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CALIFORNIA ENERGY COMMISSION

DATE: May 2023

TO: Interested Parties

FROM: Joseph Douglas, Compliance Project Manager

SUBJECT: **Huntington Beach Energy Project (12-AFC-02C)**

CEC Staff Analysis of Petition to Amend the Final Commission Decision

On May 11, 2022, AES Huntington Beach Energy, LLC (AES), the project owner, filed a post certification petition with the California Energy Commission (CEC) requesting to amend the Huntington Beach Energy Project (HBEP) Final Commission Decision (Decision). The project owner is seeking approval to increase the annual combined cycle gas turbine (CCGT) operating hours.

The HBEP is a 644-megawatt (MW) combined-cycle power plant located at 21730 Newland Street, in the city of Huntington Beach, Los Angeles County. The project was certified by the CEC in May 2017 as an 844-MW power plant project, with a 644 MW combined-cycle, natural gas-fired power block, and two simple cycle gas-fired turbines that would produce 200 MW. To date, the simple cycle turbines have not been built. The 644-MW combined cycle portion of the project began operation in June 2020.

Description of Proposed Change

The project owner is seeking approval to:

- Increase the annual CCGT operating hours from 6,640 hours per unit per year (including starts and stops) to 7,640 hours per unit per year (including starts and stops).
- Modify air emission limits commensurate with the modification of annual CCGT operating hours.

CEC Staff Review and Conclusions

California Code of Regulations, title 20, section 1769 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.

Consistent with California Code of Regulations, title 20, section 1769(a)(4), the CEC staff (staff) has reviewed the petition for potential environmental effects and consistency with applicable laws, ordinances, regulations, and standards (LORS) and

the HBEP's conditions of certification (COCs). Based on staff's analysis, contained below, staff has concluded that, with regard to the proposed changes to HBEP (1) there is no possibility that the change may have a significant effect on the environment, (2) the changes would not cause the project to fail to comply with any applicable LORS, and (3) the changes would not require a change to, or deletion of, any COCs as adopted in the Decision or previous amendments to that Decision, if any, except for those related to Air Quality. For the changes to the Air Quality COCs in the Decision and consistent with California Code of Regulations, title 20, section 1769(a)(3)(B), in addition to the conclusions made above, staff has concluded that the modified HBEP would increase annual emission limits. Thus, staff is bringing this petition to the Commission for approval pursuant to California Code of Regulations, title 20, section 1769(a)(4).

Staff recommends the addition of new COCs**: AQ-1, AQ-26, AQ-45, AQ-56, AQ-62, and AQ-65** for consistency with the new Authority to Construct permit issued by the South Coast Air Quality Management District (SCAQMD) to make the effect on the environment less than significant.

Staff also concludes that none of the findings specified in California Code of Regulations, title 20, section 1748(b) apply to the proposed changes. Based on the additional air quality conditions of certification, staff is supplementing the existing staff assessment, consistent with Public Resources Code section 21166 and California Code of Regulations, title 14, section 15163.

Staff concludes that, with the adoption of the recommendations in the analysis below, HBEP would remain in compliance with applicable LORS, and the proposed changes to HBEP would not result in any significant adverse direct, indirect, or cumulative impacts to the environment.

Staff intends to recommend approval of the petition at the July 12, 2023, Business Meeting of the CEC.

The CEC's project webpage, https://www.energy.ca.gov/powerplant/combined-cycle/huntington-beach-energy-project, has a link to the petition and the Staff Analysis on the right side of the webpage in the box labeled "Compliance Proceeding." Click on the "Docket Log (12-AFC-02C)" option. If approved, the CEC's Order approving this petition will also be available from the same webpage.

This letter has been mailed to the CEC's list of interested parties and property owners of all parcels within 500 feet of any affected project linears and 1,000 feet of the project site. It has also been emailed to the HBEP subscription list. The list is an automated the CEC email system by which information about this facility is emailed to parties who have subscribed. To subscribe, go to the CEC's project webpage, cited above, scroll down the right side of the project's webpage to the box labeled "Subscribe," and provide the requested contact information.

Any person may comment on the Staff Analysis. Those who wish to submit comments on the analysis prior to the CEC July 12, 2023, Business Meeting may do so by using the CEC's electronic commenting feature. 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 may also be mailed or hand-delivered to:

California Energy Commission
Docket Unit, MS-4
Docket No. 12-AFC-02C
715 P Street
Sacramento, CA 95814-5512

Comments will also be accepted during the scheduled July 12 2023 Business Meeting. All comments and materials filed with the Docket Unit will be added to the facility Docket Log and become publicly accessible on the CEC's project webpage.

If you have questions about this notice, please contact Compliance Project Manager Joseph Douglas, Compliance Monitoring and Enforcement Unit, Safety and Reliability Branch, at (916) 956-9527 or via e-mail 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.

News media inquiries should be directed to the CEC's Media Office at (916) 654-4989, or by e-mail to mediaoffice@energy.ca.gov.

Mail List: 7437
Listserv: Huntington Beach Energy Project

HUNTINGTONBEACH ENERGY PROJECT (12-AFC-02C)
Petition to Amend Commission Decision
EXECUTIVE SUMMARY
Joseph Douglas

INTRODUCTION

On May 11, 2022, AES Huntington Beach Energy, LLC (AES), filed a post certification petition (TN#243008) with the California Energy Commission (CEC) requesting to amend the Huntington Beach Energy Project (HBEP) CEC Final Decision (Decision) to increase the annual combined cycle gas turbine (CCGT) operating hours. The CEC staff (staff) has completed its review of all materials received.

The HBEP is a 644-megawatt (MW) combined-cycle, power plant located at 21730 Newland Street, in the city of Huntington Beach, Los Angeles County. The project was certified by the CEC in May 2017 and began commercial operation in June 2020.

The HBEP was licensed as an 844-MW power plant project, with a 644 MW combined-cycle, natural gas-fired power block, and two simple cycle gas-fired turbines that would produce 200 MW. To date, the simple cycle turbines have not been built. The 644-MW combined cycle portion of the project began operation in June 2020.

Staff is supplementing the existing staff assessment to account for additional conditions of certification for air quality.

DESCRIPTION OF PROPOSED CHANGE(S)

The project owner is seeking approval to:

- Increase the annual CCGT operating hours from 6,640 hours per unit per year (including starts and stops) to 7,640 hours per unit per year (including starts and stops).
- Modify air emission limits commensurate with the modification of annual CCGT operating hours as follows:
  - Annual emissions of particulate matter with an aerodynamic diameter of 10 microns or less (PM10) will increase by 8.5 tons per year (tpy).
  - Annual emissions of particulate matter with an aerodynamic diameter of 2.5 microns or less (PM2.5) will increase by 8.5 tpy
  - Annual carbon monoxide (CO) emissions will increase by 7.65 tpy.
  - Annual nitrogen oxide (NOX) emissions will increase by 16.8 tpy.
  - Annual sulfur oxide (SOX) emissions will increase by 1.5 tpy.
  - Annual volatile organic compound (VOC) emissions will increase by 5.8 tpy.

The purpose of the CEC's review process is to assess whether the project changes proposed in the petition would have a significant impact on the environment or cause

the project to not comply with applicable laws, ordinances, regulations, and standards (LORS) (Cal. Code Regs., tit. 20, § 1769).

NECESSITY FOR THE PROPOSED CHANGE(S)

The primary purpose and need for this amendment is to change the annual operating hours of the CCGTs. The proposed changes are necessary to meet the projected electrical demand in the Los Angeles Basin with the most efficient delivery of non-renewable energy.

CEC STAFF REVIEW AND CONCLUSION

Staff has reviewed the petition pursuant to California Code of Regulations, title 20, section 1769. Consistent with subdivision (a)(4), the staff recommends the Commission approve the petition and adopt staff's proposed new and modified conditions of certification (COCs).

Consistent with California Code of Regulations, title 20, section 1769, staff has reviewed the petition for potential environmental effects and consistency with applicable LORS. Staff concludes that the proposed changes to the HBEP would not have a significant effect on the environment or cause the project to fail to comply with any applicable LORS, with the implementation of COCs as adopted in the Decision or previous amendments to that decision, and adoption of new or modified COCs in the area of Air Quality.

For the changes to the Air Quality COCs in the Decision, and consistent with California Code of Regulations, title 20, section 1769(a)(3)(B), staff has determined the modified HBEP (1) would not have a significant effect on the environment, (2) would continue to comply with the applicable LORS, and (3) would increase annual, or other emission limit. Staff recommends the addition of new air quality COCs **AQ-1, AQ-26, AQ-45, AQ-56, AQ-62, and AQ-65** for consistency with the new Authority to Construct permit issued by the South Coast Air Quality Management District (SCAQMD) to make the effect on the environment less than significant.

Staff also concludes the findings specified in California Code of Regulations, title 20, section 1748(b) do not apply to the proposed changes.

Based on the additional air quality conditions of certification, staff is supplementing the existing staff assessment, consistent with Public Resources Code section 21166 and California Code of Regulations, title 14, section 15163.

ENVIRONMENTAL SETTING

The project site is in the city of Huntington Beach in Orange County located in the South Coast Air Basin. The HBEP is located on approximately 30 acres of a 106-acre parcel within the existing Huntington Beach Generating Station site located at 21739 Newland Street. The 106-acre site is bordered by a manufactured home/recreation vehicle park on the west, the Huntington Beach Channel and residential areas to the north and east, a tank farm to the north, the Huntington Beach Wetland Preserve/Magnolia Marsh wetlands on the southeast, and the Huntington Beach State Park and the Pacific Ocean to the south and southwest. The nearest inhabitants are located in a residential area approximately 300-400 feet from the site. The closest school is Edison High School located approximately 0.6 mile (3,200 feet) northeast of the site.

STAFF'S ASSESSMENT OF THE PROPOSED PETITION

Staff's assessment of the proposed changes considered the potential impacts to the population within the disadvantaged community, including the environmental justice population within a six-mile radius of HBEP.

Staff reviewed the petition for potential environmental effects and consistency with applicable LORS. Staff's conclusions for all technical and environmental areas are summarized in **Executive Summary Table 1.**

Executive Summary 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					X
Geological and Paleontological Resources				X	X
Hazardous Materials Management				X	X
Land Use				X	X
Noise and Vibration				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.

For the technical area of Air Quality, staff has proposed new COCs. With the addition of COCs **AQ-1, AQ-26, AQ-45, AQ-56, AQ-62, and AQ-65**, the project would continue to comply with all applicable LORS. The proposed project change(s) would not result in significant impacts to ambient air quality, public health, or greenhouse gas emissions. The details of the proposed additional COCs can be found under the Air Quality section in this Staff Analysis.

For the remaining environmental and technical areas, 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 COCs.

The basis for each of staff's conclusions are provided below:

AIR QUALITY

Air quality impacts from increasing the annual hours of operation for the CCGTs are considered less than significant with the adoption of the recommended mitigation.

Please see the attached Air Quality analysis for further information.

BIOLOGICAL RESOURCES

The petition proposes to increase the annual operating hours of the CCGTs by 1000 hours for each of the two CCGT units, which would also increase the NOx emissions by 16.8 tons per year. NOx contributes to nitrogen deposition and can have negative impacts on plant communities. However, the increase of NOx resulting from the changes proposed in the petition are minimal to the overestimation accounted for in the original analysis completed during the CEC's licensing of HBEP. Therefore, the proposed modifications would have less than significant impacts on biological resources and comply with all LORS.

CULTURAL RESOURCES

The proposed modification does not require any ground disturbance or equipment changes. It therefore has no potential to affect cultural resources.

EFFICIENCY

This petition would not impact the CCTGs' heat rate and thus would not impact the thermal efficiency of the power plant.

FACILITY DESIGN

There would be no installation or construction activities associated with this petition, and thus, there would be no impact to Facility Design.

GEOLOGICAL AND PALEONTOLOGICAL RESOURCES

The proposed modification does not require any ground disturbance or equipment changes. It therefore has no potential to affect geological or paleontological resources.

HAZARDOUS MATERIALS MANAGEMENT

The increased start hours for the CCGT would not use any hazardous materials. Therefore, the proposed project change would not have a significant impact on the environment.

LAND USE

The modification of annual operating hours for the CCGT would not require any earth-moving activities, physical changes, or operational changes at HBEP beyond revising the existing SCAQMD operational permits. Therefore, the modification would not constitute a change in existing land use. There is no land use related COCs applicable to the change in the Decision and the HBEP would continue to comply with LORS. The proposed change would not physically divide an established community or cause a significant environmental impact due to a conflict with LORS adopted for the purpose of avoiding or mitigating an environmental effect. Further, the change would not result in the conversion of farmland or forest land or conflicts with agricultural operations. Therefore, the modification of annual operating hours for the CCGT would have no impacts to land use.

NOISE AND VIBRATION

There would be no installation or construction activities associated with this petition to amend. Although operating hours for CCGTs would increase, the operational noise levels would remain the same. Thus, there would be no noise impact.

PUBLIC HEALTH

All proposed changes would conform with the applicable LORS related to air quality and would not result in significant air quality or public health impacts to any environmental population including minority or low-income populations.

RELIABILITY

The proposed modifications would not impact the reliability of HBEP; however, it would help California meet its energy reliability needs.

SOCIOECONOMICS

The modification of annual operating hours for the CCGT would not require any earth-moving activities, physical changes, or operational changes that would necessitate a temporary construction workforce or changes in operational workforce at the HBEP. There is no socioeconomics related LORS or COCs applicable to the change and there would be no workforce related impacts on population and housing, and on public

services. Therefore, the modification of annual operating hours for the CCGT would have no impacts to socioeconomics.

SOIL AND WATER

The proposed modification would occur entirely within the developed project site, would not result in any ground disturbance, nor would it result in an increase in water consumption or wastewater discharge. The proposed modification would not require changes to the COCs for soil and water resources.

TRAFFIC AND TRANSPORTATION

The modification of annual operating hours for the CCGT would not require any earth-moving activities, physical changes, or operational changes that would necessitate additional vehicle trips into or out of the HBEP. There is no transportation related LORS or COCs applicable to the change. The change would not conflict with LORS addressing the circulation system, substantially increase hazards, or result in inadequate emergency access. Therefore, the modification of annual operating hours for the CCGT would have no impacts to transportation.

TRANSMISSION LINE SAFETY AND NUISANCE

The proposed change to the HBEP's operating hours will not affect transmission line safety and nuisance. With the implementation of the existing COCs, the project will continue to comply with applicable LORs.

TRANSMISSION SYSTEM ENGINEERING

The proposed change to the HBEP's operating hours will not affect the facility's transmission interconnection. Continued implementation of the existing COCs will ensure that the project continues to comply with applicable LORs.

VISUAL RESOURCES

The modification of annual operating hours for the CCGT would not require any earth-moving activities or physical changes at the HBEP. The modification would not change the physical appearance of the HBEP from public views and there are no visual resources related LORS or COCs applicable to the change. The requested change would not have a substantial adverse effect on a scenic vista, scenic resources, the existing visual character or quality of public views of the project site and its surroundings, or create a new source of substantial light or glare adversely affecting day or nighttime views in the area. Therefore, the modification of annual operating hours for the CCGT would have no impacts to visual resources.

WASTE MANAGEMENT

This petition does not require changes to the waste management setting described in the Decision and subsequent amendments. The proposed change will not result in an increase in waste generation at the site. Therefore, no impacts to waste management are expected and no additional mitigation measures are required. The proposed modification does not require changes to the COCs for waste management.

WORKER SAFETY AND FIRE PROTECTION

The increased start hours for the CCGT would not require any construction. Therefore, the project change would not have a significant impact on the offsite public or environment.

ENVIRONMENTAL JUSTICE

CALENVIROSCREEN

Staff reviewed CalEnviroScreen 4.0 data to determine whether the United States census tract where the Huntington Beach Energy Project is located (6059099220) 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 CalEnviroScreen 4.0 overall percentile score for this census tract is 28 and, thus, is not identified as a disadvantaged community[1].

Environmental Justice Figure 1 shows 2020 census blocks in the six-mile radius of the Huntington Beach Energy Project 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

[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/

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.

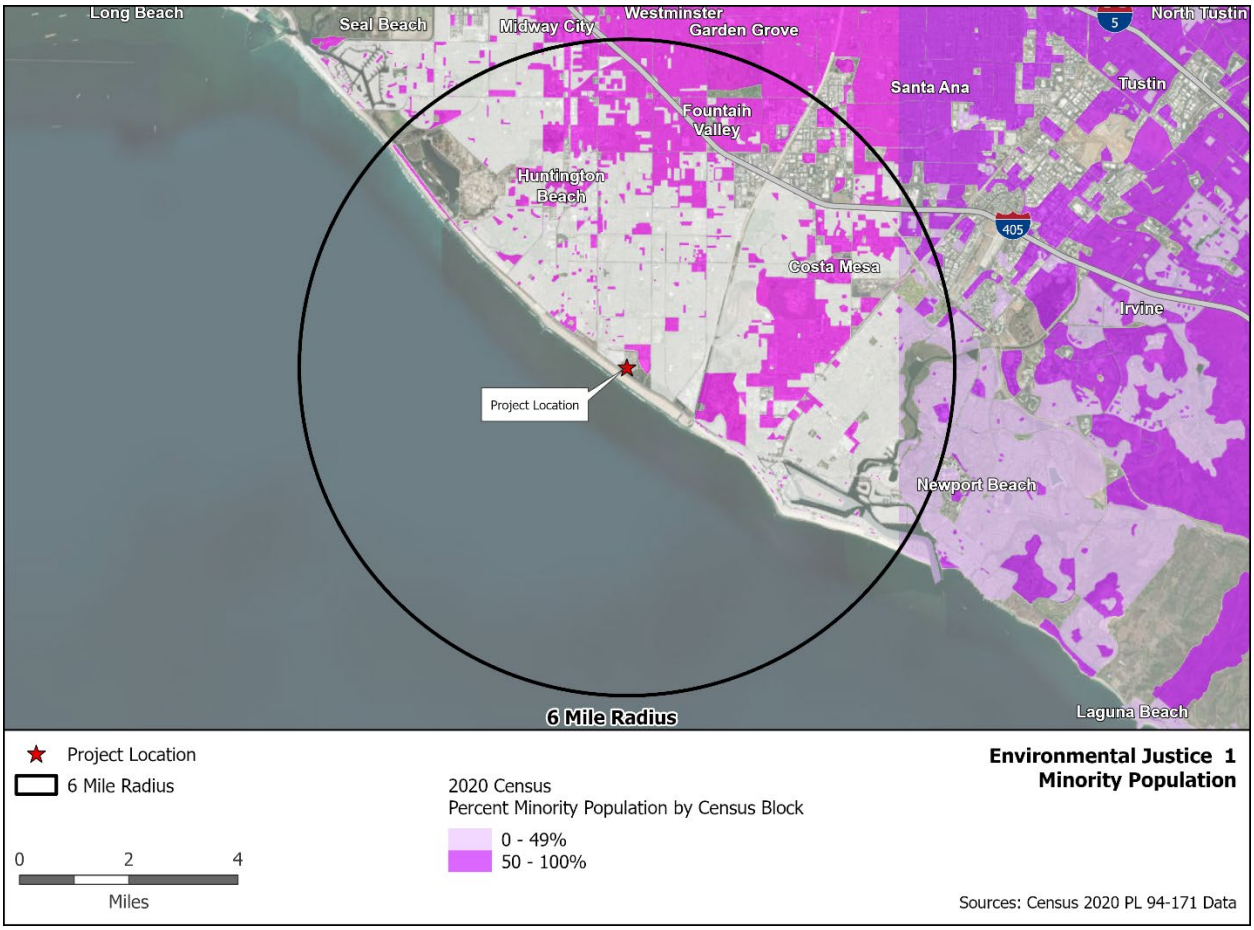
Based on California Department of Education data in the **Environmental Justice Table 1**, staff concluded that the percentage of those living in the Ocean View Elementary School District (in a six-mile radius of the project site) and enrolled in the free or reduced-price meal program are larger than 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 – Figure 2** shows where the boundaries of the school district are in relation to the six-mile radius around the Huntington Beach Energy Project site.

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

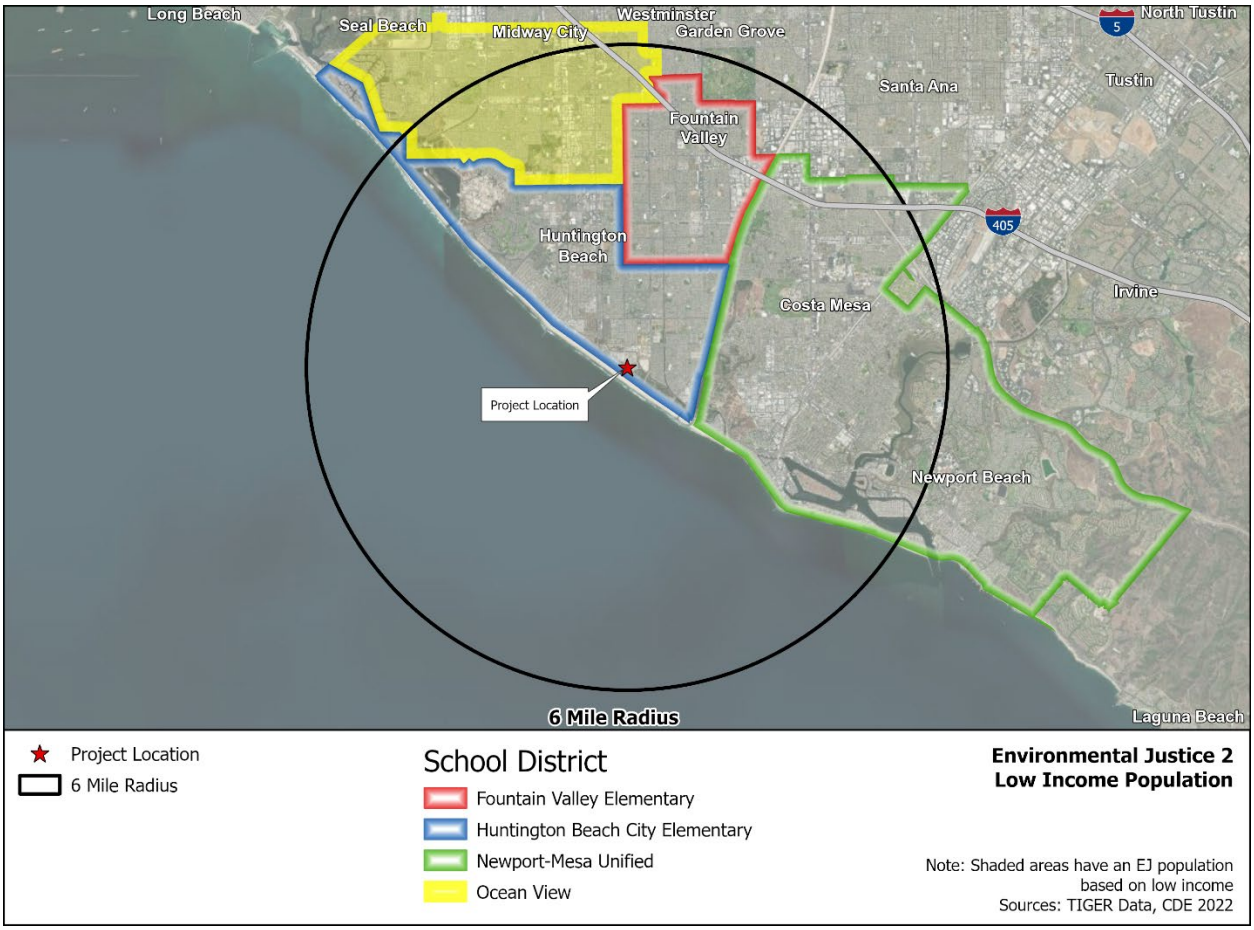
SCHOOL DISTRICTS IN SIX-MILE RADIUS	Enrollment Used for Meals	Free or ReducedPrice Meals	
Fountain Valley Elementary	5,998	1,288	21.5%
Huntington Beach City Elementary	5,224	1,041	19.9%
Newport-Mesa Unified	17,962	6,037	33.6%
Ocean View Elementary	6,942	3,959	57.0%
REFERENCE GEOGRAPHY			
Orange County	448,729	208,756	46.5%
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.

ENVIRONMENTAL JUSTICE FIGURE 1 - MINORITY POPULATION



ENVIRONMENTAL JUSTICE FIGURE 2 – LOW INCOME POPULATION



Environmental Justice Conclusions

For the technical areas that address EJ and would be affected by the project change—Air Quality and Public Health—staff concludes that impacts would be less than significant, and thus impacts on the EJ population, represented in Environmental Justice **Figures 1** and **2**, and **Table 1**, would be less than significant.

In the Air Quality analysis, staff proposes new COCs to mitigate potentially significant impacts on the environment. Staff has determined that by adopting the proposed new COCs, the proposed change would not cause significant impacts for any population in the HBEP's six-mile radius, including the EJ population. The impacts to the EJ population are less than significant.

CEC STAFF RECOMMENDATIONS AND CONCLUSIONS

Staff has reviewed the petition pursuant to California Code of Regulations, title 20, section 1769(a)(4). Staff recommends the Commission approve the petition.

Consistent with California Code of Regulations, title 20, section 1769(a)(4), staff has reviewed the petition for potential environmental effects; consistency with applicable LORS; and HBEP's COCs. Staff concludes that, with regard to the proposed changes to HBEP (1) there is no possibility that the changes may have a significant effect on the environment, (2) the changes would not cause the project to fail to comply with any applicable LORS, and (3) the changes would not require a change to, or deletion of, any COCs as adopted in the Decision or previous amendments to that decision, if any, except for those related to Air Quality. For the changes to the Air Quality COCs in the Decision and consistent with California Code of Regulations, title 20, section 1769(a)(3)(B), in addition to the conclusions made above, staff concludes the modified HBEP would increase annual, or other emission limits, but with the addition of new COCs: **AQ-1, AQ-26, AQ-45, AQ-56, AQ-62, and AQ-65** for consistency with the new Authority to Construct permit issued by the SCAQMD, the effect on the environment would be less than significant.

Staff also concludes the findings specified in California Code of Regulations, title 20, section 1748(b) do not apply to the proposed changes.

Based on the additional air quality conditions of certification, staff is supplementing the existing staff assessment, consistent with Public Resources Code section 21166 and California Code of Regulations, title 14, section 15163.

HUNTINGTON BEACH ENERGY PROJECT (12-AFC-02C)
Petition to Amend Commission Decision
AIR QUALITY, PUBLIC HEALTH, AND GREENHOUSE GASES
Andres Perez

SUMMARY AND CONCLUSIONS

In this Petition to Amend (PTA), AES Huntington Beach Energy, LLC (AES) has proposed to increase the annual operating hours for the Huntington Beach Energy Project's (HBEP) combined-cycle gas turbines by 1,000 hours, from 6,640 hours to 7,640 hours.

The proposed changes would result in an increase to potential annual facility emissions of nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compounds (VOCs), particulate matter less than 10 or 2.5 microns in size (PM10/PM2.5), and sulfur oxides (SOx). The proposed changes would also result in a potential increase in annual natural gas usage and associated greenhouse gas (GHG) emissions. The increases in potential emissions result from the proposed increase in operation of the combined-cycle gas turbines.

There are no proposed changes to the maximum hourly, daily, or monthly emissions for any facility equipment.

The petitioner would be required to hold additional Regional Clean Air Incentives Market (RECLAIM) Trading Credits to mitigate the annual increases in NOx and SOx emissions. Staff is also recommending updates to the conditions of certification to ensure compliance with all laws, ordinances, regulations, and standards (LORS). With the proposed mitigation, the air quality impacts from increasing the annual hours of operation for the combined-cycle gas turbines (CCGT) are considered less than significant. There would be no air quality environmental justice issues related to the proposed facility modifications and no minority or low-income populations would be significantly or adversely impacted. The facility would continue to comply with all applicable LORS.

BACKGROUND

On May 11, 2022, AES filed a Petition (AES 2022) with the California Energy Commission (CEC) requesting project modifications to the existing HBEP Final Commission Decision (Decision).

HBEP was certified by the CEC as a multi-phase project on May 31, 2017 (CEC 2017). It was certified as a nominal 844-megawatt (MW), natural gas-fired, combined-cycle and simple-cycle replacement power plant located at 21730 Newland Street, Huntington Beach, the site of the existing AES Huntington Beach Generating Station (HBGS).

Originally planned to include two power blocks, Power Block 1 and 2, the subject petition states that the simple-cycle gas turbine (SCGT) power block is no longer planned. AES adds that the South Coast Air Quality Management District (SCAQMD) Permits to Construct (PTCs) were cancelled in September 2021 (AES 2022).

Power Block 1 consists of a CCGT power block, and Power Block 2 would have consisted of a SCGT power block. Each power block was planned to be served by a separate oil water separator and ammonia storage tank. On January 31, 2020, the CCGT power block (Phase 1) transitioned from commissioning to operation. Construction of the SCGT power block (Phase 2) has not commenced.

Currently, HBEP is a nominal 644 MW (net output) power plant. Power Block 1 includes two combustion turbine generators (CTGs) with gross nominal ratings of 236.1 megawatts (MW) each, and one shared steam turbine generator (STG) with a nominal rating of 221.4 MW (AES 2022). Each CTG exhausts to a heat recovery steam generator (HRSG) without supplemental firing capabilities. The CTG/HRSG trains feed into the common STG in a 2-on-1 configuration. Power Block 1 includes an air-cooled condenser, a 70.8 million British thermal units per hour (MMBtu/hr) auxiliary boiler, and related ancillary equipment. Construction of Power Block 1 is complete.

Power Block 2 would have included two 100-MW simple-cycle, intercooled CTGs. Each SCGT included dry low NOx combustors, selective catalytic reduction (SCR) equipment for NO_x reduction, an oxidation catalyst to reduce CO emissions, and ancillary equipment. Construction of Power Block 2 has not commenced.

The subject PTA requests that the CEC approve an increase of 1,000 hours to the approved annual operating hours of the CCGTs, from 6,640 hours per year to 7,640 hours per year.

During December 2021, AES filed an application with the SCAQMD to modify the SCAQMD-issued operating permit to increase the annual operating hours of the CCGTs and amend relevant permit conditions to reflect the change.

The HBEP is a major source and requires a Title V operating permit. On March 14, 2023, SCAQMD provided evaluations and proposed operating permits incorporating the proposed changes for review. The evaluation triggered a 45-day United States Environmental Protection Agency (U.S. EPA) regulatory review and a 30-day public noticing period.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS) COMPLIANCE

SCAQMD reviewed the proposed modifications and determined that, with changes to the SCAQMD issued permit conditions, the proposed changes would comply with their

current rules and regulations. A compliance summary is included in **Air Quality Table 1**.

There have been changes to air quality laws, ordinances, regulations, and standards (LORS) applicable to the project since the Final Commission Decision. **Air Quality Table 1** includes a summary of the air quality LORS applicable to the changes proposed in this amendment. This table is not intended to be comprehensive of all HBEP facility LORS. The conditions of certification in the Final Commission Decision and amendments thereafter ensure that the facility would remain in compliance with all applicable LORS.

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

APPLICABLE LAW	DESCRIPTION AND COMPLIANCE
Federal	**U.S. Environmental Protection Agency (U.S. EPA)**
Title 40, Code of Federal Regulations, part 50 (National Primary and Secondary Ambient Air Quality Standards)	Part 50 establishes the National Ambient Air Quality Standards (NAAQS). NAAQS define levels of air quality that are necessary to protect public health. The air quality modeling results indicate that the potential impacts from the proposed changes would not cause a significant impact for annual NO_2, PM10, or PM2.5. Therefore, the proposed project would not cause a violation nor make significantly worse an existing violation to any NAAQS. Compliance is expected.
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. Includes provisions for Good Engineering Practices (GEP) for stack height. 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. SCAQMD has partial delegation of PSD authority from the U.S. EPA depending on the calculation methodology and plantwide applicability limits. AES opted to apply to the SCAQMD. The SCAQMD performed a PSD review. Continued compliance is expected. See the Analysis Section for details.
Title 40, Code of Federal Regulations, part 60, subpart A (General Provisions)	Outlines general requirements for facilities subject to standards of performance including notification, work practice, monitoring, and testing requirements.

Title 40, Code of Federal Regulations, subpart KKKK (Standards of Performance for Stationary Combustion Turbines)	Establishes new source performance standards for combustion turbines commencing construction, modification, or reconstruction after February 18, 2005. This subpart is applicable to both the CCGTs and SCGTs. The subpart limits NOx emissions to 15 parts per million (ppm) at 15 percent oxygen (O_2) and fuel sulfur limit of 0.060 pounds (lbs) of sulfur oxides (SOx) per MMBtu heat input. The proposed changes do not affect the NOx emission concentration requirements. The CCGTs are subject to a 2.0 ppm NOx limit. Compliance with the NOx limits will be monitored with a CEMS. Compliance with the fuel sulfur limit is based on the Southern California Gas Company Tariff Rule No. 30 limiting the fuel total sulfur. Compliance with all other provisions, including recordkeeping, is expected.
Title 40, Code of Federal Regulations, part 60, subpart TTTT (Standards of Performance for Greenhouse Gas Emissions for Electrical Generating Units)	Establishes standards of performance for carbon dioxide (CO_2). Affected baseload electric generating units are subject to a gross energy output standard of 1,000 lbs of CO_2 per megawatt hour (MWh). AES is required to comply with the regulations and the conditions of certification include Subpart TTTT requirements.
Title 40, Code of Federal Regulations, part 63, subpart YYYY (National Emission Standards for Hazardous Air Pollutants for Stationary Gas Turbines)	This subpart establishes requirements for facilities that are major sources of hazardous air pollutants (HAPS). The facility is considered an area source of HAPS and not a major source of HAPS since HAP emissions are less than the 25 ton per year facility threshold and 10 ton per year pollutant threshold.
Title 40, Code of Federal Regulations, part 64 (Compliance Assurance Monitoring (CAM))	CAM regulations apply to major stationary sources that use control equipment to achieve emission limits. The CCGTs are located at a major source. The CCGT's NOx, CO, and volatile organic compound (VOC) emissions are subject to Best Available Control Technology (BACT) requirements. Applicable BACT limits are met by using external control equipment consisting of an SCR catalyst and a CO oxidation catalyst. Compliance for CCGT CO and NOx requirements are demonstrated through the use of CEMS. The CO oxidation catalysts also control VOC emissions at specified temperatures. Compliance with the VOC emission limit is demonstrated through CO compliance and through source testing. Compliance with the monitoring requirements is expected.
Title 40, Code of Federal Regulations, part 70 (State Operating Permit Programs)	Part 70 establishes the Title V permitting program. HBEP is considered a federal major source and subject to the Title V Operating Permit Program. Title V permits consolidate federally enforceable operating limits. An updated Title V application has been submitted as part of SCAQMD requirements. Continued compliance is expected.

Title 40, Code of Federal Regulations, part 72 -78 (Acid Rain Provisions)	The acid rain program requirements establish controls for sulfur dioxide (SO_2) and NOx emissions from fossil fuel-fired combustion used to generate electricity. Facilities are required to cover SO_2 emissions with allowances or offsets. Compliance with acid rain provisions is implemented through the Title V program. This program is within the jurisdiction of the SCAQMD with U.S. EPA oversight. SO_2 emissions are monitored through fuel meters and gas analysis. If HBEP requires additional SO_2 credits they would acquire the necessary SO_2 allowances from the SO_2 trading market. Compliance is expected.
State	**California Air Resources Board and Energy Commission**
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 SCAQMD New Source Review (NSR) program needs to be consistent with regional air quality management plans. Compliance is expected.
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. Prohibits visible emissions darker than Ringelmann 2 or 40 percent opacity. The SCAQMD issued HBEP two Notices of Violation (NOVs) during the CCGT commissioning. See additional discussion in Rule 402 discussion.
Health & Safety Code, section 42301.6 (AB 3205)	Establishes noticing requirements for projects within 1,000 feet of a school site. Since HBEP is not located within 1,000 feet of a school site, these public noticing requirements do not apply.
Title 17, California, Code, of Regulations, subchapter 10 (Climate Change)	Established requirements for mandatory greenhouse gas reporting, verification and other requirements pursuant to cap and trade regulations. Compliance is expected.
Title 20, California Code of Regulations, sections 2900-2913 (Provisions Applicable to Power Plants 10 MW and Larger)	Establishes the greenhouse gases emission performance standard (EPS), applicable to 10 MW and larger power plants (SB1368). Compliance is expected. See additional discussion in the Greenhouse Gas Analysis Section.
Local	**South Coast Air Quality Management District**
Regulation II – Permits Rules 201-204 (Permit to Construct, Temporary Permit to Operate, Permit to Operate, Permit Conditions)	Written authorizations shall be obtained prior to the use or replacement of any equipment which may eliminate, reduce or control air contaminants. The permit to construct serves as a temporary permit to operate prior to the issuance of the final operating permit. This rule establishes the ability for the SCAQMD to impose conditions on any permit as needed to assure compliance with all applicable regulations. Compliance is expected.

Regulation II – Permits Rule 212 (Standards for Approving Permits and Issuing Public Notice)	Outlines specific criteria for approving permits and issuing public notice. Outlines requirements for Regional Clean Air Incentives Market (RECLAIM) facilities. The proposed changes do not trigger Rule 212 public noticing requirements because HBEP is not located within 1,000 feet of a school site, and the annual emission increases would not exceed noticing thresholds. Public noticing is not required under Rule 212 but is required because the project is considered a significant modification under Title V.
Regulation II – Permits Rule 218/Rule 218.1 (Continuous Emission Monitoring (CEM))	Establishes requirements for CEMS. This applies only to CEMS which are not subject to RECLAIM. Only the CO CEMS will be subject to Rule 218 requirements; the NOx CEMS are subject to RECLAIM requirements (including missing data and available data requirements). Compliance is expected.
Regulation II – Permits Rule 218.2/Rule 218.3 (Continuous Emission Monitoring: General Provisions)	These rules will become the applicable CEMS specification rules for CEMS that are currently subject to Rule 218 and 218.1 at any time that an application for a CEMS recertification is submitted after January 1, 2022, but no later than January 1, 2025. The rules will also supersede the RECLAIM CEMS requirements no later than 24 months after the facility exits RECLAIM.
Regulation IV – Prohibitions Rule 401 (Visible Emissions)	Establishes limits on visible emissions from stationary sources. Visible emissions are not expected from HBEP during operation. Per SCAQMD, HBEP received approximately 41 public complaints during the initial commissioning of the CCGT, from August 2019 to December 2019. The complaints were for visible emissions, odors, dust, and other concerns. The SCAQMD issued two NOVs for one CCGT exceeding the Rule 401 opacity. The SCAQMD Hearing Board issued HBEP a variance to continue commissioning. AES settled the two NOVs with the SCAQMD. SCAQMD reports the facility is currently operating in compliance with the opacity requirements.
Regulation IV – Prohibitions Rule 402 (Nuisance)	Prohibits the discharge of air contaminants or other material which could cause injury, detriment, nuisance, or annoyance to the public or could damage business or property. HBEP will use ammonia (NH_3) for emission control. When in operation, the facility will maintain a 5 ppmv ammonia slip level. Nuisance problems are not expected from HBEP under normal operations. As discussed above, AES received approximately 41 public complaints for a CCGT during commissioning. The complaints included nuisance. The SCAQMD issued two NOVs. The SCAQMD Hearing Board issued HBEP a variance to continue commissioning. AES settled the two NOVs with the SCAQMD. According to SCAQMD, there have been no public complaints since the end of December 2019.

Regulation IV – Prohibitions Rule 403 (Fugitive Dust)	Requires the prevention, reduction, or mitigation of fugitive dust emissions from project sites. The current requested modification would not result in additional construction activities. Nonetheless, existing staff conditions require dust control during construction. Continued compliance is expected during ongoing operations.
Regulation IV – Prohibitions Rule 407 (Liquid and Gaseous Contaminants)	Limits emissions of CO and sulfur compounds calculated as SO_2 from stationary sources. The permitted emission limits for the turbines are more stringent than the limits in this rule. CO emissions will be monitored by a CEMS, and the use of natural gas complies with the sulfur limit in Rule 431.1 (see below). Compliance is expected.
Regulation IV – Prohibitions Rule 409 (Combustion Contaminants)	Limits total particulate emissions on a grain per standard cubic feet basis. SCAQMD calculations show that based on normal operation PM_{10} emissions, the facility would comply with the Rule 409 limit (0.002 gr/scf against the Rule 409 limit of 0.1 gr/scf). Compliance is expected.
Regulation IV – Prohibitions Rule 431.1 (Sulfur Content of Gaseous Fuels)	Limits sulfur content in gaseous fuels to 16 ppm (calculated as hydrogen sulfide) to reduce SOx emissions. Commercial grade natural gas has an average sulfur content of 4 ppm. HBEP would only combust commercial grade natural gas. Compliance is expected.
Regulation IV – Prohibitions Rule 474 (Fuel Burning Equipment – Oxides of Nitrogen)	Establishes limits for NOx emissions from stationary sources. This rule is superseded by NOx RECLAIM pursuant to Rule 2001, Table 1. Rule 2001 clarifies that Rule 474 is not applicable to RECLAIM facilities because Rule 474 was last amended prior to October 5, 2018.
Regulation IV – Prohibitions Rule 475 (Electric Power Generating Equipment)	Limits combustion contaminant emissions (of PM10) from any equipment with a maximum rating of more than 10 MW used to produce electric power. Combustion contaminants are limited to 11 pounds per hour and 0.01 grains per dry standard cubic feet (gr/dscf) calculated at 3 percent O_2 over 15 consecutive minutes. The proposed changes would not impact the CCGTs' compliance with Rule 475 requirements because there are no changes proposed to the maximum hourly PM10 emission rates. Additionally, SCAQMD calculated PM10 emissions show that the facility would comply with this rule (0.0026 gr/scf against the Rule 475 limit of 0.01 gr/scf). Continued compliance is expected.
Regulation XI – Source Specific Standards Rule 1134 (Emissions of Oxides of Nitrogen from Stationary Gas Turbines)	Establishes NOx limits and monitoring and testing requirements for applicable gas turbines. Rule 1134 was amended on April 5, 2019. RECLAIM requirements no longer supersede Rule 1134 requirements. Rule 1134 requirements would not be applicable to HBEP because Rule 1134 does not apply to stationary gas turbines subject to Rule 1135. HBEP is subject to Rule 1135 as described below.

Regulation XI – Source Specific Standards Rule 1135 (Emissions of Oxides of Nitrogen from Electric Power Generating Systems)	Establishes NOx emission limits, startup, shutdown, tuning, monitoring, recordkeeping, reporting, and testing requirements. RECLAIM requirements no longer supersede Rule 1135 requirements. The CCGTs are subject to Rule 1135. The amendment passed on January 7, 2022 removed ammonia emission limits and aligned startup and shutdown requirements with U.S. EPA recommendations. Ammonia emission limits are now determined through the permitting process. The BACT requirements for the CCGTs meet the emission limitations for NOx. The existing license requirements for the CCGTs meet the provisions for startup and shutdown operations. HBEP's RECLAIM monitoring, recordkeeping, and reporting requirements meet Rule 1135 requirements. Staff is proposing to amend the ammonia testing requirements in **AQ-45** to incorporate the more stringent Rule 1135 ammonia testing requirement. Compliance is expected.
Regulation XIII New Source Review (New Source Review for Criteria Pollutants)	Applies to new or modified sources that may emit any nonattainment air contaminant, ozone depleting compound, or NH_3. Precursors are treated as nonattainment pollutants. This regulation establishes BACT/Lowest Achievable Emission Rate (LAER), modeling, and offset requirements. NOx emissions are regulated under Regulation XX (RECLAIM). Compliance is expected. Further discussion is included in the analysis.
Regulation XIII New Source Review (Federal PM2.5 New Source Review Program)	Outlines requirements for PM2.5 for any new major polluting facility or major modification to a major polluting facility located in areas designated as nonattainment for PM2.5. Establishes the use of LAER, offsets, certification of compliance with emission limits and alternative analysis for applicable projects. Compliance is expected. See discussion in analysis.
Regulation XIV: Toxics and Other Non-Criteria Pollutants Rules 1401/1401.1	New Source review of Toxic Air Contaminants, Requirements for New and Relocated Facilities Near Schools. Specifies limits for maximum individual cancer risk and acute and chronic hazard index for modifications to existing facilities emitting toxic air contaminants. Best Available Control Technology for Toxics (T-BACT) is required for projects with potential exposures over an established threshold. Additional health protection is established for children at schools located within 500 feet of facilities. Compliance is expected.

Regulation XVII: Prevention of Significant Deterioration (PSD) Rules 1701, 1702, 1703, 1706, 1714	Rules include: Applicability, Top Down BACT, Certificate of Compliance, Copy of Application, Analysis, and Prevention of Significant Deterioration for Greenhouse Gases. Establishes requirements for preconstruction review to ensure that the air quality in attainment does not significantly deteriorate and maintains a margin for future growth. Requirements for PSD review include use of BACT, modeling, and impact analysis. SCAQMD has partial delegation of PSD authority from the U.S. EPA depending on the calculation methodology and plantwide applicability limits. Establishes requirements for the review of greenhouse gas emissions (GHGs). Review includes a BACT analysis; however, modeling and monitoring are not required for GHGs. Compliance is expected. Further discussion is included in the analysis.
Regulation XX: Regional Clean Air Incentives Market (RECLAIM)	A series of rules establishing requirements for RECLAIM facilities. RECLAIM is designed to allow facilities flexibility in achieving emission reduction requirements for NOx and SOx through controls, equipment modifications, reformulated products, operational changes, shutdowns, other reasonable mitigation measures or the purchase of excess emission reductions. Rule 2005 – New Source review for RECLAIM. Establishes review requirements for new or modified facilities subject to the RECLAIM program. BACT is required for increases of any nonattainment air contaminant, ozone-depleting compound or ammonia. Major source applicants must also verify that all applicant-owned major stationary sources in the state are in compliance with all federal emission limitations and standards. Rule 2011 – Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Sulfur (SOx) Emissions. Outlines the specific monitoring and reporting requirements for SOx. Rule 2012 – Requirements for Monitoring, Reporting, and Recordkeeping for NOx Emissions. Outlines the specific monitoring and reporting requirements for NOx. Approval of the recommended changes to **AQ-62** and **AQ-65** would ensure compliance. Further discussion is included in the analysis.
Regulation XXX: Title V Permits	A series of rules establishing general requirements and application procedures for facilities subject to Title V requirements. SCAQMD determined that the change in operational hours amendment is considered a significant permit revision and required a 45-day U.S. EPA review period. In addition, this amendment triggered a 30-day public review period. Continued compliance is expected.

Regulation XXXI Acid Rain Permits	Title IV of the Federal Clean Air Act provides for the issuance of acid rain permits for qualifying facilities. Regulation XXXI integrates the Title V program with the RECLAIM program. Regulation XXXI requires a subject facility to obtain emission allowances for SOx emissions as well as monitoring SOx, NOx, and CO_2 emissions from the facility. Compliance is expected.

SETTING

Site Description

The project site is in the city of Huntington Beach in Orange County located in the South Coast Air Basin. The HBEP is located on approximately 30 acres of a 106-acre parcel within the existing HBGS site located at 21739 Newland Street. The 106-acre site is bordered is bordered by a manufactured home/recreation vehicle park on the west, Huntington Beach Channel and residential areas to the north and east, a tank farm to the north, the Huntington Beach Wetland Preserve/Magnolia Marsh wetlands on the southeast, and the Huntington Beach State Park and the Pacific Ocean to the south and southwest. The nearest inhabitants are located in a residential area approximately 300-400 feet from the site. The closest school is Edison High School located approximately 0.6 miles (3,200 feet) northeast of the site.

Climate and Meteorology

The climate of the South Coast Air Basin is strongly influenced by local terrain and geography. The South Coast Air Basin is a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean on the west and south, and the San Gabriel, San Bernardino and San Jacinto Mountains to the north and east. The climate is mild, tempered by cool sea breezes and is dominated by the semi-permanent high pressure of the eastern Pacific. The mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds.

Ambient Air Quality Standards

The U.S. EPA and the California Air Resources Board (CARB) 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.

Current state and federal ambient air quality standards are listed in **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

Air Quality Table 2
Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	National Standards[b]	
			Primary	Secondary
O_3	1-hour	0.09 ppm (180 µg/m^3)	—	Same as Primary Standard
	8-hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	
PM10	24-hour	50 µg/m^3	150 µg/m^3	Same as Primary Standard
	Annual Mean	20 µg/m^3	—	
PM2.5	24-hour	—	35 µg/m^3	Same as Primary Standard
	Annual Mean	12 µg/m^3	12 µg/m^3	15 µg/m^3
CO	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	—
	8-hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	—
NO_2	1-hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)[c]	—
	Annual Mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary Standard
SO_2 [d]	1-hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	—
	3-hour	—	—	0.5 ppm (1,300 µg/m^3)
	24-hour	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas)[d]	—
	Annual Mean	—	0.030 ppm (for certain areas)[d]	—

(ppb), or as a weighted mass of material per unit volume of air, in milligrams (mg) or micrograms (µg) of pollutant in a cubic meter (m^3) of ambient air, drawn over the applicable averaging period.

Ambient Air Quality Attainment Status

Air Quality Table 3 summarizes the area's attainment status for current state and federal ambient air quality standards (AAQS) for the South Coast Air Basin.

Air Quality Table 3
SCAQMD Attainment Status

Pollutants	Attainment Status Federal Classification	Attainment Status State Classification
Ozone (1-hr)[a]	**Nonattainment**	**Nonattainment**
Ozone (8-hr)	**Nonattainment**	**Nonattainment**
CO	Attainment (Maintenance)	Attainment
NO_2 (1-hr)	Unclassified/Attainment	Attainment
NO_2 (Annual)	Attainment (Maintenance)	Attainment
SO_2	Attainment	Attainment
PM10	Attainment	**Nonattainment**
PM2.5	**Nonattainment**	**Nonattainment**
Sulfates	No Federal Standard	Attainment
Lead	**Nonattainment (Partial)[b]**	Attainment
Hydrogen Sulfide	No Federal Standard	Attainment

Notes: ppm=parts per million; ppb = parts per billion; $\mu g/m^3$ = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; "—" = no standard

[a] California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values not to be exceeded. All others are not to be equaled or exceeded.

[b] National standards (other than O_3, PM, NO_2 [see note c below], and those based on annual arithmetic mean) are not to be exceeded more than once a year. The 8-hour O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. The 24 hour PM10 standard of 150 $\mu g/m^3$ is not to be exceeded more than once per year on average over a 3-year period. The 24-hour PM2.5 standard is attained when the 3-year average of 98th percentile concentration is less than or equal to 35 $\mu g/m^3$.

[c] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 0.100 ppm.

[d] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The previous SO_2 standards (24-hour and annual) will remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which an implementation plan providing for attainment of the current standard has not been submitted and approved and which is designated nonattainment under the previous SO_2 standards or does not meet the requirements of a SIP call under the previous SO_2 standards (40 CFR 50.4(3)). A SIP call is a U.S. EPA action requiring a state to resubmit all or part of its SIP to demonstrate attainment of the required NAAQS.

Sources: SCAQMD 2018, U.S. EPA 2023a

Visibility Reducing Particulates	No Federal Standard	Unclassified

Source: CARB 2023a; U.S. EPA 2023a and 2023b

Notes: [a] The federal 1-hour standard was revoked on June 15, 2005; however, the South Coast Air Basin has not attained this standard and is subject to anti-backsliding requirements.

[b] The Los Angeles County portion of the basin.

The SCAQMD is classified as nonattainment for the 24-hr and annual California Air Quality Standards (CAAQS) for PM10, the 24-hr and annual NAAQS and annual CAAQS standards for PM2.5, and both CAAQS and NAAQS for ozone. The SCAQMD is classified as partial nonattainment for lead for the Los Angeles County portion due to monitors near facilities with lead emissions. NOx, SOx, and VOCs are precursors to non-attainment pollutants. NOx and VOCs are precursors to ozone, and NOx and SOx are precursors to PM10 and PM2.5. SCAQMD considers precursor pollutants as nonattainment for the purposes of SCAQMD Regulation XIII New Source Review.

ANALYSIS

OPERATION SUMMARY AND EMISSIONS ANALYSIS

This analysis includes a review of the changes proposed in AES 2022a to increase the annual operational hours limit from 6,640 to 7,640 hours per year. Additional discussion is included below.

The first fire of CCGT 1A occurred on October 4, 2019, and the first fire of CCGT 1B occurred on October 6, 2019. HBEP officially began commercial operation in January 2020.

The existing HBGS began operation in 1958 and included four utility boilers (Units 1-4). Only one utility boiler (Unit 2) is currently in operation. The CEC HBEP license allowed Units 1 and 2 to remain in operation throughout the two phases of HBEP construction and operation based on each unit's retirement schedule. The retirement of HBGS Units 1 and Redondo Beach Generating Station (RBGS) boiler Unit 7 would mitigate emissions from the CCGTs, while the retirement of HBGS Unit 2 would mitigate the emissions from the previously proposed SCGTs. As of January 2023, AES has retired HBGS Unit 1 and RBGS Unit 7. HBGS Unit 2 is currently still in operation.

The CEC license requires AES to provide a statement that the HBGS Unit 2 is shut down within 30 days of actual shutdown, or by December 31, 2020. The license also allows for an extension of this deadline if the State Water Resources Control Board (SWRCB) extends the December 31, 2020 Once-Through Cooling (OTC) Policy compliance date, which the SWRCB did on September 1, 2020 (SWRCB 2020). The SWRCB extended the OTC Policy compliance date to December 31, 2023. AES must now provide a statement that HBGS Unit 2 has been shutdown within 30 days of actual shutdown, or by December 31, 2023.

AES is proposing to increase the annual operating hours for the CCGTs. The proposed change would not result in facility PM2.5 emissions above 70 tons per year. See additional discussion below and in the PM2.5 New Source Review Section.

Operations

The CCGTs' operating modes are startup, shutdown, and normal or 'steady-state'. Emissions of NOx, CO, and VOC during startup and shutdown periods are typically higher than during steady-state operations. AES is proposing to increase the steady-state operations by 1,000 hours annually. There are no proposed changes to startup or shutdown operations. **Air Quality Tables 4** through **6** provide the steady-state emission rates, startup and shut down emission rates, and the proposed operating profile in order to show how the revised annual emissions were calculated. **Air Quality Table 7** shows the maximum annual emissions pre- and post-modification.

Normal or steady-state operations describe the CCGTs when the CTGs, HRSGs, SCR/CO catalysts and STG are functioning as designed. During steady-state operations the emissions are controlled to BACT levels. NOx is controlled to 2.0 ppm, CO to 1.5 ppm, and VOC to 2.0 ppm, all at 15 percent oxygen. The maximum hourly emission rates for steady-state operations for the CCGTs (not including startup or shutdown emissions) are based on low temperature conditions. Annual emissions for steady-state operations are based on annual average temperature conditions. Maximum and annual average steady state hourly rates conditions are included in **Air Quality Table 4.** The emission rates are similar due to the maximum and average heat input and exhaust rates differing by less than 1% (SCAQMD 2023b, Appendix A).

Air Quality Table 4
Combined-Cycle Hourly Steady-State Emission Rates (Per Unit, lb/hr)

Combined-Cycle	NOx	CO	VOC	SOx	PM10/2.5	NH_3
Maximum Steady State Hourly Emission Rate	16.8	7.65	5.8	4.6[a]	8.5	15.5
Average Annual Steady State Hourly Emission Rate	16.8	7.65	5.8	1.5[b]	8.5	15.5

[a] Assumes complete conversion of fuel sulfur content (0.75 gr/100 scf, equivalent to 12 ppm) into SOx.
Source: SCAQMD 2023b, Appendix A

The expected maximum daily, monthly, and annual emissions for the CCGTs are determined by factoring in potential startup and shutdown events with steady-state operation. The license currently limits annual emissions and the number and duration of annual startup and shutdown events and annual emission limits but does not include a limit on the number of normal or steady-state operating hours beyond the annual operating hours limit.

During CTG startup and shutdown operating modes, higher emission rates (relative to steady state operating mode) are expected for VOC, CO, and NOx because the emission control systems are not fully functional or within the operating temperature range. The emission rates for startup and shutdown events for the CCGTs are summarized in **Air Quality Table 5**.

Air Quality Table 5
Combined-Cycle Startup and Shutdown Emission Rates (Per Unit)

Combined-Cycle	Event Duration	NOx	CO	VOC	SOx	PM10/2.5
Cold Startup (lbs/event)	60 (min)	61.0	325	36.0	4.6	8.5
Non-Cold Startup (lbs/event)	30 (min)	32.0	137	25.0	2.3	4.25
Shutdown (lbs/event)	30 (min)	10.0	133	32.0	2.3	4.25

Source: CEC 2017, SCAQMD 2023b, Appendix A

AES is proposing changes to increase the total CCGTs annual operating hours from 6,640 to 7,640 per unit. The change in hours only includes an increase to the total annual operating hours during steady-state operation and does not include any change to the maximum annual operational hours in startup and shutdown modes. There are no proposed changes to the maximum hourly, daily or monthly operating profiles. The proposed operating profile for the CCGTs per unit is included in **Air Quality Table 6**. There are no proposed changes to the maximum daily or monthly operating profiles.

Air Quality Table 6
Combined-Cycle Operating Profile (Per Unit)

Operating Parameters	Events	Hours
Daily		
Cold Startup	1	1
Non-Cold Startup	1	0.5
Shutdown	2	1
Steady-State	--	20.5
Total Daily	--	24
Monthly		
Cold Startup	15	15
Non-Cold Startup	47	23.5
Shutdown	62	31
Steady-State	--	674.5
Total Monthly	--	744
Annual		
Cold Startup	80	80
Non-Cold Startup	420	210
Shutdown	500	250
Steady-State		7,100
Total Annually		7,640

Source: CEC 2017, SCAQMD 2023b, Appendix A

Air Quality Table 7 includes the estimated maximum annual emissions (including startup and shutdown operations) for the CCGTs after the commissioning period. The

emissions are calculated based on the equipment emission rates and operating profiles for each unit. The proposed increase in the CCGT's annual hours of operation results in an increase to the potential annual emissions of NOx, CO, VOC, SOx, and PM10/2.5. There are no proposed changes to any calculated maximum hourly, daily or monthly emissions of NOx, CO, VOC, SOx, or PM10/2.5.

Air Quality Table 7
Proposed Combined-Cycle Maximum Annual Emissions
(lb/yr)

Operating Mode	NOx	CO	VOC	PM10/2.5	SOx
Cold Starts	4,880	26,000	2,880	680	120
Non-cold Starts	13,440	57,540	10,500	1,785	315
Shutdowns	5,000	66,500	16,000	2,125	375
Normal Operation	119,280	54,315	41,180	60,350	10,650
Total Emissions per CCGT	142,600	204,355	70,560	64,940	11,460
Total CCGT Power Block Emissions	285,200	408,710	141,120	129,880	22,920
Pre-Modification Total CCGT Power Block Emissions	251,600	393,410	129,520	112,880	19,920
Change[a]	+33,600	+15,300	+11,600	+17,000	+3,000

Source: SCAQMD 2023b

[a] The change is calculated by multiplying the steady-state emission rates provided in **Air Quality Table 4** by 1,000 hours and then multiplying by two turbines.

Ammonia Emissions

Ammonia is injected into the flue gas stream as part of the SCR to control NOx emissions. However, not all of the ammonia reacts to reduce NOx; a portion of the ammonia passes through the SCR and is emitted unaltered from the stacks as ammonia slip.

Per BACT, SCAQMD requires a maximum ammonia slip rate of 5.0 ppm. In the change in operating hours application to SCAQMD, AES used ammonia emission rates based on the 5.0 ppm maximum ammonia slip rate. There are no proposed changes to the auxiliary boiler maximum hourly and annual hour ammonia emission rates. The expected ammonia emissions from the CCGTs are included in **Air Quality Table 8** based on the proposed changes to the CCGT annual operating hours.

Staff is proposing to amend the ammonia testing requirements in **AQ-45** to incorporate the more stringent Rule 1135 ammonia testing requirement that came into effect on November 2, 2018. The change would require AES to switch from annual ammonia compliance to quarterly testing if any test is failed. AES would then only be able to return to annual compliance testing if it shows compliance for at least 4 consecutive quarterly tests. The amendment would make HBEP's COCs consistent with SCAQMD's turbine permits.

Air Quality Table 8
CCGT Maximum Ammonia Emissions (Per Unit)

Maximum Hourly Rate (lbs/hr)	Maximum Annual (lbs/year)	Maximum Annual (tons/year)
15.5	110,050	55.03

Notes: Ammonia emission rate based on 5.0 ppm ammonia slip rate at 15% oxygen.
Source: SCAQMD 2023b

Proposed Facility Emissions

Air Quality Table 9 includes the proposed post-commissioning annual operation emissions for the two CCGTs (including both the CCGT SCR/CO catalysts), auxiliary boiler, and CCGT Oil/Water separator. There are no expected emissions from the CCGT ammonia tanks included in **Air Quality Table 9. Air Quality Table 9** includes the calculated emissions from each category based on the operating profile evaluated in the application. There are no proposed changes to the auxiliary boiler or oil/water separator emissions.

Air Quality Table 9
Proposed Facility Total Annual Emissions (tons/year)

Equipment	NOx	CO	VOC	SOx	PM10/2.5	NH_3
Total CCGTs	142.60	204.36	70.56	11.46	64.94	110.05
Auxiliary Boiler	0.70	3.80	0.50	0.20	0.70	0.20
CCGT Oil/Water Separator	----	----	0.1	----	----	----
Proposed Total:	143.30	208.16	71.16	11.66	65.64	110.25
Previous Total:	(126.5)	(200.505)	(65.36)	(10.16)	(57.14)	(94.75)
Difference:	+16.80	+7.65	+5.80	+1.50	+8.50	+15.50

Source: SCAQMD 2023b, Staff Analysis

As demonstrated in **Air Quality Table 9,** the proposed changes would result in annual emission increases for NOx, CO, VOC, SOx, PM10/2.5, and ammonia. Mitigation for these increases is discussed below in the Mitigation Section.

Toxic Air Contaminants Emissions Analysis

The proposed modification would result in an increase in the facility's annual toxic air contaminant (TAC) emissions. The modification would not result in any changes to the facility's short-term TAC emissions. **Air Quality Table 10** shows the changes to the facility's proposed TAC emissions, which were used to quantify the health impacts of the proposed modification.

Air Quality Table 10
Proposed Combined-Cycle Annual Toxic Air Contaminant Emissions

TAC	CAS	Pre-Modification Annual Emissions (tons/year)	Post-Modification Annual Emissions (tons/year)	Change (tons/year)
Ammonia	7664417	51.6	59.4	7.8
Acetaldehyde	75070	1.31	1.51	0.2
Acrolein	107028	0.027	0.031	0.004
Benzene	71432	0.024	0.028	0.004
1,3-Butadiene	106990	0.003	0.0037	0.0005
Ethylbenzene	100414	0.24	0.27	0.03
Formaldehyde	50000	2.69	3.09	0.4
Naphthalene	91203	0.010	0.011	0.001
PAHs	1151	0.007	0.008	0.001
Propylene Oxide	75569	0.22	0.25	0.03
Toluene	108883	0.97	1.12	0.15
Xylene	1330207	0.48	0.55	0.07

Source: AES 2022; based on AP-42, Section 3.1 emission factors and fuel use at the site's annual average temperature

SCAQMD Rule 1401 imposes limits on the maximum individual cancer risk, cancer burden, and non-cancer (acute and chronic) impacts from a permit modification. Rule 1401 limits maximum individual cancer risk (for both workers or residents) to 10 in one million, cancer burden to 0.5, and non-cancer hazard index increases to 1.0.

AES performed a health risk assessment to determine whether the increase in operating hours would comply with Rule 1401 limits. Because the proposed modification would not result in a change to hourly emissions, no acute non-cancer impacts were analyzed. Additionally, because there were no residential receptors with a cancer risk greater than 1 in one million, cancer burden was not calculated.

Air Quality Table 11 shows the results of the HRA and demonstrates that the project would be below the Rule 1401 health risk limits and not result in a significant impact on public health.

Air Quality Table 11
Proposed Facility Total Annual Emissions (tons/year)

Receptor Type	Cancer Risk (in one million)	Cancer Risk Threshold (in one million)	Chronic Hazard Index (unitless)	Chronic Hazard Index Threshold (unitless)
MEIR	0.86	10	0.00097	1
MEIW	0.02	10	0.00086	1

Source: SCAQMD 2023b

BACT/LAER ANALYSIS

The proposed changes would not increase the daily emission rate for the CCGTs. Per SCAQMD Regulation XIII, the proposed changes would not currently trigger a revised BACT/LAER analysis for the CCGTs. See the PM2.5 Federal New Source Review Program Section below for a discussion of PM2.5 NSR BACT requirements and the Prevention of Significant Deterioration Section for a discussion of PSD BACT requirements.

PM2.5 FEDERAL NEW SOURCE REVIEW PROGRAM

SCAQMD adopted Rule 1325 to incorporate U.S. EPA requirements for PM2.5 into SCAQMD rules and regulations. Rule 1325 establishes offset ratios, LAER compliance and control of PM2.5 precursors (NO_x, VOC, SO_x, and NH_3). On November 4, 2016, the SCAQMD amended Rule 1325 to establish appropriate major stationary source thresholds for direct PM2.5 and PM2.5 precursors. The SCAQMD lowered the major polluting facility threshold from 100 tons per year to 70 tons per year. Rule 1325 was amended again on January 4, 2019 to expand the definition of PM2.5 precursors to include VOC and NH_3. Source test results for PM2.5/PM10 are used to validate the emission factors used for Rule 1325 compliance.

The SCAQMD performed a full Rule 1325 analysis for the currently proposed modification. **Air Quality Table 12** summarizes the results of their Rule 1325 emissions calculations.

The SCAQMD determined that the HBEP is an existing major polluting facility for NO_x, VOC, and NH_3, but not for PM2.5 or SO_x. The proposed modification is not a major source in and of itself for PM2.5 or SO_x and the changes in VOC and NH_3 emissions, on a potential versus past actual basis, would be below the major source thresholds.

The project would result in NO_x emission changes above the major modification threshold, and would thus require the following:

- Use of Lowest Achievable Emission Rate (LAER) for NO_x Emissions
- NO_x offsets at the ratio required by RECLAIM Rule 2005

- Certification demonstrating that all major sources operated by the project owner in the State of California are in compliance with all applicable emission limits and standards under the Clean Air Act
- Alternatives analysis

Air Quality Table 12
Rule 1325 Change in PM2.5 and PM2.5 Precursor Emissions (Post-Modification Potential to Emit vs. Past Actual Emissions)

Pollutant	Post Modification PTE (tpy)	Past Actual Emissions (tpy)	Emissions Change (tpy)	Major Modification Threshold (tpy)	Proposed Modification Major (Y/N)
NOx	142.60	79.03	63.57	40	**Y**
PM2.5	64.94	50.72	14.22	70	N
SO_x	11.46	9.14	2.32	40	N
NH_3	110.05	93.59	16.46	40	N

Source: SCAQMD 2023, Appendix F

LAER represents the emission rate that meets the most stringent emission limit that is contained in a State Implementation Plan or that is achieved in practice. SCAQMD reviewed a BACT/LAER analysis for the combined cycle gas turbines that was performed as part of a permit modification in 2020. No other CCGTs have been permitted in South Coast AQMD's jurisdiction since the AES CCGTs were permitted. After review of the 2020 BACT/LAER analysis, South Coast AQMD determined that the CCGT's current NO_x limit of 2 ppm was the lowest limit currently permitted for similar CCGTs, and thus meets the BACT/LAER requirements of Rule 1325.

The facility would be required to hold a total of 33,600 lb NOx RECLAIM Trading Credits (RTCs) to offset the increase in NO_x emissions from the additional 1,000 hours of operation. The NO_x RTCs would be required to be held for at least one year and would need to be provided prior to the proposed modification.

SCAQMD also confirmed that a compliance certification was provided AES, on March 3, 2023.

AES provided an alternatives analysis outlining the critical need for additional dispatchable generation that the proposed modification would make available (SCAQMD 2023b).

IMPACTS ANALYSIS

Air dispersion models provide a means of predicting the location and ground level magnitude of the impacts of a new or modified emissions source. The model results are

generally described as maximum concentrations, often described as a unit of mass per volume of air, such as micrograms per cubic meter ($\mu g/m^3$).

The proposed change in operating hours only impacts annual emissions and would therefore not affect attainment of AAQS with an averaging time less than one year.

AES conducted air dispersion modeling using American Meteorological Society/Environmental Protection Agency Regulatory Model known as AERMOD to analyze potential ambient air quality impacts associated with the operation of HBEP. The U.S. EPA designates AERMOD as a "preferred" model for refined modeling in all types of terrain. AERMOD considers emissions in the context of various ambient meteorological conditions, local terrain and nearby structures that could affect air flow.

AES used AERMOD version 22112 to perform the modeling and followed the SCAQMD Modeling Guidance for AERMOD. The analysis includes the following:

- Use of meteorological data from the John Wayne meteorological station from 2012 through 2016 (SCAQMD confirmed this was the most representative meteorological data at the time of the application).
- Use of air quality monitoring data from the Central Orange County and I-5 Near Road monitoring station from 2018-2020 (SCAQMD confirmed this was the most representative air quality monitoring data at the time of the application).
- Receptor grids with appropriate locations and spacing meeting SCAQMD requirements.
- Use of ARM2 with the minimum and maximum NO_2/NOx U.S. EPA default values of 0.5 and 0.9 respectively.
- Use of URBAN dispersion options using the Orange County population of 3,010,232.

AES modeled the combined operations of the CCGTs and auxiliary boiler to determine the potential operational annual impact. For the CCGTs, AES modeled both CCGTs at 6,100 normal operating hours, 80 cold startups, 44 warm startups, 166 hot startups, and 250 shutdowns. For the auxiliary boiler, AES modeled operations at 30 percent of the maximum firing rate for 8,760 hours, including 24 cold startup, 48 warm startups and 48 hot startups.

The SCAQMD Engineering and Permitting (E&P) modeling staff reviewed the dispersion modeling analysis and health risk assessment results. E&P staff independently reproduced the modeling analysis to verify compliance with the SCAQMD rules and concluded that the modeling was conducted in accordance with SCAQMD guidance and recommendations.

Air quality impact analyses combine a project's modeled impact with background concentrations to determine the total impact of a project. Background or baseline

concentrations are determined from the measured values at the surrounding representative air monitoring sites. The applicant chose Station 19 – Saddleback Valley as the particulate matter (PM2.5/PM10) reference site and the highest of Station 17 – North Central Orange County and I-5 Near Road as the NO_2 reference site.

AES reviewed data from 2018 to 2020 to determine background values. At the time AES performed the modeling analysis, that was the most current data available. Staff reviewed the background monitoring data chosen by AES and agreed with the monitoring stations chosen. **Air Quality Table 13** includes annual background concentrations for NO2 from Station 17 and particulate matter concentrations from Station 19.

Air Quality Table 13
Annual Average Pollutant Concentrations, 2018-2020 (µg/m^3)

Pollutant	Station	2018	2019	2020
NO_2	17	**39.13**	36.16	35.43
PM10	19	**19.0**	16.7	16.8
PM2.5	19	8.31	7.11	**8.81**

Notes: Bold indicates the pollutant concentration used as the background concentration (highest in the three-year period).
Source: AES 2019, SCAQMD 2023a, Staff Analysis

Air Quality Table 14 summarizes the predicted maximum ground-level concentrations for NO_2, PM10, and PM2.5 from the proposed annual operations of HBEP. **Air Quality Table 14** includes the highest background values from the surrounding monitoring stations and compares the total impact to the limiting AAQS.

Air Quality Table 14
Proposed Total Project Operational Impacts (µg/m^3)

Pollutant	Averaging Period	Project Impact	Background	Total Concentration	Limiting Standard
NO_2	Annual	0.91	39.13	40.0	57[a]
PM10	Annual	0.698	19.0	19.7	20[b]
PM2.5	Annual	0.698	8.81	9.51	12[c]

[a] Annual CAAQS NO_2 standard (lowest of NAAQS and CAAQS)
[b] Annual CAAQS PM10 standard (no equivalent NAAQS)
[c] Represents both NAAQS and CAAQS
Source: SCAQMD 2023a, SCAQMD 2023b, AES 2022a

The modeling results in **Air Quality Table 14** indicate that the potential impacts from the proposed changes would not cause a significant impact for annual NO_2, PM10, or PM2.5. Therefore, the proposed project would not cause a violation nor make significantly worse an existing violation to any NAAQS or CAAQS.

SCAQMD has different compliance requirements for attainment and nonattainment pollutants. For projects in nonattainment areas, SCAQMD requires modeling to demonstrate that a project would not cause an exceedance of the significant change thresholds specified in Rule 1303. For projects located in attainment areas, SCAQMD requires a demonstration that the project emissions plus background concentrations would not potentially cause a violation to any AAQS. SCAQMD 1303 thresholds for PM10 and PM2.5 are both 1 $\mu g/m^3$. The modeling results in **Air Quality Table 14** demonstrate that the PM10 and PM2.5 impacts are below the SCAQMD significant change thresholds.

MITIGATION

The Final Commission Decision required mitigation for HBEP for all modes of operation. The required mitigation met the requirements under SCAQMD rules and regulations and CEC mitigation requirements.

The SCAQMD rules and regulations include provisions for utility boiler replacement projects when there is no increase in megawatt capacity. The provisions allow for the CCGT PM10 and VOC emission offsets to be secured from the SCAQMD internal offset accounts. The SCAQMD internal offset determination methodology considers potential emissions on a 30-day average and additional offset factors (1.0 for PM10 and 1.2 for VOCs). The 30-day average is the maximum monthly emissions divided by 30 days. There are no proposed changes to the 30-day averages or offset factors for PM10 or VOC. The SCAQMD internal offset program continues to meet CEC mitigation requirements.

SCAQMD requires a fee for the use of the internal offsets. The fee is calculated separately for each applicable pollutant based on attainment status, potential to emit, megawatt ratings, capacity, operating hours, and previous generation. AES opted to pay the initial fee under Rule 1304.1 in 2017. SCAQMD required fee payment upon issuance of the permits to construct. AES then opted to pay an annual fee once construction began in 2019. AES continued the annual fee option until 2021, when they switched to the single payment option and paid the single payment fee. However, Rule 1304.1 does not contain considerations for a facility that has paid the single payment fee but also has a future request to increase an allowable annual limit. SCAQMD and AES both agreed to require an additional fee based on the difference between the single payment fee for 6,640 turbine operating hours and the single payment fee for 7,640 turbine operating hours. SCAQMD opted to use current offset fee rates to calculate the fee for 6,640 turbine operating hours. **Air Quality Table 15** summarizes the total fees paid so far for compliance with Rule 1304.1 and the expected fee associated with the proposed modification.

Air Quality Table 15
Rule 1304.1 Electrical Generating Facility Fees for Use of Offset Exemption
Huntington Beach Energy Project (Offset Exemption for VOC and PM10)

Payment Date	Calculated Fee ($)	Amount Paid ($)	Notes
April 2017	2,479,174	2,479,174	Initial fee required upon Permit to Construct issuance.
October 2019	2,107,655	0	Amount paid minus initial fee (remaining $371,519 kept as credit).
October 2020	2,107,655	1,736,156	Amount paid is calculated fee minus 2019 credit.
October 2021	43,268,498	39,053,168	Facility opts for single payment fee. Amount paid reflects calculated fee minus amount paid to date.
New Fee	721,895	---	Additional fee calculated to reflect the difference between 6,640 annual turbine operating hours and the proposed 7,640 annual turbine operating hours.

Source: SCAQMD 2023, Appendix J

The facility's auxiliary boiler and oil/water separators were not eligible for offsets from the SCAQMD internal accounts. AES secured PM10 and VOC emission reduction credits (ERCs) on the open market to offset the auxiliary boiler and oil/water separators. The SCAQMD uses the 30-day average for offset determinations for non-exempt equipment. The auxiliary boiler 30-day average is based on the highest emissions from any month, including commissioning. The mitigation for the auxiliary boiler in the Final Commission Decision for VOC and PM10 in the form of ERCs met both SCAQMD and CEC requirements. There are no proposed changes to any of the operations of the auxiliary boiler or oil water separators.

CO is an attainment pollutant and is not a precursor to any nonattainment pollutant. During the original CEC licensing, AES provided modeling demonstrating the proposed project would not cause or contribute to violation of the CO AAQS. The CO AAQS are based on 1-hr and 8-hr averaging periods. There are no proposed changes that would impact shorter term operations. Therefore, offset requirements for CO continue to not be applicable for the facility.

AES is required to hold NOx RECLAIM Trading Credits (RTCs) to mitigate NOx emissions from the facility. The SCAQMD requires NOx RTCs to cover the first compliance year. The facility is not required to hold NOx RTCs for the subsequent years as the NOx PTE from the new equipment is less than the facility's initial allocation, and the facility is not considered "new". Maximum commissioning year emissions were used to determine the

first year RECLAIM requirements. Any post-commissioning modification resulting in increased annual NOx emissions would have required the purchase of NOx RTCs to cover the first year of operation post-modification. **Air Quality Table 16** includes the pre-modification and post-modification emissions used to calculate the required NOx RTCs.

Rule 2005 also requires the holding of SOx RTCs to cover annual SOx emissions greater than the starting allocation. Since the facility opted into SOx RECLAIM, there was no initial allocation for SOx and any increase is subject to the holding requirement for all years. **Air Quality Table 16** shows the SOx RTCs that the facility would need to hold to comply with Rule 2005.

Air Quality Table 16
Rule 2005 RTC Holding Requirements

Equipment	NOx	SOx
Total CCGTs Pre-Modification Emissions (lb/year)	251,600	19,920
Total CCGTs Post-Modification Emissions (lb/year)	285,200	22,920
RTC Holding Requirement	33,600[a]	22,920

[a] NOx RTCs are only required for the first compliance year
Source: SCAQMD 2023b, Appendix D

Existing conditions of certification would ensure the project stays in compliance with all RECLAIM requirements. AES is required to use non-resettable fuel meters to record fuel usage and NOx CEMS for the CCGTs and auxiliary boiler.

The proposed changes would result in an increase to the CCGT RECLAIM holdings. Staff recommends updating the RECLAIM requirements in **AQ-62** and **AQ-65** to the re-calculated RECLAIM holdings required in **Air Quality Table 16.**

PREVENTION OF SIGNIFICANT DETERIORATION

The Prevention of Significant Deterioration (PSD) program was established to prevent the deterioration of air quality in areas that are in attainment with the primary NAAQS. The South Coast Air Basin is in attainment for NO_2, SO_2, CO, and PM10.

PSD requirements apply to significant increases in emissions from a major stationary source or a major modification to a minor source, on a pollutant specific basis. Significant emission increases are defined as potential annual emission increases of 100 tons or more of CO, 40 tons or more of NOx or SOx, or 15 tons or more of PM10. **Air Quality Table 17** demonstrates that HBEP is over the significance threshold for CO and NOx.

Air Quality Table 17
Prevention of Significant Deterioration Applicability

Pollutant	Post Modification PTE (tpy)	Past Actual Emissions (tpy)	Emissions Change (tpy)	PSD Major Modification Threshold (tpy)	Proposed Modification Major (Y/N)
NO_x	142.6	79.0	63.6	40	**Y**
CO	204.4	15.4	189.0	100	**Y**
PM10	64.9	50.7	14.2	15	N
SO_x	11.5	9.1	2.3	40	N

Source: SCAQMD 2023, Appendix F

Therefore, NOx and CO are subject to PSD review for all PSD requirements. BACT is required for any pollutant for which there will be a net emissions increase, therefore BACT is also required for PM10 and SO_2, in addition to NO_x and CO.

The requirements for a significant emission increase under Rule 1703 are the following:

- Use of BACT
- Modeling to determine impacts of the project on National and State ambient air quality standards and increases over the baseline concentration
- Analysis of ambient air quality in the impact area
- Analysis of project impacts on visibility, soil, and vegetation
- Compliance certification
- Public notice

SCAQMD performed a top-down BACT analysis for all PSD pollutants and determined that the CCGTs meet BACT. The results of the BACT analysis and comparison to the control levels of the CCGTs, as presently permitted, is shown below in **Air Quality Table 18**.

Air Quality Table 18
PSD BACT Analysis

	NO_x	CO	VOC	PM10	SO_x	NH_3
HBEP CCGT Control Levels	2.0 ppmvd @15% O2, 1 hour average	1.5 ppmvd @15% O2, 1 hour average	2.0 ppmvd @15% O2, 1 hour average	Exclusive use of natural gas fuel, PM10 emissions of 8.5 lbs/hr	Exclusive use of natural gas fuel[a]	5.0 ppmvd @15% O2, 1 hour average
CCGT BACT	2.0 ppmvd @ 15% O2, 1 hour average	1.5 ppmvd @ 15% O2, 1 hour average	2.0 ppmvd @ 15% O2, 1 hour average	Natural gas fuel	Natural gas fuel with fuel sulfur content of no more than 1 grain/100 scf (about 16 ppm)	5.0 ppmvd @15% O2, 1 hour average
Meets BACT?	Yes	Yes	Yes	Yes	Yes	Yes

[a] Natural gas provided by utility is limited to 16 ppm in the South Coast by Rule 431.1. Generally, the actual sulfur content is about 4 ppm (4 ppm corresponds to 0.25 gr/100 scf)
Source: SCAQMD 2023b

Air Quality Table 19 summarizes the maximum predicted impact on Annual NAAQS and CAAQS. **Air Quality Table 19** demonstrates that proposed modification would not potentially cause a violation to any AAQS.

Air Quality Table 19
Maximum Predicted Impact on Annual NAAQS/CAAQS (µg/m³)

Pollutant	Project Impact (µg/m³)	Background Concentration (µg/m³)	Total Concentration (µg/m³)	CAAQS (µg/m³)	NAAQS (µg/m³)	Exceeds AAQS?
NO_2	0.91	39.13	40.0	57	100	No
PM10	0.698	19.0	19.7	20	No Standard	No

Source: SCAQMD 2023b

AES also provided modeling to demonstrate that the expected facility-wide annual impacts for NO_2 and PM10 would remain below the Class II significant impact levels (SILs) and Class I SILs at a distance of 50 kilometers.

Air Quality Table 20 summarizes the results of the Class II SIL analysis for annual NO_2 and PM10. The predicted maximum impacts for annual NO_2 and PM10 are less than their respective Class II SILs. Therefore, the annual impacts for NO_2 and PM10 are considered less than significant, and no further Class II analysis is required. **Air Quality Table 20** includes the PSD Class II increment standard comparison for informational purposes. The annual impacts for NO_2 and PM10 are considered less than the PSD Class II increment standard.

Air Quality Table 20
Maximum Modeled SILs
Compared to Class II SILs and PSD Increment Standards, (µg/m³)

Pollutant	Averaging Period	Project Impact (mg/m³)	Class II SIL (mg/m³)	Significant?	PSD Class II Increment Standard (mg/m³)	Exceed Class II Increment?
NO_2	Annual	0.91	1.0	No	25	No
PM10	Annual	0.7	1.0	No	17	No

Source: SCAQMD 2023b

A Class I area impact analysis is required to demonstrate that the modified HBEP would not adversely affect the air quality related values or contribute to an exceedance for either the Class I SILs or PSD Class I increments standards. **Air Quality Table 21** summarizes the results of the Class I SIL analysis for annual NO_2 and PM10. The predicted maximum impacts for annual NO_2 and PM10 are less than their respective Class I SILs. Therefore, the annual impacts for NO_2 and PM10 are considered less than significant, and no further Class I analysis is required.

Air Quality Table 21
Maximum Modeled SILs Compared to Class I SILs (µg/m³)

Pollutant	Averaging Period	Project Impact (mg/m³)	Class I SIL (mg/m³)	Significant?	PSD Class II Increment Standard (mg/m³)	Exceeds Class II Increment?
NO_2	Annual	0.0093	0.1	No	2.5	No
PM10	Annual	0.0048	0.2	No	1.0	No

Source: SCAQMD 2020

SCAQMD PSD regulations require the evaluation of other impacts on growth, soil and vegetation, and visibility impairment. A screening assessment procedure outlined in the Federal Land Managers' Air Quality Working Group (FLAG) 2010 Report, allows for the application of the Q/D test (NPS 2010) to determine if a full visibility and deposition analysis for Class I areas would be required. The test states that a source located more than 50 km from a Class I area is considered to have negligible impacts if its total SO_2, NOx, PM10, and H_2SO_4 emissions (in tons per year), divided by the distance (in km) from the Class I area, is 10 or less (i.e. $Q/D \leq 10$).

The project's sum of annual NOx, SO_2, sulfuric acid (H_2SO_4), and PM10 emissions is estimated to be 221 tpy and the project's distance to the nearest Class I area (the Cucamonga and San Gabriel Wilderness Areas) would be 69 km. The Q/D for the project would be 3.2, therefore, a full visibility and deposition analysis for Class I areas would not be required.

As stated in the PM2.5 NSR discussion section above, AES provided SCAQMD staff with a certification of compliance on March 3, 2023.

Section 1703(a)(3)(F) of Rule 1703 requires that a copy of the application be provided to the U.S. EPA, the Federal Land Manager for any Class I area located within 100 km of the source, and to the federal official charged with direct responsibility for management of any lands within the Class I area. A copy of the preliminary decision, the analysis, and notice of any action taken must also be provided to same agencies.

Three mandatory Federal Class I areas are located within 100 km of the facility: Cucamonga Wilderness, San Gabriel Wilderness, and Agua Tibia Wilderness. SCAQMD provided a copy of the application to the manager of the areas, the US Forest Service, on November 30, 2022.

SCAQMD is also required to distribute a newspaper notification and have the applicant distribute a notice to addresses within a ¼-mile radius of the facility. As part of Rule 3006 and 40 CFR Part 70 noticing requirements, SCAQMD will also distribute a notice to the EPA and other affected agencies as well.

GHGs are a regulated pollutant under the SCAQMD PSD major source permitting program. The PSD GHG evaluation is included below.

GREENHOUSE GAS ANALYSIS

The proposed changes to the annual operating hours for the CCGTs would result in changes to the calculated project GHG emissions. The PSD analysis discussing the impacts of the increase in GHG emissions is presented in the following section.

Prevention of Significant Deterioration for Greenhouse Gases

Air Quality Table 22 shows the increase estimated project GHG emissions due to the increase in annual CCGT operational hours. The post-modification emissions are compared with the past actual emissions reported by the facility in 2021 to determine the emissions change for project. The calculated emissions change would be considered a significant increase under PSD.

Air Quality Table 22
PSD Greenhouse Gas Emissions Change

Post-Modification CO_2e Emissions	Actual CO_2e Emissions[a]	Emissions Change	PSD Significant Increase Threshold	Significant Increase?
tons/year				Y
2,011,109	1,546,497	**464,612**	75,000	

[a] Based on 2021 actual emissions, as the facility operated as a merchant plant in 2020. The facility began operating as a "Power Purchase Tolling Option" in 2021, and its operation under this power purchase agreement is more representative of the facility's operational profile going forward
Source: SCAQMD 2023b

Because the proposed modification would result in a significant GHG emissions increase, the project would be subject to requirements specified under SCAQMD Rule 1703, which includes BACT, air quality modeling, ambient air quality analysis, and other additional impact analyses for significant emission changes under PSD. However, because there are currently no ambient air quality standards or PSD increments established for GHGs, the modeling requirement would not apply for GHGs. Additionally, 40 CFR Sections 52.21(i)(5)(iii) and 51.166(i)(5)(iii) exempt facilities from monitoring for GHGs. The U.S. EPA also currently does not require a GHG impacts analysis for nearby Class I areas.

SCAQMD staff performed a PSD BACT analysis for GHGs. AES declined to provide updates to their GHG BACT analysis and stated that the conclusions of the analysis performed for the initial permits remain valid. That analysis concluded that thermal efficiency is the only technically and economically feasible alternative for CO_2/GHG emissions control. The current design proposed for the HBEP continues to meet the BACT requirement for GHG emission reductions.

Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units

On August 3, 2015, the U.S. EPA promulgated New Source Performance Standards Subpart TTTT-Standards of Performance for Greenhouse Gas Emissions for Electrical Generating Units (Title 40, Code of Federal Regulations, Part 60.5508) (Subpart TTTT). The notice was published in the Federal Register on October 23, 2015, and had an immediate effective date. Subpart TTTT-Standards of Performance for Greenhouse Gas Emissions for Electrical Generating Units sets standards to limit emissions of CO_2 from new, modified, and reconstructed power plants. Subpart TTTT- requirements are set under the authority of the Clean Air Act section 111(b) and are applicable to new fossil fuel-fired power plants commencing construction after January 8, 2014. The HBEP CCGTS are subject to Subpart TTTT requirements.

Subpart TTTT has different requirements based on whether the emission unit is considered base load. According to Subpart TTTT, base load rating is defined as maximum amount of heat input that an electrical generating unit (EGU) can combust on a steady state basis at ISO conditions. Each EGU is subject to the standard if it burns more than 90% natural gas on a 12-month rolling basis and if the EGU supplies more than the design efficiency times the potential electric output as net-electric sales on a 3-year rolling average basis. An affected EGU supplying equal to or less than the design efficiency times the potential electric output as net electric sales on a 3-year rolling average basis is considered a non-base load unit and is subject to a heat input limit of 120 lbs CO_2/MMBtu. Each affected 'base load' EGU is subject to the gross energy output standard of 1,000 lbs of CO_2/MWh unless the Administrator approves the EGU being subject to a net energy output standard of 1,030 lbs CO_2/MWh.

During the licensing period, AES indicated the design efficiency of HBEP's CCGTs would be 56 percent based on a lower heating value basis (AES 2015). If the CCGT block operates above the design efficiency of 56 percent (or 50 percent, whichever is less), the 1,000 lb CO2/MWh-gross standard is applicable. Since 56 percent is greater than 50 percent, a design efficiency of 50 percent was used, with the assumption of full power output over 8,760 hours in a year, to determine that if a CCGT supplies greater than 1,519,500 MWh-net electrical output to a utility distribution system on both a 12-operating-month and a 3-year rolling average basis, then the 1,000 lb CO2/MWh-gross standard is applicable. If a CCGT supplies less than that, the CCGT is subject to the 120 lbs CO2/MMBtu limit.

AES submitted a revised heat rate and electrical production profile for the HBEP reflecting the proposed change in annual operating hours. The thermal efficiency calculations were updated assuming that the additional 1,000 hours of annual operation would occur under the worst-case assumption that they would occur only in the 1 on 1 configuration. The revised CCGT profile therefore assumes 2,200 hours of operation in a 1 on 1 configuration and 4,900 hours of operation in a 2 on 1 configuration. SCAQMD calculated the revised GHG efficiency under these conditions as 951.8 lb CO2/MWh-HHV-net (with 8 percent degradation). SCAQMD included a permit condition requiring that the CCGTs meet this GHG efficiency, and Staff recommends amending **AQ-56** to incorporate this revision into the facility's COCs.

SCAQMD Rule 1714 establishes preconstruction review requirements for GHGs. A PSD permit pursuant to Rule 1714 is required prior to construction of a new source or a major modification of an existing major source. The proposed changes to the operation schedule trigger a PSD review for NOx and PM10 and result in a GHG emission increase. Therefore, SCAQMD concluded a GHG PSD review is also required. The SCAQMD performed a PSD BACT analysis for GHGs. AES declined to provide updates to their GHG BACT analysis and stated that the conclusions of the analysis performed for the initial permits remain valid. That analysis concluded that thermal efficiency is the only technically and economically feasible alternative for CO_2/GHG emissions control. The

current design proposed for the HBEP continues to meet the BACT requirement for GHG emission reductions. The HBEP conditions of certification include GHG emission limits.

Greenhouse gas emissions would also continue to be mitigated through CARB's cap-and-trade program. The proposed modification is therefore expected to have a less than significant impact on the environment due to greenhouse gas emissions.

CONCLUSIONS

Air quality impacts from increasing the annual hours of operation for the CCGTs are considered less than significant with the adoption of the recommended mitigation.

The proposed project changes would result in an increase to the CCGT annual potential emissions of nitrogen oxides, carbon monoxide, volatile organic compounds, particulate matter less than 10 and 2.5 microns in size, and sulfur oxides. In addition, the proposed changes potentially increase the amount of natural gas combusted by the project equipment.

The proposed changes were analyzed for consistency with all LORS including the SCAQMD and federal new source review regulations. An impact analysis was performed to assess the proposed emission increases and their impact. The modeling results indicate potential impacts from the proposed changes would not cause a significant impact on ambient air quality or public health.

AES would be required to hold additional Regional Clean Air Incentives Market Trading Credits to mitigate the increase in emissions of nitrogen oxides and sulfur oxides. AES is currently in compliance with all SCAQMD requirements for the use of the SCAQMD internal offset account to offset the CCGT emissions of volatile organic compounds and particulate matter less than 10 microns. The SCAQMD internal offset program continues to meet CEC mitigation requirements for the proposed annual emission increases. The HBEP would continue to meet all greenhouse gas emissions performance standards and the proposed modification would not result in greenhouse gas emissions that would have a significant impact on the environment. The proposed updates to the conditions of certification would ensure compliance with all LORS.

With the adoption of the proposed mitigation, all proposed changes would conform with the applicable LORS related to air quality and would not result in significant air quality or public health impacts to any environmental population including minority or low-income populations. The requested changes have already been analyzed by SCAQMD staff and are incorporated into the SCAQMD issued 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 23** includes a summary of the proposed modifications and justification.

Air Quality Table 23
Air Quality Conditions of Certification (COCs)
with Proposed Modifications and Justification

SCAQMD Permit Conditions	Energy Commission Condition of Certification	Proposed Modification and Justification
Facility Conditions		
F2.1	**AQ-1**	Change of facility PM2.5 annual limit from 100 tpy to 70 tpy to reflect the major source threshold limit change to SCAQMD Rule 1325.
Combined-Cycle Gas Turbine Generators		
C1.9	**AQ-26**	Change of permitted CCGT annual operating hours from 6,640 hours per year to 7,640 hours per year, as petitioned by the applicant and clarifying grammatical change.
D29.6	**AQ-45**	Incorporates the more stringent ammonia testing requirement present in the Title V permit.
E193.6	**AQ-56**	Change of annual CO_2 mass emission and emissions per net-MWh limits to reflect new annual operating hour limit.
Administrative		
I297.1 and I297.4	**AQ-62**	Incorporation of the NO_x RTC holding requirement for the first year of operation following the modification (33,600 pounds for the CCGT power block)
I298.1 and I298.4	**AQ-65**	Incorporation of the SO_x RTC holding requirement for the first and subsequent years of operation following the modification (22,920 pounds for the CCGT power block)

AQ-1 The project owner shall limit emissions from this facility as follows:

CONTAMINANT	EMISSIONS LIMIT
PM2.5	Less than ~~100~~ **70** TONS IN ANY ONE YEAR

For purposes of demonstrating compliance with the 100 tons per year limit, the project owner shall sum the PM2.5 emissions for each of the sources at this facility by calculating a 12-month rolling average as follows:

Using the calendar monthly fuel use data and following emission factors for each combined-cycle turbine PM2.5 = 3.94 lbs/mmcf., for each simple-cycle turbine PM2.5 = 7.43 lbs/mmcf, for the auxiliary boiler PM2.5 = 7.54 lbs/mmcf, for Boiler 1 PM2.5 = 1.86 lbs/mmcf, for Boiler 2 PM2.5 = 2.1 lbs/mmcf. For each emergency engine using the rated hp and the calendar monthly hourly usage data and the following emission factor PM2.5 = 0.38 gr/bhp-hr.

The project owner may apply to change the factors, via permit application, once a different value is demonstrated, subject to SCAQMD review of testing procedures and protocols.

The project owner shall submit written reports of the monthly PM2.5 compliance demonstrations required by this condition. The report submittal shall be included with the semi-annual Title V report as required under Rule 3004(a)(4)(f). Records of the monthly PM2.5 compliance demonstrations shall be maintained on site for at least five years and made available upon SCAQMD request.

Verification: The project owner shall submit to the CPM and the District the facility annual operating and emissions data demonstrating compliance with this condition as part of the fourth quarter's Quarterly Operation Report (**AQ-SC8**).

AQ-26 The project owner shall limit the operating time to no more than ~~6640~~ **7640** hour(s) in any one calendar year.

The limit includes baseload operation as well as startups and shutdowns. The limit does not apply to the calendar year in which the units are commissioned.

Combined-Cycle Turbines No. 1 and No. 2 shall not simultaneously operate **(approximately 44 percent of full load rating)** at minimum load for more than 20 consecutive hours ~~(approximately 44 percent of full load rating)~~.

The project owner shall maintain records, in a manner approved by the SCAQMD to demonstrate compliance with this condition.

The combined-cycle turbines are subject to this condition.

Verification: The project owner shall provide a table demonstrating compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

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

AQ-45 The project owner shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NH_3 emissions	District Method 207.1 and 5.3 or EPA Method 17	1 hour	Outlet of the SCR serving this equipment

The test shall be conducted and the results submitted to the District within 60 days after the test date. The SCAQMD shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted at least quarterly during the first twelve months of operation and at least annually thereafter. **If the results of any calendar year test show non-compliance with the limit, then quarterly tests must be conducted and at least 4 consecutive tests must show compliance with the limit before calendar year testing can resume.**

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

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

The combined-cycle turbines, the simple-cycle turbines, and the auxiliary boiler are subject to this condition.

Verification: The project owner shall submit the proposed protocol for the source tests no later than 45 days prior to the proposed source test date to both the District and CPM for approval.

The project owner shall notify the District and CPM no later than 10 days prior to the proposed source test date and time.

The project owner shall submit source test results no later than 60 days following the source test date to both the District and CPM.

AQ-56 The project owner shall, upon completion of construction, operate and maintain this equipment according to the following specifications:

The project owner shall record the total net power generated in a calendar month in megawatt-hours.

The project owner shall calculate and record greenhouse gas emissions for each calendar month using the following formula:

CO2 = 60.009 * FF

Where, CO2 is in tons and FF is the monthly fuel usage in millions standard cubic feet.

The project owner shall calculate and record the CO2 emissions in pounds per net megawatt-hour on a 12-month rolling average. The CO2 emissions from this equipment shall not exceed ~~873,035~~ **1,004,516** tons per year per turbine on a 12-month rolling average basis. The calendar annual average CO2 emissions shall not exceed ~~967.6~~ **951.8** pounds per net MW-hour.

The project owner shall maintain records in a manner approved by the SCAQMD to demonstrate compliance with this condition. The records shall be made available to SCAQMD upon request.

The combined-cycle turbines are subject to this condition.

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

AQ-62 This equipment shall not be operated unless the facility holds ~~156,093~~ **33,600** pounds of NOx RTCs in its allocation account to offset the annual emissions increase for the first year of operation. RTCs held to satisfy this condition may be transferred only after one year from the initial start of operation. If the hold amount is partially satisfied by holding RTCs that expire midway through the hold period, those RTCs may be transferred upon their respective expiration dates. This hold amount is in addition to any other amount of RTCs required to be held under other condition(s) stated in this permit.

The combined-cycle turbines are subject to this condition.

Verification: The project owner shall submit to the CPM copies of all RECLAIM reports filed with the District as part of Quarterly Operation Reports (**AQ-SC8**).

AQ-65 This equipment shall not be operated unless the facility holds ~~14,803~~ **22,920** pounds of SOx RTCs in its allocation account to offset the annual

emissions increase for the first year of operation. The RTCs held to satisfy the first year of operation portion of this condition may be transferred only after one year from the initial start of operation. In addition, this equipment shall not be operated unless the project owner demonstrates to the Executive Officer that, at the commencement of each compliance year after the start of operation, the facility holds ~~9,960~~ **22,920** pounds of SOx RTCs valid during that compliance year. RTCs held to satisfy the compliance year portion of this condition may be transferred only after the compliance year for which the RTCs are held. If the initial or annual hold amount is partially satisfied by holding RTCs that expire midway through the hold period, those RTCs may be transferred upon their respective expiration dates. This hold amount is in addition to any other amount of RTCs required to be held under other condition(s) stated in this permit.

The combined-cycle turbines are subject to this condition.

Verification: The project owner shall submit to the CPM copies of all RECLAIM reports filed with the District as part of Quarterly Operation Reports (**AQ-SC8**).

REFERENCES

AES 2015 – AES Huntington Beach Energy, LLC. (TN 206087) Petition to Amend Huntington Beach Energy Project, dated September 2015.

AES 2022 – AES Huntington Beach Energy, LLC. (TN 243008) Petition to Amend for Increase to CCGT Operating Hours, dated May 11, 2022.

CARB 2023a - California Air Resources Board (CARB). Maps of State and Federal Area Designations. Accessed January 2023. Available online at: http://www.arb.ca.gov/desig/adm/adm.htm

CEC 2017 – California Energy Commission (CEC). (TN 217788) Huntington Beach Energy Project (12-AFC-02C) Revised Final Decision, dated May 31, 2017. Available online at: https://efiling.energy.ca.gov/GetDocument.aspx?tn=217788&DocumentContentId=5901

NPS 2010 – National Park Service (NPS), Federal Land Managers' Air Quality Related Values Work Group (FLAG) Phase I Report—Revised (2010), dated October 7, 2010.

SWRCB 2020 – State Water Resources Control Board (SWRCB), Notice of Decision - Amendment to the Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling, dated December 22, 2020. Available online at: https://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/docs/nod.pdf

SCAQMD 2018 – South Coast Air Quality Management District (SCAQMD), NAAQS/CAAQS and Attainment Status for South Coast Air Basin, dated September 2018. Available online at: https://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf?sfvrsn=14

SCAQMD 2023a – South Coast Air Quality Management District (SCAQMD), Historical Data by Year, accessed February 2023. Available online at: https://www.aqmd.gov/home/air-quality/historical-air-quality-data/historical-data-by-year

SCAQMD 2023b – South Coast Air Quality Management District (SCAQMD), Preliminary Statement of Basis, Proposed Significant Permit Revision for AES Huntington Beach, dated March 7, 2023 Available online at: https://www.aqmd.gov/home/air-quality/historical-air-quality-data/historical-data-by-year

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U.S. EPA 2023b – United States Environmental Protection Agency (U.S. EPA). The Green Book Nonattainment Areas for Criteria Pollutants. Accessed January 2023. Available online at: https://www.epa.gov/green-book