

**DOCKETED**

<b>Docket Number:</b>	12-AFC-02C
<b>Project Title:</b>	Huntington Beach Energy Project - Compliance
<b>TN #:</b>	238710
<b>Document Title:</b>	Staff Analysis of Amendment Proposal to Modify Air Quality Conditions
<b>Description:</b>	N/A
<b>Filer:</b>	Marichka Haws
<b>Organization:</b>	California Energy Commission
<b>Submitter Role:</b>	Commission Staff
<b>Submission Date:</b>	7/7/2021 9:44:15 AM
<b>Docketed Date:</b>	7/7/2021

## CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET  
SACRAMENTO, CA 95814-5512  
www.energy.ca.gov



**DATE:** July 2021

**TO:** Interested Parties

**FROM:** Joseph Douglas, Compliance Project Manager

**SUBJECT: HUNTINGTON BEACH ENERGY PROJECT (12-AFC-2C)  
Staff Analysis of Amendment Proposal to Modify Air Quality  
Conditions**

On June 17, 2020, AES Huntington Beach Energy, LLC, filed a petition to amend with the California Energy Commission (CEC) requesting to modify the Air Quality Conditions of Certification for the Huntington Beach Energy Project (HBEP) by increasing the non-cold start-up nitrogen oxide (NOx) limit.

The HBEP is an 844-megawatt (MW), natural gas-fired, combined-cycled, and simple cycle gas turbine electric generating facility that was certified by the CEC on May 31, 2017. The 644 MW combined cycle gas turbine generator began operation on June 25, 2020. The facility is located at 21730 Newland Street, Huntington Beach.

CEC staff has reviewed the petition pursuant to Title 20, California Code of Regulations, section 1769 (Post Certification Amendments and Changes) and has concluded that the modifications to the Air Quality Conditions of Certification would not result in a significant impact on the environment, or cause the project to not comply with applicable laws, ordinances, regulations, and standards. Staff intends to recommend approval of the petition at the August 11, 2021 Business Meeting of the CEC.

The CEC's webpage for this facility, [https://ww2.energy.ca.gov/sitingcases/huntington\\_beach\\_energy/](https://ww2.energy.ca.gov/sitingcases/huntington_beach_energy/), 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 "Documents for this Proceeding (Docket Log)" 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 parcels within 1,000 feet of the facility site. It has also been e-mailed to the Siting listserv. The listserv is an automated CEC e-mail system by which information about this facility is e-mailed to parties who have subscribed. To subscribe, go to the CEC's webpage for this facility, 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 comment on the analysis are asked to submit their comments by **August 6, 2021**. To use the CEC's electronic commenting feature, go to the CEC's webpage for this facility, cited above, click on the "Submit e-Comment" link, and follow the instructions in the on-line form. Be sure to include the facility name in your comments. Once submitted, you will receive an e-mail with a link to them.

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

California CEC  
Docket Unit, MS-4  
Docket No. **12-AFC-2C**  
1516 Ninth Street  
Sacramento, CA 95814-5512

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 webpage for the facility.

If you have questions about this notice, please contact Joseph Douglas, Compliance Project Manager, at (925) 956-9527, or by fax to (916) 654-3882, or via e-mail at [Joseph.Douglas@energy.ca.gov](mailto:Joseph.Douglas@energy.ca.gov).

For information on participating in the CEC's review of the petition, call the CEC Public Advisor, at (916) 654-4489 or (800) 822-6228 (toll-free in California) or send your e-mail to [Publicadvisor@energy.ca.gov](mailto:Publicadvisor@energy.ca.gov).

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

Mail List: 7437

Listserv: Huntington Beach Energy Project

**HUNTINGTON BEACH ENERGY PROJECT (12-AFC-2C)**  
**Petition to Amend Commission Decision**  
**EXECUTIVE SUMMARY**

Joseph Douglas

**INTRODUCTION**

---

On November 6, 2020, AES Huntington Beach Energy, LLC, filed a petition to amend with the California Energy Commission (CEC) requesting to modify the Air Quality Conditions of Certification in the Final Commission Decision for the Huntington Beach Energy Project (HBEP) by increasing the non-cold start-up nitrogen oxide (NOx) limit for two General Electric 7FA combined cycle gas turbines.

The purpose of the CEC’s review process is to assess whether the proposed 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). Staff has completed its independent review of all materials received from the project owner.

**PROJECT LOCATION AND DESCRIPTION**

---

The HBEP is an 844-megawatt (MW), natural gas-fired, combined-cycled, and simple cycle gas turbine electric generating facility that was certified by the CEC on May 31, 2017. The 644 MW combined cycle gas turbine generator began operation on June 25, 2020. The facility is located at 21730 Newland Street, Huntington Beach.

**DESCRIPTION OF PROPOSED CHANGES**

The changes to the design and operation of the project proposed in the petition include the following:

- Increase the non-cold start-up NOx limit as described in the South Coast Air Quality Management District’s (“SCAQMD”) revised Title V Facility Permit.
- A change of the startup definition.
- An extension of the retirement date for Boiler No. 2.
- New carbon monoxide (CO) emission factors added for combined cycle gas turbines to be used prior to Continuous Emissions Monitoring System (CEMS) certification.

**NECESSITY FOR THE PROPOSED CHANGES**

---

Because the project owner cannot control the time it takes for synchronization to the electrical grid, it is necessary to select a limit based on the maximum emissions

associated with non-cold start events that would be reasonably expected to occur. Therefore, the Title V Permit revises the existing NOx emission limit of 17 pounds per none-cold start up event to 32 pounds per event, which still represents a lower emission rate than equivalent combined-cycle gas turbines (CCGTs).

## STAFF’S ASSESSMENT OF THE PROPOSED CHANGES

CEC technical staff reviewed the proposed changes to the project for potential environmental effects and consistency with applicable LORS. Staff has determined that only the technical area of Air Quality is affected by the proposed project changes. A summary of staff’s conclusions reached in each technical area are summarized in **Executive Summary Table 1**.

For **Air Quality**, staff has proposed new and revised conditions of certification to ensure compliance with LORS and/or to reduce potential environmental impacts to a less than significant level. The details of the proposed changes to conditions of certification can be found under the **Air Quality** section in this staff analysis.

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

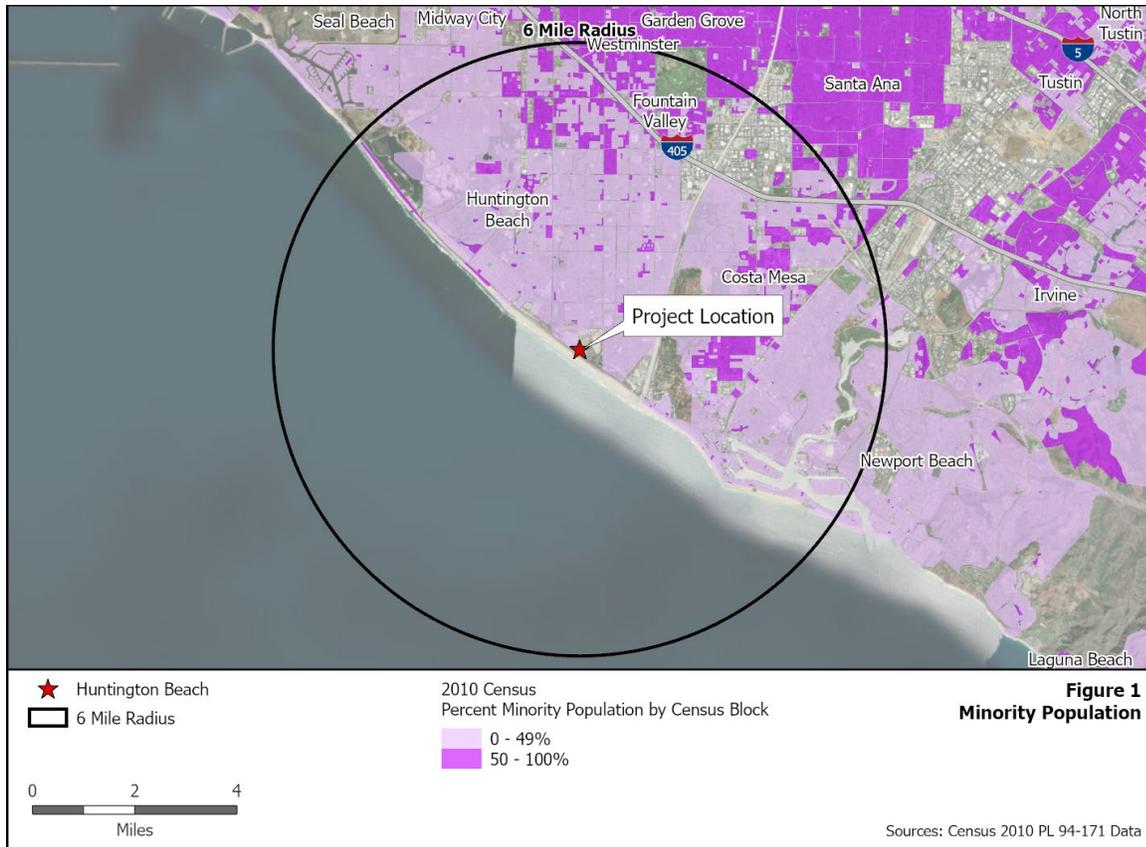
Technical Areas Reviewed	Technical Area Not Affected	CEQA			Conforms with applicable LORS	Revised or New Conditions of Certification requested or recommended
		Potentially significant impact	Less than significant impact with mitigation	Less than significant impact		
Air Quality				X	X	X
Biological Resources	X					
Cultural Resources	X					
Facility Design	X					
Geological and Paleontological Resources	X					
Hazardous Materials Management	X					
Land Use	X					
Noise and Vibration	X					
Paleontological Resources	X					
Public Health	X					
Socioeconomics	X					
Soil and Water Resources	X					

Traffic and Transportation	X					
Transmission Line Safety and Nuisance	X					
Transmission System Engineering	X					
Visual Resources	X					
Waste Management	X					
Worker Safety and Fire Protection	X					

## ENVIRONMENTAL JUSTICE

---

**Environmental Justice – Figure 1** shows 2010 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 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 is larger than those in the reference geography, and thus are considered an EJ population based on low income as defined in *Guidance on Considering Environmental Justice During the Development of Regulatory Actions*. **Environmental Justice – Figure 2** shows where the boundaries of the school district are in relation to the six-mile radius around the Huntington Beach Energy Project site.

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

<b>SCHOOL DISTRICT IN SIX-MILE RADIUS</b>	<b>Enrollment Used for Meals</b>	<b>Free or Reduced Price Meals</b>	
Fountain Valley Elementary	6,320	1,523	24.1%
Huntington Beach City Elementary	6,742	1,327	19.7%
Newport-Mesa Unified	20,173	8,179	40.5%
Ocean View Elementary	7,721	4,169	54.0%
<b>REFERENCE GEOGRAPHY</b>			
Orange County	473,620	231,160	48.8%
Source: CDE 2020. California Department of Education, DataQuest, Free or Reduced Price Meals, District level data for the year 2019-2020, < <a href="http://dq.cde.ca.gov/dataquest/">http://dq.cde.ca.gov/dataquest/</a> >.			

## ENVIRONMENTAL JUSTICE CONCLUSIONS

Air quality is the only technical area affected by the proposed project change. Staff concludes that the air quality impacts would be less than significant, and thus would be less than significant on the EJ population represented in **Environmental Justice – Figure 1, Figure 2, and Table 1.**



## STAFF RECOMMENDATIONS AND CONCLUSIONS

Staff recommends approval of the petition and concludes that with the adoption of the revised conditions of certification, the amended HBEP would not result in significant adverse air quality related impacts. HBEP would continue to comply with all applicable conditions of certification and federal, state, and SCAQMD LORS.

**STAFF ANALYSIS**  
**HUNTINGTON BEACH ENERGY PROJECT (12-AFC-02C)**  
**Petition to Amend – Title V Permit Modifications**  
**AIR QUALITY**

Tao Jiang, Ph.D., P.E.

## **SUMMARY AND CONCLUSIONS**

---

In this Petition to Amend (PTA) for the Huntington Beach Energy Project (HBEP), AES Huntington Beach Energy, LLC (the petitioner) proposes to revise several air quality conditions of certification to incorporate recent Title V permit modifications (AES 2020a).

The proposed increase to non-cold startup nitrogen oxide (NO<sub>x</sub>) emission limit would result in an increase of potential annual facility NO<sub>x</sub> emissions. However, the proposed higher non-cold startup NO<sub>x</sub> emission limit is not used in the worst case hourly or daily emission calculations, and therefore would not cause greater worst case project impacts. AES would be required to hold additional NO<sub>x</sub> RECLAIM Trading Credits (RTC) to mitigate the emission increase.

The petition also proposes the change of the start-up definition and the extension of the retirement date for Boiler No. 2. In addition, new carbon monoxide (CO) emission factors are also added for combined cycle gas turbines to be used prior to Continuous Emissions Monitoring System (CEMS) certification.

Staff concludes that with the adoption of the attached revised conditions of certification, the amended HBEP would not result in significant adverse air quality related impacts. HBEP would continue to comply with all applicable conditions of certification and federal, state, and South Coast Air Quality Management District (SCAQMD or the District) laws, ordinances, regulations, and standards (LORS).

## **BACKGROUND**

---

The current HBEP was certified by the California Energy Commission (CEC) on May 31, 2017 and began construction on June 2, 2017. HBEP began operating on June 25, 2020 (AES 2020b). It is a nominal 844-megawatt, natural gas-fired, combined-cycle replacement power plant located at 21730 Newland Street, Huntington Beach, the site of the existing AES Huntington Beach Generating Station. On June 17, 2020, AES Huntington Beach Energy, LLC filed a Petition (AES 2020) with the CEC requesting to incorporate multiple Title V permit modifications to the existing HBEP Final Commission Decision.

The proposed modification does not include any new sources of emissions nor modifications to the existing sources of emissions other than non-cold startup NO<sub>x</sub> emissions. The requested changes are minor revisions to the conditions of certification, including:

- An increase of NOx emission limit for non-cold startup and NOx RECLAIM Trading Credits (RTC) holding amount.
- The definition of start up.
- The potential extension of the retirement date for Boiler No. 2.
- Adding CO emission factors to be used prior to CEMS certification.

The HBEP is a major source and requires a Title V operating permit. The SCAQMD evaluated the requested changes and issued the revised Title V permit on April 21, 2020 (SCAQMD 2020).

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

---

HBEP is subject to all the LORS described in the CEC decision for HBEP (CEC 2017). The applicable LORS remain the same as previous decision; the requested changes would enable the facility to continue to comply with all applicable LORS.

## **ANALYSIS OF REQUESTED CHANGES**

---

### **Combined Cycle Gas Turbines (CCGT) NOx Non-Cold Startup Emission Limits and NOx RTC**

The HBEP installed two high efficiency GE7FA.05 CCGTs. Condition of certification **AQ-24** currently limits the NOx mass emissions during a non-cold start up to 17 lbs per event. The recently completed commissioning and performance testing indicated that the CCGTs can operate within all established emission limits except for the NOx mass emission limit for a non-cold start up. The project owner found that it took longer for the turbines to synchronize to the grid than previously anticipated. While waiting to synchronize, the turbine must operate at Full Speed No Load (FSNL) for extended periods, which leads to a longer startup duration event and causes an increase of NOx emissions per startup event. The project owner analyzed the emissions from 26 non-cold startups and found that the highest NOx emissions was 31.9 lbs. Therefore, the project owner requested that the non-cold start up limit be increased from 17 pounds per event to 32 pounds per event. The project owner also filed a variance to SCAQMD so that the CCGTs could operate during the interim period, pending approval of the revised permit.

Increasing the non-cold start up NOx limit to 32 lbs per 30 minute event, and assuming full load operation for another 30 minutes at an emission rate of 16.8 lbs/hr would result in 1 hour emissions of 40.4 lbs. The maximum 1-hour impact modeled in the Final Commission Decision assumes the turbines are under the cold start up with NOx emissions of 61 lbs/hr. Therefore the proposed modification to increase the non-cold start up NOx limit to 32 lbs/event would not result in a scenario that would have greater impacts than what has already been modeled for the equipment, and new modeling for maximum 1-hour impact is not required.

However, an increase in non-cold start emissions would cause a slight increase of the total annual NO<sub>x</sub> emissions. Accordingly, the facility is required to increase the NO<sub>x</sub> withholding, as specified in condition **AQ-62**, for the first year of operation from 147,093 lbs/yr to a total of 156,093 lbs/yr. The petition did not provide a new modeling for the maximum annual nitrogen dioxide (NO<sub>2</sub>) impact. Since the change of the emissions is minor, staff estimated the maximum annual NO<sub>2</sub> impact by prorating the NO<sub>x</sub> annual emissions. As shown in **Air Quality Table 1**, the project annual NO<sub>x</sub> impact increases slightly but is still far below the limiting standard.

**Air Quality Table 1 The Maximum Annual NO<sub>2</sub> impacts after the Increase of Non-Cold Startup Emissions (µg/m<sup>3</sup>)**

	Project Impact (Before)	Project Impact (After) <sup>a</sup>	Background <sup>b</sup>	Total	Limiting Standard	Percent of Standard
NO <sub>2</sub>	0.59	0.63	15	15.63	57	27

Source: CEC 2017 and independent staff analysis.

Note: <sup>a</sup> The new project impact after the increase of non-cold startup emissions is calculated as:  $0.59 \mu\text{g}/\text{m}^3 / 147,093 \text{ lbs}/\text{yr} \times 156,093 \text{ lbs}/\text{yr} = 0.63 \mu\text{g}/\text{m}^3$ .

<sup>b</sup> The background concentration is the highest value from those of last three years (2017-2019) at Costa Mesa Station.

### **Definition of the Start Up**

Current condition **AQ-24** defines a cold start as a start that occurs after the steam turbine has been shutdown for 48 hours or more, and a non-cold start up as one which occurs after the steam turbine has been down for less than 48 hours. Defining cold and non-cold startups for combined cycle turbines by using the steam turbine generator (STG) shutdown time is common practice. This is because the combustion turbine generator (CTG) ramp speed must be limited in order to bring up the temperature of the STG casing, valves, and rotor slowly to minimize thermal stress on these parts. However, the conventional definition of cold and non-cold startups may not be appropriate for HBEP. Based on the design of the HBEP fast start combined cycle turbines, the temperature of the STG at start up is not a deterrent to the ramp rate of the CTG. Instead, the metal temperature of Heat Recovery Steam Generator (HRSG) components such as the high pressure (HP) drum, becomes the limiting factor. For this reason, AES provided the start times for cold and non-cold starts for their units, not based on STG downtime, but instead based on the HRSG downtime, the time to get to dry low NO<sub>x</sub> (DLN) load, and the time it would take to get the SCR catalyst up to the proper temperature for ammonia injection to begin. This was unclear in the original permit application submittal.

In existing condition **AQ-24**, the beginning of a startup is defined as when fuel combustion begins and the end of a startup is defined as when the turbine reaches best available control technology (BACT) levels. For more clarity, at this time it is recommended that the end of startup be defined as when the combustion turbine achieves instantaneous BACT levels for both NO<sub>x</sub> and CO based on the CEMS minute-by-minute data. Note that Condition **AQ-24** also limits the mass emission of NO<sub>x</sub>, CO, and VOC during start up as well. Therefore, during a startup, the turbine must both reach BACT levels within the specified timeframe, as well as meet the mass emission limits.

## **Boiler No. 2 Retirement Date**

AES Huntington Beach Boiler No. 2 is the unit that is proposed to be shutdown in order to provide MW offsets for the HBEP simple cycle turbines. Recently, the Statewide Advisory Committee on Cooling Water Intake Structures (SACCWIS) recommended to the State Water Resources Control Board (SWRCB) that the shutdown of several boilers be postponed from their originally scheduled shutdown dates in order to avoid negative impacts on grid reliability. In the case of AES HB Boiler No. 2, SACCWIS has recommended the boiler to be kept operational for an additional 3 years beyond its currently scheduled retirement date of December 31, 2020.

AES has not yet initiated construction on the simple cycle turbines, and they are currently scheduled to begin construction on these units in the 2nd quarter of 2022 and complete construction by the end of the 3rd quarter 2023. Under the provisions of SCAQMD Rule 1313, AES would have 90 days after first fire of the simple cycle units to permanently retire Boiler No. 2. Therefore, if the simple cycle turbines are constructed as currently scheduled, the proposed extension of the retirement deadline for Boiler No. 2 for an additional 3 years would still meet the requirements of SCAQMD rules. Condition **AQ-2** is proposed to be modified to reflect the proposed change to the retirement date. Note that under no circumstances could Boiler No. 2 operate for more than 90 days beyond the first fire of the simple cycle turbines, regardless of the OTC retirement date.

## **CO Emission Factors Prior to CEMS Certification**

The current condition **AQ-6** only defines the Volatile Organic Compound (VOC) and particulate matter less than 10 microns in diameter (PM10) emission factors for combined cycle gas turbines after the equipment is commissioned but before CEMS certification. SCAQMD adds the CO emission factors in the revised Title V permit, which are 15.18 lbs/mmscf during normal operation, 325 lbs. for a cold start and 137 lbs. for a non-cold start.

## **CONCLUSIONS AND RECOMMENDATIONS**

---

The proposed project changes would conform to applicable federal, state, and SCAQMD LORS. Therefore, the amended facility would not cause any significant adverse air quality impacts if the following conditions of certification would be included. Staff recommends that the CEC approve the revised conditions of certification as shown below.

## **AMENDED CONDITIONS OF CERTIFICATION**

---

The modifications to the Air Quality Conditions of Certification are included below. ~~Strikethrough~~ indicates deleted language and **underline and bold** is used for new language.

**AQ-2** This facility is subject to the applicable requirements of the following rules or regulation(s):

The facility shall submit a detailed retirement plan for the permanent shutdown of Huntington Beach (HB) Boilers 1 and 2 and Redondo Beach (RB) Boiler 7 describing in detail the steps and schedule that will be taken to render the boilers permanently inoperable. The retirement plan shall be submitted to SCAQMD within 60 days after the Permits to Construct are issued for gas turbines CCTG 1, CCTG 2, SCTG 1, and SCTG 2.

AES shall not commence any construction of HB Boilers 1 and 2 and RB Boiler 7 repowering project equipment including gas turbines CCTG 1, CCTG 2, SCTG 1, SCTG 2, Auxiliary Boiler, ammonia storage tanks, or the oil water separators, unless the retirement plan is approved in writing by SCAQMD. If SCAQMD notifies AES that the plan is not approvable, AES shall submit a revised plan addressing SCAQMD's concerns within 30 days.

Within 30 calendar days of actual shutdown, or by no later than November 1, 2019, AES shall provide SCAQMD with a notarized statement that HB Beach Boiler 1 and RB Boiler 7 are permanently shut down and that any re start or operation of the units shall require new Permits to Construct and be subject to all requirements of non-attainment new source review and the prevention of significant deterioration program.

Within 30 calendar days of actual shutdown, or by no later than December 31, 2020, **(unless the December 31, 2020 Once-Through Cooling Policy compliance date is extended by SWRCB)**, AES shall provide SCAQMD with a notarized statement that HB Beach Boiler 2 is permanently shut down and that any re start or operation of the unit shall require a new Permit to Construct and be subject to all requirements of non-attainment new source review and the prevention of significant deterioration program.

**In the event that the State Water Resources Control Board (SWRCB) extends the December 31, 2020 Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (Once-Through Cooling Policy) compliance date for Boiler 2, AES shall:**

**(1) Notify South Coast AQMD within 3 months of the approval of an extension, and (2) Within 30 calendar days of actual shutdown of HB Boiler 2, provide South Coast AQMD with a notarized statement that HB Boiler 2 is permanently shut down and that any re-start or operation of the boiler shall require a new Permit to Construct and be subject to all requirements of Non-attainment New Source Review and the Prevention of Significant Deterioration Program.**

AES shall notify SCAQMD 30 days prior to the implementation of the approved retirement plan for permanent shutdown of HB Boiler 1 and RB Boiler 7, or advise SCAQMD as soon practicable should AES undertake permanent shutdown prior to January 15, 2020.

AES shall notify SCAQMD 30 days prior to the implementation of the approved retirement plan for permanent shutdown of HB Boiler 2, or advise

SCAQMD as soon practicable should AES undertake permanent shutdown **more than 30 days** prior to December 31, 2020 **(or other date as modified by the SWRCB)**.

AES shall cease operation of HB Boiler 1 within 90 calendar days of the first fire of either CCTG 1 or CCTG 2, whichever is earlier. AES shall cease operation of HB Boiler 2 within 90 calendar days of the first fire of either SCTG 1 or SCTG 2, whichever is earlier. AES shall cease operation of RB Boiler 7 prior to the first fire of either CCTG 1 or CCTG 2, whichever is earlier.

At least 6 months prior to January 15, 2020, AES may submit a permit modification application requesting the permission to shut down a combination of boilers other than HB Boiler 1, HB Boiler 2, and RB Boiler 7 to offset the increases for this project. The other boilers must be located at AES facilities Huntington Beach GS, Redondo Beach GS, or Alamitos GS, and approval of the application must be received prior to any changes being made to the shutdowns outlined in this condition.

**Verification:** The project owner shall submit the retirement plan and any modifications to the plan to the CPM within five working days of its submittal either by: 1) the project owner to District, or 2) receipt of proposed modifications from District. The project owner shall make site available for inspection of records by representatives of the District, ARB, and the CEC.

**AQ-6** The project owner shall limit emissions from this equipment as follows:

<b>CONTAMINANT</b>	<b>EMISSIONS LIMIT</b>
PM10	Less than or equal to 6,324 LBS IN ANY ONE MONTH
CO	Less than or equal to 24,720 LBS IN ANY ONE MONTH
VOC	Less than or equal to 7,611 LBS IN ANY ONE MONTH

The above limits apply after the equipment is commissioned. The above limits apply to each turbine.

The project owner shall calculate compliance with the emission limit(s) by using fuel use data and the following emission factors: VOC: 2.66 lbs/mmcf, PM10: 3.94 lbs/mmcf, **CO: 15.18 lbs/mmscf during normal operation 325 lbs for a cold start and 137 lbs for a non cold start.**

The project owner shall calculate compliance with the emission limits for CO after the CO CEMS certification based upon readings from the SCAQMD certified CEMS.

The combined-cycle turbines are subject to this condition.

**Verification:** The project owner shall provide emissions summary data in 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 CEC.

**AQ-24** The project owner shall limit the number of start-ups to no more than 62 in any one calendar month.

The number of cold start ups shall not exceed 15 per month, the number of non-cold start ups shall not exceed 47 per month. ~~Additionally,~~

**Daily Start Up Limit - The number of start ups shall not exceed 2 per day.**

**Annual Start Up Limit -** the number of cold start ups shall not exceed 80 per year, and the number of non-cold start ups shall not exceed 420 per year.

For the purposes of this condition: A cold start up is defined as a start up which occurs after the ~~steam~~**combustion** turbine has been shutdown for 48 hours or more. A cold start up shall not exceed 60 minutes. Emissions during the 60 minutes that includes a cold start up shall not exceed the following: NOx - 61 lbs., CO – 325 lbs., VOC – 36 lbs.

A non-cold start-up is defined as a start-up which occurs after the ~~steam~~**combustion** turbine has been shutdown for less than 48 hours. A non-cold start up shall not exceed 30 minutes. Emissions during the 30 minutes that includes a non-cold start up shall not exceed the following: NOx - ~~1732~~**32** lbs., CO – 137 lbs., VOC – 25 lbs.

The beginning of a start-up occurs at initial fire in the combustor and the end of start-up occurs when the BACT levels are achieved **for both NOx and CO based on minute data**. If during start up the process is aborted the process will count as one start up.

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 CEC.

**AQ-62** This equipment shall not be operated unless the facility holds ~~147,093~~**156,093** 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**).

## **REFERENCES**

---

AES 2020a - AES Huntington Beach Energy, LLC, Petition to Amend - Title V Permit Revisions. June 17, 2020.

AES 2020b - AES Huntington Beach Energy, LLC, Notice of Receipt—Petition for Post-Certification Project Change. July 9, 2020.

CEC 2017 - California CEC, Revised Commission Final Decision of the Huntington Beach Energy Project (12-AFC-2C). May 31, 2017.

SCAQMD 2020 - South Coast Air Quality Management District, RECLAIM/Title V Facility Permit Revision (Facility ID# 115389). April 21, 2020.