INLAND EMPIRE ENERGY CENTER (01-AFC-17C)

Request to Amend Selected Air Quality Conditions of Certification

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INTRODUCTION

On November 6, 2009, the Inland Empire Energy Center, LLC (IEEC) filed a petition with the California Energy Commission (Energy Commission) requesting to amend the Conditions of Certification (COC) for the Inland Empire Energy Center Project (IEEC 2009). This amendment incorporates five minor permit changes to the decision already approved by the South Coast Air Quality Management District (SCAQMD), as explained below.

BACKGROUND

The combined cycle project was certified by the Energy Commission on December 17, 2003. In August 2005, the Energy Commission approved the petition to change the configuration of the IEEC project, imposing a number of air quality conditions based on the SCAQMD Preliminary Determination of Compliance (PDOC). Construction of the facility started on August 5, 2005 and first fire for Unit 1 occurred on May 18, 2008, and Unit 2 on July 22, 2008. On April 11, 2007 the Energy Commission approved another amendment petition for air quality COCs to make the project consistent with several changes of the SCAQMD RECLAIM/Title V permit in 2006. The facility is an 800 megawatt (MW) base load gas fired power plant located in the City of Menifee, in southern Riverside County.

The current amendment request aggregates several minor modifications into one amendment request. It modifies several Air Quality Conditions of Certification to reflect the additional changes that have been made to the SCAQMD RECLAIM/TITLE V permit conditions since the last Energy Commission amendment was approved on April 11, 2007:

- On September 21, 2007, the SCAQMD issued a minor revision to the RECLAIM/Title V facility permit related to a change in the specifications for the auxiliary boiler (see Attachment Air Quality 1).
- On April 4, 2008, the SCAQMD issued a minor revision to the RECLAIM/Title V facility permit related to permit condition changes needed to allow commissioning of the auxiliary boiler.
- On October 17, 2008, the SCAQMD issued a minor revision to the RECLAIM/Title V facility permit related to the auxiliary boiler's burner model designation, storage capacity for the on-site aqueous ammonia storage tanks, and emission limits applicable to the auxiliary boiler during boiler startups / shutdowns (see Attachment Air Quality 1).

- On June 3, 2009, the SCAQMD issued a minor revision to the RECLAIM/Title V facility permit related to allowable hours of operations for the emergency generators at the site.
- On August 25, 2009, the SCAQMD issued a minor revision to the RECLAIM/Title V facility permit related to allowable carbon monoxide (CO) emissions from the combined cycle units during startups and shutdowns.

These project changes were submitted to the Energy Commission as compliance reports at the time they were submitted to the SCAQMD. Staff was aware of these changes and did not expect any significant impacts from them. Therefore, for efficient processing, the facility owner was allowed to hold individual requests and aggregate them into a single amendment to the Energy Commission. Staff notes that these Owner-requested project changes have already been approved by the SCAQMD. If approved by the Energy Commission, the proposed changes would make the Energy Commission COCs consistent with the current project RECLAIM/Title V requirements. Staff evaluated the proposed changes and finds them consistent with all applicable laws, ordinances, regulations and standards (LORS) therefore, these proposed changes do not result in any significant air quality impacts.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS - COMPLIANCE

The project's proposed amendment is subject to all the LORS described in the Final Staff Assessment (FSA) (CEC 2003a).

SETTING

Since the certification of the project in 2003, the implementation of particulate matter less than 2.5 microns (PM2.5) standards has led to changes in the categorization of air quality in the IEEC project area. In addition, a new federal 1-hour Nitrogen dioxide (NO_2) standard became effective on April 12, 2010.

Air Quality Table 1 summarizes the area's attainment status for various applicable current state and federal ambient air quality standards (AAQS).

Air Quality Table 1
Federal and State Attainment Status for the South Coast Air Basin

Pollutant	Attainment Status	
	Federal	**State**
Ozone (O_3)	Nonattainment	Nonattainment
Carbon monoxide (CO)	Attainment [a]	Attainment
Nitrogen dioxide (NO_2)	Unclassified/Attainment [b]	Attainment
Sulfur dioxide (SO_2)	Attainment	Attainment
Particulate matter less than 10 microns (PM10)	Nonattainment	Nonattainment
Particulate matter less than 2.5 microns (PM2.5)	Nonattainment	Nonattainment

Source: U.S. EPA 2010a. ARB 2010a.
Notes:
a. The South Coast Air Basin was designated as a carbon monoxide attainment area on May 11, 2007.
b. A new federal 1-hour NO2 standard became effective April 12, 2010. Attainment status is expected to be determined by January 2012.

On April 12, 2010, the U. S. Environmental Protection Agency (U.S. EPA) adopted final rulemaking for a new federal short-term NO_2 standard. In this rulemaking, the U.S. EPA acknowledged the need to provide further guidance on methods to be used to evaluate the impact of new projects on this standard (Federal Register 2010). As of July 2010, staff has not been able to find adequate guidance to evaluate facility NO_2 impacts. Currently, applicants and staff are assessing compliance with this new NO_2 standard using limited guidance.

CRITERIA POLLUTANT AIR QUALITY DATA

Since the original IEEC licensing in 2003 and the first amendment in 2005, additional ambient air quality data have become available. **Air Quality Table 2** reflects the most recent data for the last six years.

Air Quality Table 2
Maximum Ambient Concentrations (ppm or µg/m^3)

Pollutant (Station)[a]	Averaging Period	Units	2003	2004	2005	2006	2007	2008	Limiting AAQS[c]
Ozone (Perris)	1 hour	ppm	0.155	0.128	0.088	0.169	0.138	0.142	0.09
Ozone (Perris)	8 hours	ppm	0.121	0.104	0.079	0.123	0.117	0.115	0.07
PM10 [b] (Perris)	24 hours	µg/m^3 [d]	142	83	80	125	167	85	50
PM10 (Perris)	Annual	µg/m^3	43.9	41.4	39.1	44.9	65.4	29.6	20
PM2.5 [b] (Magnolia St.)	24 hours	µg/m^3	73.3	93.8	94.9	55.3	68.5	42.9	35
PM2.5 (Magnolia St.)	Annual	µg/m^3	22.6	20.8	17.9	16.9	18.3	13.2	12
CO (Magnolia St.)	1 hour	ppm	4.6	3.9	4	3.8	3.7	4.7	20
CO (Magnolia St.)	8 hours	ppm	3.33	2.46	2.39	2.38	2.16	1.93	9.0
NO_2 (Lake Elsinore)	1 hour	ppm	0.074	0.090	0.065	0.072	0.064	0.055	0.18
NO_2 (Lake Elsinore)	98th Percentile of Daily Maximum 1-hr	ppm	--	--	0.053	0.054	0.051	0.05	0.10
NO_2 (Lake Elsinore)	Annual	ppm	0.018	0.015	0.014	0.015	0.015	0.013	0.03
SO_2 (Rubidoux Ave.)	1 hour	ppm	0.018	0.017	0.024	0.012	0.016	0.011	0.25
SO_2 (Rubidoux Ave.)	24 hours	ppm	0.012	0.015	0.011	0.003	0.004	0.003	0.04
SO_2 (Rubidoux Ave.)	Annual	ppm	0.002	0.004	0.003	0.001	--	0.000	0.03

Source: ARB 2010b, U.S.EPA 2010b.
Notes:
[a] No single station in the area monitors all pollutants. The representative station nearest the project site is used in each case.
[b] Exceptional PM concentration events, such as those caused by wind storms and wildfires are not shown when excluded by U.S.EPA; however, some exceptional events may still be included in the data presented.
[c] The limiting AAQS is the most stringent of the CAAQS or NAAQS for that pollutant and averaging period.
[d] Micrograms per cubic meter or ug µg/m^3.

Staff recommends the background ambient air concentrations in **Air Quality Table 3** for use in the impacts analysis. The recommended background concentrations are based on the maximum criteria pollutant concentrations from the past three years of available data collected at the most representative monitoring stations surrounding the project site.

Air Quality Table 3
Staff Recommended Background Concentrations (µg/m^3)

Pollutant	Averaging Time	Recommended Background	Limiting AAQS	Percent of Standard
NO_2	1 hour	135.6	339	40%
	98th Percentile of Daily Maximum 1-hr	97.5	189	52%
	Annual	28.5	57	50%
CO	1 hour	5405.0	23,000	24%
	8 hour	2644.4	10,000	26%
PM10	24 hour	167.0	50	334%
	Annual	65.4	20	327%
PM2.5	24 hour	18.3	35	52%
	Annual	4.7	12	39%
SO_2	1 hour	41.9	665	6%
	24 hour	10.5	105	10%
	Annual	2.7	80	3%

Source: ARB 2010b, U.S.EPA 2010b and Energy Commission Staff Analysis.

ANALYSIS OF AMENDMENT REQUESTS

Exemption from 1-hour NOx Emission Limit during Auxiliary Boiler Commissioning, Startups and Shutdowns

On March 21, 2008, the applicant requested a 200-hour exemption from the 1-hour average nitrogen oxides (NOx, primarily NO and NO_2) emission limit of 7.0 parts per million (ppm) at 3 percent oxygen (O_2) during the commissioning of the auxiliary boiler. On June 4, 2008, the applicant requested an exemption from the 1-hour average NOx emission limit of 7.0 ppm at 3 percent O_2 and the 1-hour average ammonia (NH_3) emission limit of 5 ppm at 3 percent O_2 during auxiliary boiler startups and shutdowns.

Since no change is proposed to annual emissions limits, or to emission levels for any criteria pollutant other than NOx, the only changes are the project's 1-hour NO_2 impacts. The impacts are summarized in **Air Quality Table 4**.

Air Quality Table 4
Maximum 1-hour NO_2 Impacts

Pollutants	Period	Project Impact ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total Impact ($\mu g/m^3$)	Standard ($\mu g/m^3$)	Percent of Standard
1-hr NO_2 (Calif. Standard)	200 hour auxiliary boiler commissioning	123	135.6	258.5	339	76%
	Auxiliary boiler startups/shutdowns	44	135.6	180	339	53%
98th Percentile of Daily Maximum 1-hr (Fed. Standard)	200 hour auxiliary boiler commissioning	123 [a]	97.5	220.5	189	117%
	Auxiliary boiler startups/shutdowns	44 [a]	97.5	141.5	189	75%

Source: IEEC 2009, table 3.1-1.
Note: [a] This is the maximum 1-hour impact, not the 98th percentile impact, and not a 3-year average.

The impacts estimated in **Air Quality Table 4** are from the auxiliary boiler alone. Since the auxiliary boiler is the only equipment in operation during auxiliary boiler commissioning and auxiliary boiler startup/shutdown periods, these impacts also represent the worst-case facility total impacts. Although the modeled result for the new federal 1-hour NO_2 standard indicates a result above the standard during the short commissioning phase, this is the maximum 1-hour impact and not the 98th percentile impact (8th highest impact). Furthermore, it is a short-term effect and not representative of a 3-year average. Condition of Certification **AQ-42** limits commissioning to a total of 200 hours. Staff believes that this short-term value would not have exceeded the standard when averaged over the 3-year period of this new federal NO_2 standard, as explained more fully below. It should also be noted that the commissioning of the boiler was completed in August 2008, which is before the effective date of the new federal standard (April 12, 2010). Therefore, although staff evaluates the new federal 1-hr NO_2 impacts, this new standard is not applicable to the commissioning of the boiler, nor is clear guidance available from the U.S. EPA on how to evaluate this source. The other administrative changes for the auxiliary boilers are shown in revised **AQ-39** and **AQ-45** below.

The U.S. EPA implemented a new, 1-hour NO_2 standard, which became effective on April 12, 2010, shortly before the end of full facility commissioning. This new standard is expressed as a 3-year average of the 98th percentile of the *daily maximum* 1-hour concentration (i.e., the 8th highest of daily highest 1-hour concentrations). The new standard requires “first tier” ambient NO_2 monitoring near major roadways as defined in the implementing language and “second tier” monitoring for regional NO_2 concentrations. Staff adds the 2006-2008 average of 98th percentile background NO_2 concentration to the maximum 1-hour NO_2 project impacts to get a very conservative estimation of the total impacts. According to this analysis, the 1-hour NO_2 impacts of the auxiliary boiler during startup and shutdown under routine operations are less than the new federal standard. Although the 1-hour NO_2 impact in the commissioning phase was modeled to be above the standard, staff does not expect it to have a significant impact

due to the very limited commissioning period compared to the 3-year averaging time used for the standard.

Increase in Total Commissioning Hours for the Gas Turbine

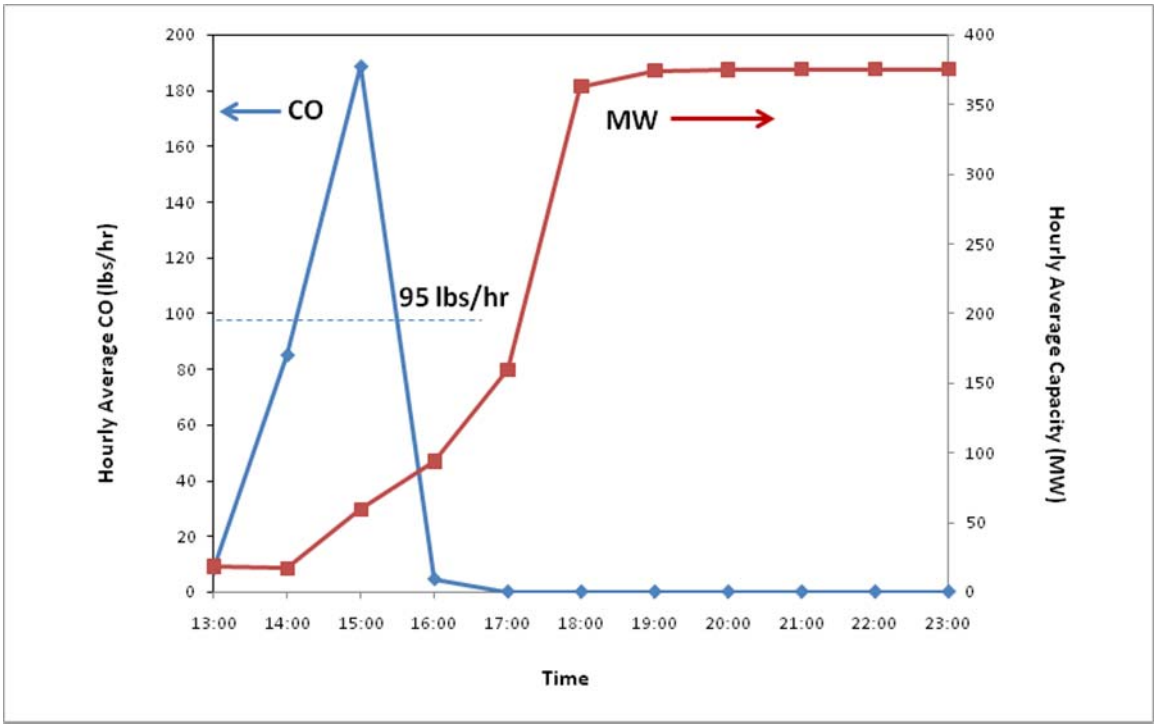
On September 23, 2008, the applicant filed with the SCAQMD Hearing Board a variance for relief from the SCAQMD permit condition of 509 commissioning hours. The SCAQMD Hearing Board granted a short-term variance for Units 1 and 2, which increased the commissioning period to 738 hours. The extended commissioning hours are due to the unexpected trips and shut-downs of Unit 2. With 466 commissioning hours consumed at that time, an additional 72 hours for Unit 1 and 200 hours for Unit 2 were needed to perform the remaining commissioning activities. Although there was an increase of total commissioning hours, all commissioning emissions were included in monthly and annual emission totals, and the maximum monthly or annual emission limits were not exceeded given the associated extended shutdown periods during commissioning activities. There is no need to increase the current monthly and/or annual emission limits for the gas turbines. Therefore, the proposed change to **AQ-18** is not expected to lead to new significant impacts.

Proposed CO Emission Limits during Startups / Shutdowns of Gas Turbines

On February 19, 2009 and May 12, 2009, the applicant requested revisions to the permit to allow an increase in the CO emission limit from 95 lbs/hr to 800 lbs/hr and from 300 lbs/event to 2,000 lbs/event during startups/shutdowns of the two gas turbines. Since the gas turbines at this facility are the first General Electric S107H gas turbines operating in the United States, and the second and the third in the world, the original CO startup emission limits were based on very limited information available from the vendor. First quarter 2010 operating data (IEEC 2010) from the CO continuous emissions monitor for IEEC Unit 1 indicate that the CO emission rates during the turbine startup are higher than the original emission limit in the permit (95 lbs/hr). As an example, Air Quality Figure 1 plots the hourly average CO startup emissions and MW output measured versus time for a recent startup. For this startup event, the instantaneous CO emission peaked at 275.6 lbs/hour but when averaged over each clock hour, the maximum hourly CO emissions rate peaked at 189 lbs/hr.

Additionally, startup events with the six highest instantaneous carbon monoxide emission rates for the first quarter of 2010 are shown in **Air Quality Table 5**. These instantaneous values, expressed in pounds per hour, typically equate to lower actual average hourly values since the startup can start at any time during an hour and instantaneous rates do not appear to hold steady for the whole hour. The 800 lbs/hour CO limit is being requested as a ceiling value to accommodate rarer startup conditions (cold turbine start-up, cold ambient temperatures, or persistent equipment problems that extend the duration of a startup) with greater margin and are not typical of routine start-up emissions.

Air Quality Figure 1
IEEC Operating Record (02/09/2010 13:00-23:00)



Source: IEEC 2010.
Notes: The data shown represent 1-hour average values. The maximum instantaneous CO emission (276 lbs/hr) is not shown in this figure.

Air Quality Table 5
Six Highest Startup Carbon Monoxide Emissions in First Quarter of 2010

Date	Time of Event	Instantaneous Maximum CO Emissions (Lbs/hr) [a]
1/20/2010	02:40 – 04:28	22.2
1/23/2010	15:18 – 17:56	129.8
1/28/2010	18:55 – 21.07	101.5
2/9/2010	06:28 – 08:00	22.9
2/9/2010	14:18 – 17:31	275.6
3/14/2010	20:53 – 23:48	146.6

Source: IEEC 2010
a. Instantaneous value are shown as pounds per hour. Actual average hourly emissions are typically lower.

The requested CO emission startup limit of 800 lbs/hr could result in a worst-case combined startup emission rate of 1,600 lbs/hr for both turbines. As shown in **Air Quality Table 6**, the emission impacts at the ceiling level of 1,600 lbs/hr are well below

the most stringent CO ambient air quality standards. Due to the planned limited number of startups/shutdowns per year, the applicant did not request to change monthly CO emission limits. An estimated number of startups and shut downs, along with operational hours, were used to calculate daily and monthly emissions. If the project experiences fewer startups or less rare conditions, then fewer of the daily or monthly emission caps are consumed by startup operations, leaving more emissions for operation under the caps. If the project experiences more frequent startups, then fewer emissions are available under the caps for operations. The project owner has an incentive to limit startups, but also has the flexibility to startup more frequently if needed.

The number of startups will not change the short-term calculated maximum 1-hour or 8-hour CO impact. This is because the modeling assumes a startup occurs each hour of the year in order to determine which hour has the maximum 1-hour impact. These are not used for longer-term impacts because there is no long-term ambient air quality standard for carbon monoxide, only the 1-hour and 8-hour standards.

Staff believes that this revision to **AQ-SC14** and **AQ-18** will not lead to significant air quality impacts and has no objection to this revision. If there is a need to change the operation profile to reflect an increase in the annual number of startups or shutdowns, the facility will still need to comply with the current monthly CO emissions limit specified in **AQ-13** (9,728 lbs/month) and **AQ-18** (31 startup/shutdown hours/month) unless the project owner files a new amendment to increase the monthly CO emissions limit and gets the approval of both the SCAQMD and the Energy Commission. If this becomes necessary, the facility owner will have to justify these changes at that time and demonstrate continued compliance with all then-applicable LORS.

Air Quality Table 6
Maximum Startup/Shutdown CO Impacts (Both Turbines - 1,600 lbs/hr CO)

Pollutants	Average Period	Project Impact ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total Impact ($\mu g/m^3$)	Standard ($\mu g/m^3$)	Percent of Standard
CO	1 hour	1,646	5,405.0	7,051	23,000	31%
	8 hour	957	2,644.4	3,601.4	10,000	36%

Source: IEEC 2009, table 3.1-1.

Clarification of the Emergency Generators Operation Hours

On March 3, 2009, the applicant requested a permit change to clarify the number of hours allowed for emergency generators. The previous permit condition limited the annual operations to no more than 50 hours, which matches the 50 hours/year allowed under the California Air Resources Board's (ARB) Internal Combustion Engine Airborne Toxic Control Measure (ATCM) for non-emergency operation. While non-emergency operations are mainly for routine testing and maintenance purposes, additional operating hours are necessary for emergency operations. Under the ATCM for Stationary Compression Ignition Engines (17 CCR 93115) a total of 50 hours/year is allowed for routine testing with unlimited emergency operation. Under the more

restrictive SCAQMD emergency engine exemptions in Rule 1304(a)(4) and 2005(k)(5), the engines are limited to a combined total of 200 hours per year per engine.

The applicant requested a combined total of 200 hours in any one year for each engine for any purpose, which includes no more than 50 hours for routine testing purposes. The changes are shown below in **AQ-48**. Due to the increase of annual operation hours, the required amount of NOx RECLAIM trading credits (RTCs) was increased from 1,946 lbs/year to 7,784 lbs/year per engine. See revisions to **AQ-51**.

The SCAQMD issues facility permits on an equipment basis. According to the SCAQMD Rule 1304, emergency generators are exempted from air quality impact modeling requirements as long as they are not operated more than 200 hours per year. Therefore, the NO_2 impacts from the emergency generator and the total facility due to the change of emergency generators operation hours were not evaluated or compared to the current state and federal ambient air quality standards. However, as explained above, IEEC purchased additional NOx RECLAIM credits to mitigate this impact. SCAQMD completed their review of these IEEC-requested minor changes in June 2009.

Administrative Changes to Air Quality Conditions

On May 4, 2007, the applicant requested a change of the auxiliary boiler from a Nebraska Model NS-F-76 to a Rentech Model 2005-84. The auxiliary boiler burner, selective catalytic reduction (SCR) system, and the auxiliary boiler stack height remained unchanged.

On March 18, 2008, the applicant requested a change to the auxiliary boiler burner from a Todd Variflare Model VII690VGXXX to a John Zink Model VII690VGXXX. The change impacts only the manufacturer's name on the equipment nameplate because Todd Combustion became a subsidiary of John Zink. There is no physical difference between the permitted and the actual burner. The applicant also requested the change of the aqueous ammonia storage tanks from a 16,000-gallon storage capacity to a 16,900-gallon storage capacity. This change does not affect the emission rates or regulatory requirements because the tanks will continue to be vented back to the tanker during filling.

CONCLUSIONS AND RECOMMENDATIONS

The requested project changes would likely conform with applicable federal, State, and SCAQMD air quality LORS, and the amended project would not be likely to cause significant air quality impacts, provided that the following COCs are included. Staff recommends that the revised COCs be approved as shown below.

AMENDED AND PROPOSED CONDITIONS OF CERTIFICATION

Below is a list of those COCs that must be revised from those in effect as of the 2007 amendment (CEC2007). These changes make the COCs consistent with current

SCAQMD permit requirements. ~~Strikethrough~~ is used to indicate deleted language and **underline and bold** is used for new language.

Staff Air Quality Conditions of Certification – Operation

AQ-SC14 The project owner shall limit emissions during startup periods. During startup periods, the project owner shall limit the combined CO emission rate for the two gas turbines to ~~190~~ **1600** lb/hr (~~95~~ **800** lb/hr for each turbine) and limit the combined NOx emission rate for the two gas turbines to 816 lb/hr (408 lb/hr for each turbine).

Verification: See the verification for Condition **AQ-18**.

District Conditions of Certification – Determination of Compliance Gas Turbines and SCR

AQ-18 The operator shall operate and maintain this equipment according to the following requirements:

The commissioning period shall not exceed ~~509~~ **738** hours of operation for both turbines ~~during the first 180 calendar days from the date of initial start-up~~. Startup/shutdown time shall not exceed 4 hours per day per gas turbine, except for a cold startup and combustor-tuning activities, which shall not exceed 6 hours per day per gas turbine. A cold startup shall be defined as a startup of the gas turbine after 72 hours of non-operation. Combustor-tuning activities shall be defined as all testing, adjusting, tuning, and calibration activities recommended by the turbine manufacturer to ensure safe, reliable, and in-specification operation of the turbine. Startup/shutdown and combustor-tuning activity emissions shall not exceed 408 lbs/hr NOx and ~~95~~ **800** lbs/hr CO averaged for the duration of the startup. The startup/shutdown and combustor-tuning activity emissions shall not exceed 803 lbs/event NOx and ~~300~~ **2000** lbs/event CO.

Monthly startup/shutdown time shall not exceed 31 hours. Shutdown time does not include non-operation time.

The operator shall provide the AQMD with written notification of the initial startup date. Written records of commissioning, startups, shutdowns, and combustor-tuning activities shall be maintained and made available upon request from AQMD. (SCAQMD E193-2)

Verification: The CPM may increase the total number of commissioning hours provided that such an increase was approved by the SCAQMD Hearing Board as part of a variance proceeding for the project. The project owner shall submit to the CPM the final commissioning status report as in Condition AQ-17. The project owner shall provide startup/shutdown and combustor-tuning activity occurrence, duration, and emissions data demonstrating compliance with this condition as part of the Quarterly Operation Report (AQ-SC8). The project owner shall make the site available for inspection of the

commissioning, start-up/shutdown, and combustor tuning activity records by representatives of the District, CARB and the Commission.

Auxiliary Boiler and SCR

AQ-39 The 8.49 lbs/mmscf NO_x emission limit(s) shall only apply **after the installation and operation of the SCR catalyst** during the interim reporting period to report RECLAIM emissions. (SCAQMD A99-2) **The 100.67 lbs/mmscf NOx emission limit(s) shall only apply prior to the installation of the SCR catalyst during the interim reporting period to report RECLAIM emissions. (SCAQMD A99-4)**

Verification: The project owner shall submit to the CPM and APCO auxiliary boiler emissions data demonstrating compliance with this condition through the use of the required RECLAIM emission factor, as appropriate, as part of the Quarterly Operation Report (**AQ-SC8**).

AQ-42 The 7 ppmv NO_x emission limit(s) is averaged over one hour at 3 percent oxygen, dry basis. **This limit shall not apply during the initial auxiliary boiler commissioning period not to exceed 200 hours or until the SCR catalyst is installed and operational, whichever occurs first. This limit shall not apply during startup and shutdown periods. Startup shall not exceed 75 minutes per occurrence and shutdown shall not exceed 30 minutes per occurrence. There shall be no more than one startup and one shutdown per day.** (SCAQMD A195-4)

Verification: The project owner shall submit to the CPM and APCO auxiliary boiler CEMS emissions data demonstrating compliance with this condition as part of the Quarterly Operation Report (**AQ-SC8**).

AQ-45 The 5 ppmv NH3 emission limit(s) is averaged over 1 hour at 3 percent oxygen, dry basis. **The limit shall not apply during the auxiliary boiler D3 startup process when the SCR catalyst temperature is below 480 degree F. The limit shall not apply during the auxiliary boiler D3 boiler shutdowns.** (SCAQMD A195-8)

Verification: See verification for Conditions **AQ-32**, **AQ-33**, and **AQ-46**.

Two Emergency Generator Engines and One Fire Pump Engine

AQ-48 **Emergency Generator Engines:** The operator shall limit the operating time of each engine to no more than ~~50~~ **200** hours per year. **The 200 hours annual limit includes no more than 50 hours in any one year for maintenance and testing purposes.** (SCAQMD C1-1) **Emergency Fire Pump Engine: The operator shall limit the operating time to no more than 50 hours in any one year. (SCAQMD C1-3)**

Verification: The project owner shall submit to the CPM and APCO the emergency generator and fire pump IC engines operations data demonstrating compliance with this condition as part of the Quarterly Operation Report (**AQ-SC8**).

AQ-51 The emergency generator engines shall not be operated unless the operator demonstrates to the Executive Officer that the facility holds sufficient RTCs to offset the prorated annual emissions increase for the first compliance year of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the first compliance year of operation, the facility holds sufficient RTCs in an amount equal to the annual emissions increase. To comply with this condition, the operator shall prior to the first compliance year hold a minimum NOx RTCs of 1,946 lbs for each engine. This condition shall apply during the first twelve months of operation. To comply with this condition, the operator shall, prior to the beginning of all years subsequent to the first compliance year, hold a minimum NOx RTCs of ~~1,946~~ **7,784** lbs for each engine. In accordance with Rule 2005(f), unused RTCs may be sold only during the reconciliation period for the fourth quarter of the applicable compliance year inclusive of the first compliance year. (SCAQMD I296-4)

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

Attachment Air Quality 1 – AQ-SC16, Equipment Description

EQUIPMENT DESCRIPTION

Section H of the facility permit: Permit to Construct and temporary Permit to Operate

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions and Requirements	Conditions
PROCESS 1: COMBUSTION AND POWER GENERATION					
SYSTEM 2: AUXILIARY EQUIPMENT					
BOILER, AUXILIARY BOILER, NATURAL GAS, ~~NEBRASKA, MODEL NS-F-76~~ **RENTECH, MODEL 2005-84**, WITH LOW NOX BURNER, 152.12 MMBtu/HR, WITH: A/N: ~~456170~~ **483511** Permit to Construct Issued: ~~6/02/06~~ **10/16/08** BURNER, NATURAL GAS, ~~TODD VARIFLAME~~ **JOHN ZINK**, MODEL VII690VGXXX~~X~~, WITH LOW NOX BURNER,	D3	C6	NOx MAJOR SOURCE**	**NOx**: 7.0 PPMV NATURAL GAS (4) [RULE 2005 BACT, RULE1703-PSD Analysis]; NOx: 8.49 LBS/MMSCF NATURAL GAS (1) [RULE 2012]; **100.67 LBS/MMSCF NATURAL GAS (1A) [RULE 2012]** **CO**: 50 PPMV NATURAL GAS (4) [RULE 1303 BACT]; CO: 400 PPMV NATURAL GAS (5A) [RULE 1146]; CO: 2,000	A63.2, A99.2, **A99.4,** A195.4, A195.5, A195.6, B61.1, C1.2, D29.4, D82.3, D82.4, E193.1, E193.3,

152.12 MMBTU/HR				PPMV NATURAL GAS (5) [RULE 407]; **VOC**: 10 PPMV NATURAL GAS (4) [RULE 1303 BACT] **PM10**: 7.26 LB/MMSCF NATURAL GAS (4) [RULE 1303-BACT]; PM10: 0.1 GRAINS/SCF NATURAL GAS (5) [RULE 409]; H2S: 0.25 GRAINS PER 100 SCF NATURAL GAS (4) [RULE 1303-BACT]	E193.6, I296.3, K40.2

Process 2: INORGANIC CHEMICAL STORAGE					
System 1: AMMONIA STORAGE TANKS					
ROOF, #1, 28% AQUEOUS AMMONIA, ~~16,000~~ **16,900** GALS, DIAMETER: 10 FT; LENGTH: 26 FT A/N: ~~439497~~ **480152** Permit to Construct Issued: ~~**08/05/05**~~ **10/16/08**	D7				E144.1, C157.1, E193-1 E193.3,
STORAGE TANK, FIXED ROOF, #2, 28% AQUEOUS AMMONIA, ~~16,000~~**16,900** GALS, DIAMETER: 10 FT; LENGTH: 26 FT A/N: ~~439498~~ **480153** Permit to Construct Issued: ~~08/05/05~~ **10/16/08**	D8				E144.1, C157.1, E193-1, E193.3,

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