's certification of sulfur content if it is maintained as part of this log); and,**
- **e. Maintenance performed on this equipment, inclusive of the management practice requirements of Condition of Certification AQ-E5.**

Verification: The project owner shall certify compliance with this condition in the facility's annual summary report required by AQ-20 and its verification and shall make the site and data available for inspection by representatives of the MDAQMD, EPA or CEC.

AQ-E6 **The project owner shall minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.**

Verification: The project owner shall certify compliance with this condition in the facility's annual summary report required by AQ-20 and its verification and shall make the site and data available for inspection by representatives of the MDAQMD, EPA or CEC.

AQ-E7 **This facility is an area source for HAP. The owner/operator shall conduct inspections in accordance with the following schedule. All inspections must occur at least annually regardless of operating hours.**

- **a. Change oil and filter every 500 hours of operation or annually, whichever comes first, or use an oil change analysis program to extend oil change frequencies per the requirements in 40 CFR 63.6625(i);**
- **b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first; and**
- **c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. The District must be notified within 5 working days of any exceedance of these maintenance intervals, noting the duration, cause, and corrective actions taken.**

Verification: The project owner shall certify compliance with this condition in the facility's annual summary report required by AQ-20 and its verification and shall make the site and data available for inspection by representatives of the MDAQMD, EPA or CEC.

AQ-E8 **If this emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements required by condition 9, or shutting down the engine would pose an unacceptable risk, the management practice can be delayed until the emergency is over, or the risk has been abated. The**

management practice should be performed as soon as practicable after the emergency/risk has ended. Sources must report any failure to perform the management practice on the schedule required and the Federal, State or local law under which the risk was deemed unacceptable.

Verification: The project owner shall certify compliance with this condition in the facility's annual summary report required by AQ-20 and its verification and shall make the site and data available for inspection by representatives of the MDAQMD, EPA or CEC.

Conditions of Certification AQ-EE1 through AQ-EE2 apply only to the Emergency Engine Generator

AQ-EE1 **If this emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements required by condition 9, or shutting down the engine would pose an unacceptable risk, the management practice can be delayed until the emergency is over, or the risk has been abated. The management practice should be performed as soon as practicable after the emergency/risk has ended. Sources must report any failure to perform the management practice on the schedule required and the Federal, State or local law under which the risk was deemed unacceptable.**

Verification: The project owner shall certify compliance with this condition in the facility's annual summary report required by AQ-20 and its verification and shall make the site and data available for inspection by representatives of the MDAQMD, EPA or CEC.

AQ-EE2 **This unit shall not be used to provide power during a voluntary agreed to power outage and/or power reduction initiated under an Interruptible Service Contract (ISC); Demand Response Program (DRP); Load Reduction Program (LRP) and/or similar arrangement(s) with the electrical power supplier.**

Verification: The project owner shall certify compliance with this condition in the facility's annual summary report required by AQ-20 and its verification and shall make the site and data available for inspection by representatives of the MDAQMD, EPA or CEC.

Condition of Certification AQ-FE1 applies only to the Fire Pump Engine

AQ-FE1 **The hour limits of Condition 4 can be exceeded when the emergency fire pump assembly is driven directly by a stationary diesel fueled CI engine when operated per and in accord with the National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems," 1998 edition.**

Verification: The project owner shall certify compliance with this condition in the facility's annual summary report required by AQ-20 and its verification and shall make the site and data available for inspection by representatives of the MDAQMD, EPA or CEC.

REFERENCES

CEC 2001a – California Energy Commission (CEC). (TN 20388) High Desert Power Project (97-AFC-1C) Approval of Request to Change High Desert Power Plant Project Condition or Certificate AQ-33 to Require Surrender of ERCs Prior to Commercial Operation, dated May 22, 2001.

CEC 2001b – California Energy Commission (CEC). (TN 22282) High Desert Power Project (97-AFC-1C) Approval of Requests for Site Arrangement and Equipment Changes, dated September 5, 2001.

CEC 2003 – California Energy Commission (CEC). High Desert Power Project (97-AFC-1C) Email Communication from CEC Staff Approving Emergency Generator, dated July 1, 2003.

CEC 2004 – California Energy Commission (CEC). (TN 32607) High Desert Power Project (97-AFC-1C) Order Approving a Petition to Modify Air Quality Conditions Regarding Startup and Other Requirements, dated October 20, 2004.

CEC 2008 – California Energy Commission (CEC). (TN 32607) High Desert Power Project (97-AFC-1C) ORDER APPROVING a Petition to Modify Air Quality Conditions Relating to Source Test Intervals and Other Administrative Changes, dated July 31, 2008.

HDPP 2022a – High Desert Power Project, LLC (HDPP). (TN 246160) Prevention of Significant Deterioration (PSD) Applicability Analysis for Turbine Upgrades at the High Desert Power Project (Revised), dated June 16, 2022.

HDPP 2022b – High Desert Power Project, LLC (HDPP). (TN 246160) Petition to Amend HDPP – Administrative Changes to Air Quality Conditions, dated September 20, 2022.

MDAQMD 2020 – Mojave Desert Air Quality Management District (MDAQMD), California Environmental Quality Act (CEQA) and Federal Conformity Guidelines, dated February 2020.

MDAQMD 2022a – Mojave Desert Air Quality Management District (MDAQMD), Proposed Federal Operating Permit – High Desert Power Project, LLC, dated November 15, 2022.

MDAQMD 2022b – Mojave Desert Air Quality Management District (MDAQMD), Proposed Federal Operating Permit – High Desert Power Project, LLC, dated December 5, 2022.

MDAQMD 2022c – Mojave Desert Air Quality Management District (MDAQMD), Preliminary Determination/Decision - Statement of Basis for Minor Modification to and Renewal of FOP Number: 104701849 For: High Desert Power Project, LLC dated December 15, 2022.