SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGES 18	PAGE 1
ENGINEERING AND COMPLIANCE DIVISION	APPL. NO. 509444	DATE 6/25/2010
APPLICATION PROCESSING AND CALCULATIONS	PROCESSED BY SAAndrawis	CHECKED BY

PERMIT TO OPERATE /CHANGE OF CONDITION

COMPANY NAME
TESORO REFINING AND MARKETING CO
P.O. BOX 817, WILMINGTON, CA 90748-0817

EQUIPMENT LOCATION
2101 E. PACIFIC COAST HIGHWAY
WILMINGTON, CA 90744
Facility ID#: 800436
Facility Type: NOx & SOx RECLAIM (Cycle 1), Title V

EQUIPMENT DESCRIPTION

Additions are shown as underlined and deletions are shown as ~~strikeouts~~.
Section D: Permit to Operate

Equipment	ID No.	Connected To	RECLAIM Source Type / Monitoring Unit	Emissions and Requirements	Conditions
PROCESS 1: CRUDE DISTILLATION					P13-1
SYSTEM 3 : CRUDE DISTILLATION HEATERS					
HEATER, CRUDE, H-1, PROCESS GAS, REFINERY GAS, WITH LOW NOx BURNER, AIR PREHEATING, 198.98 MMBTU/HR WITH A/N: ~~470259,~~ 509444 BURNER, REFINERY GAS, JOHN ZINK, MODEL PSMR-17, WITH LOW NOX BURNER, 12 TOTAL , 198.98 MMBTU/HR	D9		NOX: MAJOR SOURCE**; SOX: MAJOR SOURCE**	**CO**:35 PPMV(5)RULE 1303(a)(1)-[BACT-5-10-1996]; **CO**: 2000 PPMV (5A) [RULE 407, 4-2-1982]; **PM**: (9) [RULE 404, 2-7-1986]; **PM**: 0.1 GRAINS/SCF (5) [RULE 409, 8-7-1981]	A63.10, **A99.17,** A305.1, B61.1, D28.3, D90.7, ~~D328.1~~*** H23.3, I296.1

- (1) Denotes RECLAIM emission factor
- (2) Denotes RECLAIM emission rate
- (3) Denotes RECLAIM concentration limit
- (4) Denotes BACT emission limit
- (5)(5A)(5B) Denotes command and control emission limit
- (6) Denotes air toxic control rule limit
- (7) Denotes NSR applicability limit
- (8)(8A)(8B) Denotes 40 CFR limit(e.g. NSPS, NESHAPS, etc.)
- (9) See App B for Emission Limits
- (10) See Section J for NESHAP/MACT requirements

** Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

*** Note: CO CEMS is required per condition A63.10; also CO source tests is required every 3 years per condition D28.3; therefore, this condition is not required for D9

FEE ANALYSIS

All fees shown in Table 1 have been paid by the applicant.

Table 1 – Summary of Fee Analysis

A/N	Equipment Description	BCAT/ CCAT	Fee Schedule	Fee Type	Fee	XPP Fee	Total Fee
509443	Permit Amendment	555009 (BCAT)		FP –RECLAIM/ Title V Significant Amendment	$1687.63		$1687.63
509444	Heater	019605	E	Change of condition	$4,416.74	$2,208.37	$6,625.11
				Total			$8,312.74

BACKGROUND

This application was received by the AQMD on March 30, 2010 from Tesoro Refining And Marketing Co for a change of permit condition for the Crude Heater H-1 (Device D9).

This crude heater was constructed in 1981 under Application C-39265, The permit to operate was issued in 12/20/1984 permit no.M-46940. In July 19, 1990, under A/N 211799, the crude heater was modified by the addition of a Selective Catalytic Reduction System to to comply with Rule 1109 control plan, the permit to operate was issued in 1990 under P/O D89943.

In 1999, Tesoro previously Equilon submit application no. 349114 to replace the SCR system for NOx control technology with 12 John Zink ultra low Nox burners (INFURNOX) and revise the maximum design capacity from 180.72 to 198.92 MMbtu/hr using high heating value of the fuel. The facility proposed CO concentration limit of 35 ppm @3% O2, eventhough it was not BACT limit, based on the burner manufacturer guarantee during normal operation.

There was an increase in CO emissions from revising the heater design capacity. The facility had provided ERC (certificate no. AQ002655) to offset this increase (71X1.2=85 lbs/day) (see attachment 7). Please see REG XIII-NSR calculations in A/N 349114 (see attachment 6).

Condition A305.1 was imposed in the permit to allow the heater to operate without the SCR provided that the emission concentrations being monitored by the certified CEMS serving this equipment is below the valid upper range specified in the approved CEMS plan.

According to Tesoro, the burner modification of H-1 Heater was completed as planned and post modification source test was conducted pursuant to permit condition D28.3.

The most recent test was conducted on July 6, 2009 and the test results were deemed 'Conditionally Acceptable' by District STE on 11-13-2009 (see attachment 4).

Tesoro proposes in this application the addition of a new condition and revision of an existing condition to clarify that the CO concentration limit of 35 ppm does not apply during the specific operating conditions described below.

Tesoro identifies the specific operating conditions when the heater does not meet the current 35 ppm CO concentration limit specified in the permit and is operating outside normal parameters, however, it will still meet the CO daily emissions limit that is specified in condition A63.10, which is 123 lbs/day. For example, during start-up, this typically lasts 2 to 3 hours, low fuel flow to the heater results in a low temperature with incomplete combustion in the firebox of the heater. The incomplete combustion leads to CO concentrations that are higher than the specified limit. In some circumstances, the adjustment to 3% excess oxygen following a heater trip and safety precautions during restart that require the purging of the firebox prior to the relight of the burners to assure that combustible gases do not remain, can result in exceedances of CO limit.

There will be no physical or operational changes to the H-1 Heater (D9), and there is no change in the heat rating for the Heater due to this revision to the permit.

The expected operating schedule is 24 hours per day, 7 days per week, 52 weeks per year.

PROCESS DESCRIPTION

The Crude Unit distills crude oil to hydrocarbon fractions for use in the manufacture of various fuels. The designed throughput of the crude unit is 60,000 barrels per stream day (BPSD).

Crude Oil is pumped from existing storage tanks and fed to the unit. The cold crude passes through a train of heat exchangers where it is heated to approximately 300°F. The crude is next reduced in pressure in a flash drum. From here the vapor phase flows to the crude fractionator while the liquid is pumped through a second set of exchangers and fed to the crude heater at a temperature of about 500°F. The crude fractionator produces top and bottom products and three side streams. The top vapor product, a full-range naphtha is further separated and produces other products. The fractionator bottom product is also steam stripped, cooled and sent either to the delayed coker, vacuum unit or to storage. The three side streams are kerosene, diesel and heavy gas oil after cooled by heat exchangers are sent to storage. (See attachment 3 for the crude unit flow diagram)

The subject crude heater H-1 is fired with refinery gas only. The heater is a vertical cylindrical refinery type heater. It is equipped with an air preheater which heats the combustion air by exchange with flue gases. The heated air enters the plenum and is

mixed with refinery fuel at the burners and then ignites. The preheater unit saves fuel and improves efficiency. The heater is equipped with INFURNOx burners. The burner design is based upon the utilization of the inert flue gases within the furnace and the creation of a primary and a secondary combustion zone to lower NOx emissions. See Attachment 3 for the heater configuration.

COMPLIANCE RECORD REVIEW

The facility's compliance history for the past 2 years indicates one NOV (P52842) is still pending (see Attachment 1). P52842 was issued to Tesoro on 4-27-10 for multiple violations of Rule 1189(c)(3). An emergency hearing was conducted at the AQMD Hearing Board on 4-28-10 and the facility was denied a variance. Tesoro is expected to be placed under an abatement order by the District to have this compliance issue resolved. Note that the HGU-2 unit has been shutdown since 4-6-10 and is not expected to operate untill a variance or order of abatement is granted. The details of this NOV is with Attachment 1.

CHANGE OF CONDITION EVALUATION

Tesoro submitted each of the periods of abnormal operation that the current CO limit specified in the permit was exceeded during the heater trip in attachment 2. The operational periods of the heater when the CO concentration limit is not achievable are described below;

A. Following the shutdown of the heater and when the heater process temperature is getting up to normal operating range during start-up.

1. Up to two hours of a heater shutdown/startup: (such as, following a heater trip due to an electrical problem). A heater shutdown/startup is defined as when the fuel gas to the heater drops below 15 MSCFH.
Specific examples that demonstrate that the CO concentration limit is not achievable during the two hours of a heater shutdown/startup are in attachment 2.
2. The time that the heater process outlet temperature reading is less than the normal operating temperature of 680 degree F following a heater shutdown: (such as, is required during the Process Unit startup. The Unit startup procedure drives the timing of the increase in heater temperatures. It is not simply the act of starting up the heater that determines the time required to achieve a normal operating temperature. Specific examples that demonstrate that, following a heater shutdown, the CO concentration limit is not achievable during the time that the process outlet temperature reading is below 680 degree F is in attachment 2.
B. During abnormal Operational Periods

Also in attachment 2 shows specific parameters that are recorded during the periods

when the heater operation is outside normal parameters. These recorded parameters document the operational periods when the CO concentration limit is not achievable. However, these abnormal operational periods are not covered in this evaluation. Only startups and shutdowns periods are covered in this evaluation

The calculations to determine the CO mass emissions rate is as follows:

Calculating the adjusted CO concentration is a two step process, done in the spreadsheets used in the exhibits of attachment 2. The first calculation is for 3% O2 adjusted 15 minute average CO concentration. The equations used are:

15 minute Raw CO = (Raw CO for each of the 15 minutes starting at 0:00 of each hour) / 15

15 minute excess O2 = (Raw O2 for each of the 15 minutes starting at 0:00 of each hour) / 15

15 Minute Adjusted CO = (15 minute raw CO) * ((20.9-3) / (20.9 – 15 minute excess O2))

Then, the 15 minute adjusted CO is used, along with average fuel flow, average Fuel HHV and F factor to determine the daily mass. The equation is:

Daily CO mass = 15 Minute Adjusted CO *(20.9/17.9)*(28/379/1000000)*(8552)*Average Fuel flow*(1000)* Average HHV /(1000000)*24

15 Minute Adjusted CO is in ppm
Average Fuel flow is in thousand standard cubic feet / hour
8552 is the F-factor from LAR's RECLAIM program
Average HHV is in BTU / SCF

An example of Exceedance of daily mass emission limits are shown in the table below. Note that the mass limit of 123 lb/day was also exceeded during this event.

At approximately 7:46 am on November 14, 2009, the H-1 heater was tripped by a safety shutdown related to low steam flow to the heater charge pump. Heater outlet temperature quickly dropped below 680°F. The heater was re-lit by approximately 8:05 am. However, heater outlet temperatures were slow to respond as the outlet temperature did not exceed 680°F until 11:52 am.

Date	Average Fuel Flow (Mscfh)	Average HHV (Btu/scf)	15-Min Ave Corrected CO (ppm @ 3% O2)	Daily Mass Emissions (lb/day)
11/14/2009	136.38	1,285.77	43.36	134.61 *

*This exceedance of the daily mass emissions does not associated with startups and shutdowns periods.

*The daily mass emissions rate based on total rolling 15min average.

The table below for CO emissions calculations during a 15-min exceedance as an example taken for Nov-14-2009 incident attached in Attachment 3:

Date 11-14-2009 (15min data) from 7:46 am to 8:00am	Fuel gas flow, mscfh	Htr outlet Temp °F	Raw Stack CO, ppm	Daily Average Heating value, HHV,btu/scf	15 Min Avg Raw CO, ppm	15 Min Avg O2 %	15 Min Ave. CO (ppm@3% O2	CO Daily mass, lbs
1	53.449	676.851	1.599					
2	13.728	640.163	12.079					
3	10.708	594.282	25.71					
4	7.39	586.282	23.675					
5	6.623	586.273	17.809					
6	7.927	586.273	7.948					
7	7.107	586.273	4.08					
8	8.666	586.273	2.564					
9	5.717	586.273	1.947					
10	10.023	586.273	1.737					
11	13.39	586.273	1.503					
12	13.382	586.273	1.272					
13	10.609	586.273	1.168					
14	8.279	586.273	1.052					
15	8.561	586.273	0.903					
15-min average	12.3706		7.003067				75.41	21.88399

The total daily emissions on 11/14/2009 was 134.6 lbs/day

The District is proposing a condition to clarify that the 35 ppm CO limit applies only during normal operation of this heater and not during shutdown and startups periods. However, the daily emission rate of 123 lbs/day specified in condition A63.10 shall apply at all times.

PROPOSED NEW CONDITION

A99.17 The 35 ppm CO limit shall not apply to this heater during the following periods:

a) Up to 2 hours during a heater shutdown/startup or,

b) The time that the heater process outlet temperature reading is less than 680 degree F during a heater shutdown/startup.

However, the daily emission rate of 123 lbs/day specified in condition A63.10 shall apply at all times.

For the purposes of this condition, a heater shutdown/startup is defined as when the fuel gas to the heater drops below 15 MSCFH.

Written records of shutdowns and startups shall be maintained and made available upon request from the Executive Officer of his designee

Note: Tesoro requested 15 MSCFH as the cutoff, due to the fact that unfortunately, sometimes orifice meters and transmitters do not show zero when there is no flow, particularly when they are ranged for high flow rates. In reviewing the data, Tesoro found instances where the fuel valve was closed, but the meter still indicated around 12 MSCFH. This is in spite of attempts to re-calibrate and re-zero the meter. On that basis, Tesoro requested 15 MSCFH as the cutoff.

RULE EVLAUATION:

PART 1 SCAQMD REGULATIONS

Rule 212	Standards for Approving Permits November 14, 1997
	In accordance with Rule 219(c), a significant project is a new or modified facility in which: (1) the new or modified permit unit is located within 1000 feet of a school; (2) the new or modified facility has on-site emission increases exceeding the daily maximum specified in subdivision (g); or (3) the new or modified permit unit has an increased cancer risk greater than, or equal to, one in a million ($1x\ 10^{-6}$) during a lifetime of 70 years or pose a risk of nuisance. **This change of condition is not considered a significant project under this rule since the permit unit is not being modified and is:** **(1) are not located within 1,000 feet of a school;** **(2) do not exceed the daily maximum specified in subdivision (g); or** **(3) do not increase the cancer risk greater than, or equal to, one in a million ($1x\ 10^{-6}$).**

Rule 212	Standards for Approving Permits	November 14, 1997
	Therefore, a public notice is not required.	

Rule 401	Visible Emissions	November 9, 2001
	Visible emissions are not expected under normal operating conditions.	

Rule 402	Nuisance	May 7, 1976
	Nuisance complaints associated with the above project are not expected under normal operating conditions.	

Rule 404	Particulate Matter-Concentration	February 7, 1986
	This rule sets forth particulate mater emission standards based on the gas discharge rate. Normally, equipment which fires on gaseous fuel can be meet these standards. This heater is fired on refinery gas only, therefore compliance is expected.	

Rule 407	Liquid and Gaseous Air Contaminants	April 2, 1982
	This rule limits CO emissions to 2,000 ppm, averaged over 15 consecutive minutes. Condition D328.1 is tagged to the heater and a source test performed in July 2009 showed the actual measured CO concentration to be 2.42 ppmv corrected to 3% oxygen, which is well below 2,000 ppm. All the incidents , that the heater exceeded the 35 ppm CO@ 3 % O2 , the heater was well below the 2,000 ppm. Therefore, compliance is expected.	

Rule 409	Combustion Contaminants	August 7, 1981
	This rule limits particulate matter emissions to 0.1 gr/cf of gas, averaged over a minimum of 15 consecutive minutes. Source tests have demonstrated compliance with this limit. Continuous compliance is expected.	
Rule 431.1	**Sulfur Content Of Gaseous Fuels**	**June 12, 1998**
	Tesoro is a SOx RECLAIM facility. In accordance with Rule 2001(j), Rule 431.1 was subsumed by RECLAIM. Therefore, the SOx limits do not apply to this facility.	

Rule 1123	Refinery Process Turnarounds	December 7, 1990
	This process unit is subject to the turnaround requirements of this rule. Tesoro submitted Process Turnarounds Compliance Plan, which has been approved under application A/N 474117. The proposed Rule 1123 compliance plan was issued and the	

	letter to the facility was sent on July 21, 2010. Tesoro currently keeps records of the process unit turnaround and is expected to comply with this rule.

Rule 1146	**Emissions of Oxides of Nitrogen From Industrial, Institutional, And Commercial Boilers, Steam Generators, And Process Heaters**	**September 5, 2008**
	This rule applies to boilers, steam generators, and process heaters of equal to or greater than 5 million Btu per hour rated heat input capacity used in all industrial, institutional, and commercial operations with the exception of: (1) Boilers used by electric utilities to generate electricity; and (2) Boilers and process heaters with a rated heat input capacity greater than 40 million Btu per hour that are used in petroleum refineries; and (3) Sulfur plant reaction boilers.	
	Heater H-1 is rated at 198.98 mmBtu/hr and is therefore not subject to this rule.	

REG XIII	**New Source Review**	**December 6, 2002**
	NSR does apply to this heater for CO. On June 11, 2007, EPA re-designated the South Coast Air Basin (SCAB) as attainment with respect to CO National Ambient Air Quality Standards (NAAQS). Since AQMD was already attainment with State standards and NAAQS for the rest of basin, and CO is not identified as a precursor to any non-attainment pollutants in Regulation XIII, the requirements of Regulation XIII (Rule 1303) do not apply to any new or modified source with a net emission increase in CO. In accordance with Mohsen Nazemi's August 14, 2007 policy memo regarding PSD Delegation, no CO offsets will be required in the form of ERCs and no NSR codes from the Priority Reserve or Rule 1304 exemptions to offset emission increases for CO should be used for all new permits issued for equipment with CO emission increases. However, the policy memo also requires BACTwhen NSR is triggered. There is no emission increases of CO from this change of condition application; therefore, NSR is not triggered. Although there is no increase of CO emissions, below is a summary of the emissions entered in NSR for the previous and current application:	

Table - Heater H-1 NSR CO Emissions

A/N	CO Emissions			
	Hourly, lbs/hr	30-avg, lbs/day	Emission increase, lbs/day	Emissions Offset required lbs/day
349114 (previous application)	5.13	123	71	85*

	509443	5.13	123	---	---

* Tesoro provided 85 lbs/day CO ERCs in 1999 (see attachment 7).

This revision does not affect emissions of other criteria pollutants: therefore NSR is not triggered for other pollutants as well.

Rule 1401	**New Source Review of Toxic Air Contaminants**	**June 5, 2009**
	Rule 1401 should not apply to this change of condition since this rule applies to new, relocated, and modified permit units. Rule 1401(c)(9) defines *modification* as "*any physical change in, change in method of operation, or addition to an existing permit unit that requires an application....*" Therefore, since this change in condition is not a modification according to Rule 1401(c)(9), Rule 1401 does not apply in this case.	

REG XVII	**Prevention of Significant Deterioration (PSD)**	**October 7, 1988**
1701(b)-Applicability	Upon delegation by EPA, this regulation applies to preconstruction review of stationary sources that emit attainment air contaminants. On June 11, 2007, EPA re-designated the South Coast Basin as attainment with respect to CO National Ambient Air Quality Standards (NAAQS). Since the heater emits CO (an attainment air contaminant) and is located in the South Coast Basin, it is subject to PSD review.	
1701(b)(1)	BACT. As noted in the Emissions section, there is no net emission increase in potential to emit (PTE) emissions. As proposed above the higher CO concentration (35 ppm @3% O2) would be allowed only for shutdown and startups operation, the PTE would remain the same. This change of condition does not result in a change in the method of operation during shutdowns and startups. Therefore, BACT does not apply to this change of condition since there no increase in PTE emissions.	
1701(b)(2)	The requirements of this regulation apply to the following stationary sources: (A) Increase in Potential to Emit. The modification proposed at this existing source will not increase the potential to emit greater than 100 tons of CO per year. (B) Significant Emission Increase. Rule 1702(s) defines a significant emission increase of CO as an increase greater than 100 tons per year. The potential emissions does not change, therefore, there is no increase for CO. (C) Class I Area. The refinery is not located within 10 km of a Class I area. Therefore, the requirements of this regulation do not apply to this heater change of condition.	
1701(b)(3)	Major Stationary Source. Since the source does not meet any of the conditions of subparagraph (b)(2), it is not considered a PSD major stationary source.	

REG XVII	**Prevention of Significant Deterioration (PSD)**	**October 7, 1988**
	The CO change of condition will not result in an increase of emissions and therefore will not result in PSD major modification. Therefore, this heater is not subject to PSD permitting requirements. Compliance is expected.	

Rule 2005	**New Source Review for RECLAIM**	**April 20, 2001**
	Since no increase in NOx and SOx emission is expected, these applications are not subject to RECLAIM NSR.	

Regulation XXX	**Title V**	**March 16, 2001**
	Rule 3001(a): Applicability Tesoro Refinery is currently subject to Title V. The permit issued for this heater will be issued as a revision of the Title V permit. Permit revisions are categorized into the following four types: administrative, minor, de minimus significant and significant. As defined in Rule 3000, a minor Title V permit revision is any revision that **does not** include any of the following: 1. relaxation of any monitoring, recordkeeping, or reporting requirement, term, or condition in the Title V permit; 2. the addition of equipment or modification to existing equipment or processes that result in an emission increase of non-RECLAIM pollutants or hazardous air pollutants (HAP) in excess of any of the emission threshold levels ; 3. any modification at a RECLAIM facility that results in an emission increase of RECLAIM pollutants over the facility's starting Allocation plus the nontradeable Allocations; 4. requests for a permit shield when such requests are made outside applications for initial permit or permit renewal issuance; 5. any revision that requires or changes a case-by-case evaluation of: reasonably available control technology (RACT) pursuant to Title I of the federal Clean Air Act; or maximum achievable control technology (MACT) pursuant to 40 CFR Part 63, Subpart B; 6. any revision that results in a violation of regulatory requirements; 7. any revision that establishes or changes a permit condition that the facility assumes to avoid an applicable requirement; 8. installation of new equipment subject to a New Source Performance Standard	

(NSPS) pursuant to 40 CFR Part 60, or a National Emission Standard for Hazardous Air Pollutants (NESHAP) pursuant to 40 CFR Part 61 or 40 CFR Part 63; or,

9. modification or reconstruction of existing equipment, resulting in an emission increase subject to new or additional NSPS requirements pursuant to 40 CFR Part 60, or to new or additional NESHAP requirements pursuant to 40 CFR Part 61 or 40 CFR Part 63.

The Tesoro Los Angeles Refinery has been designated as a Title V facility. The initial Title V permit was issued on November 23, 2009. The proposed change of the permit condition for the subject heater does not meet any of the requirements above; it only clarifies that the CO concentration limit of 35 ppm does not apply during the startup/shutdown periods that was defined on page 4 of this evaluation. Therefore, this Title V permit revision A/N 509444 qualifies as a minor revision, which will be sent to EPA for a 45-day review. Public notice is not required. Afinal copy of the permit will be submitted to the EPA within 5 working days of its issusnce.

Although Tesoro is expected to be placed under order of Abatement for the NOV(P52842) that was issued for HGU-2 unit, this unit has been shutdown since 4-6-2010 and is not expected to operate till a variance or order of abatement is granted. Thus the District, considers this facility to be in compliance with all the permit requirements, and shall recommend the issuance of the subject permit to construct/operate.

PART 2 STATE REGULATIONS

California Environmental Quality Act (CEQA)

According to the District's CEQA guidelines, the thresholds for significant effect are:

NOx	55 pounds per day
ROG	55 pounds per day
PM10	150 pounds per day
CO	550 pounds per day
SOx	150 lbs per day

Based on the emissions shown in Emissions section, this proposed change of condition is not a significant project. Therefore, preparation of a CEQA document is not required.

PART 3 FEDERAL REGULATIONS

Regulation IX: Standards of Performance for New Stationary Sources (NSPS)

Subpart J	Standards of Performance for Petroleum Refineries
§60.100	*Applicability, designation of affected facility, and reconstruction.* Since the heater is a fuel combustion device, the heater is subject to this subpart.
§60.104(a)(1)	*Standards for sulfur oxides.* The operator shall not burn in the heater any fuel gas that contains hydrogen sulfide (H_2S) in excess of 230 mg/dscm (0.10 gr/dscf)*. Tesoro operates two H_2S CEMS on their fuel gas system. A check of the H_2S CEMS data recorded shows the daily average H_2S was well below 160 ppm. Therefore, the refinery complies with this subpart.
§60.105(a)(4)	*Monitoring of emissions and operations.* Tesoro operates two H_2S CEMS on their fuel gas system. The 88-AI-942 CEMS analyzes all treated fuel gas that is normally used within the refinery for heater and boiler fuel gas combustion and other process purposes. The 88-AI-945 CEMS analyzes all treated fuel gas that is normally sent directly to the flare for combustion purposes. Each of these analyzers was installed to demonstrate compliance with 40CFR 60.104(a)(1) and 60.105(a)(4)-Monitoring of emissions and operations.

*160 ppm

Regulation X: National Emission Standards for Hazardous Air Pollutants (NESHAPS)

Subpart DDDDD	**National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters**
	This maximum achievable control technology(MACT) standard was originally promulgated by EPA on September 13,2004 and was vacated and remanded by the US court of Appeals for the District of Columbia Circuit on June 19, 2007. A new rule was proposed on June 4, 2010. The public comment period for the proposed rule ended on August 23, 2010.
§63.7485	*Am I subject to this subpart?* A facility is subject to this subpart if it operates an industrial, commercial, or institutional boiler or process heater as defined in §63.7575 that is located at, or is part of, a major source of HAP as defined in §63.2. §63.7575 defines *Large gaseous fuel subcategory* as "any watertube boiler or process heater that burns gaseous fuels not combined with any solid fuels, burns liquid fuel only during periods of gas curtailment or gas supply emergencies, has a rated capacity of greater than 10 MMBtu per hour heat input, and has an annual capacity factor of greater than 10 percent". Therefore, the heater operated at Tesoro is subject to this subpart.
§63.7490	*What is the affected source of this subpart?* The heater is considered an existing source since it is not new or reconstructed.
§63.7595(b)	*When do I have to comply with this subpart?* Existing units will be required to

comply with the regulation within three years after the final rule is published in the federal register.

The proposed regulation defines eleven (11) subcategories of boilers and process heaters. Emission limits for new and existing boilers and process heaters are specified in Tables 1 and 2 of the proposed regulation. The tables do not contain any emission limits for new or existing boilers or process heaters in the natural gas/refinery gas category. As specified in paragraph no. 3, Determination of the Work Practice Standard, of the proposed regulation, boilers and process heaters in the natural gas/refinery gas subcategory that have a heat input capacity greater than 10 MMBtu/hr would be subject to an annual tune-up. Additionally, all existing boilers would be subject to a one-time energy assessment performed by qualified personnel.

Since the Existing process heaters are not subject to any emission limits, they are also not subject to any of the operating limits, performance testing, or other compliance requirements specified in Tables 4 through 8 of the proposed regulation.

Due to a lack of emission limits, it is not expected that the regulation, as proposed, will have a significant impact on the design of the existing process heater. Based on past compliance with similar regulations, it is expected that Tesoro would comply with this regulation as proposed. No changes to the permit or additional action are required at this time.

CONCLUSION/RECOMMENDATIONS

It is recommended that a Permit to Operate to be issued subject to the following conditions:

A63.10 the operator shall limit emissions from this equipment as follows:

Contaminant	*Emissions Limit*
CO	Less than or equal to 123 lbs per day
PM	Less than or equal to 78 lbs per day
ROG	Less than or equal to 67 lbs per day
SOx	Less than or equal to 88493 lbs in any one year

The operator shall calculate the emission limit(s) of CO based on the AQMD certified continuous monitor pursuant to Rule 218. This monitoring system shall have the capability to show the cumulative daily emissions.

The operator shall calculate the emission limit(s) of SOx by using daily emission data reported to the AQMD pursuant to regulation XX, for any 365-day period to demonstrate exemption from PSD requirements.

[RULE 1303(b)(2)-Offset, 5-10-1996]

[Devices subject to this condition : D9]

A99.17 The 35 ppm CO limit shall not apply to this heater during the following periods:

a) Up to 2 hours during a heater shutdown, OR
b) the time that the heater process outlet temperature reading is less than 680 degree F during a heater shutdown/startup.

However, the daily emission rate of 123 lbs/day specified in condition A63.10 shall apply at all times.

For the purposes of this condition, a heater shutdown/startup is defined as when the fuel gas to the heater drops below 15 MSCFH.

[RULE 1303(b)(2)-Offset, 5-10-1996]

[Devices subject to this condition: D9]

A305.1 Whenever this equipment is in operation, the SCR serving the equipment, C764, is not required to be in operation, but may be operated at any control efficiency provided that the emission concentrations being monitored by the certified CEMS serving this equipment is below the valid upper range specified in the approved CEMS plan.

[RULE 2010, 5-6-2005]

[Devices subject to this condition : D9]

B61.1 the operator shall not use fuel gas containing the following specified compounds:

Compound	ppm by volume
H2S greater than	160

[40CFR 60 Subpart J, 10-4-1991]

[Devices subject to this condition : D9, D32, D89, D90, D112, D216, D810, D812]

D28.3 The operator shall conduct source test(s) in accordance with the following specifications:

The test shall be conducted to confirm the emission limits of this equipment as specified in condition A63.10

The test shall be conducted to determine and report the mass emission rate in pound per hour for NOx, SOx, ROG, CO, total PM, and PM10.

Source test shall be conducted when this equipment is operating at 80 percent or greater of the permitted maximum rated capacity.

The test shall be conducted to confirm the CO emission concentration limit of 35 ppm, corrected to 3 percent oxygen, dry basis.

The test shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up.

The district 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 once every three years for ROG, CO, and PM10 emissions

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2)-Offset, 5-10-1996]

[Devices subject to this condition : D9, D32]

D90.7 The operator shall continuously monitor the H2S concentration in the fuel gases before being burned in this device according to the following specifications:

The operator may monitor the H2S concentration at a single location for fuel combustion devices, if monitoring at this location accurately represents the concentration of H2S in the fuel gas being burned in this device.

The operator shall use gas chromatograph meeting the requirements of 40CFR60 Subpart J to monitor the parameter.

The operator shall also install and maintain a device to continuously record the parameter being monitored.

[40CFR 60 Subpart J, 10-4-1991]

[Devices subject to this condition : D9, D32, D89, D90, D112, D216, D217, D810, D812]

D328.1 The operator shall determine compliance with the CO emission limit(s) either: (a) conducting a source test at least once every five years using AQMD method 100.1 or 10.1; or (b) conducting a test at least annually using a portable analyzer and AQMD-approved test method. The test shall be conducted when the equipment is operating under normal conditions to demonstrate compliance with CO emission limit(s). The operator shall comply with all general testing, reporting, and recordkeeping requirements in sections E and K of this permit.

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997; RULE 404, 2-7-1986; RULE 405, 2-7-1986]

[Devices subject to this condition : ~~D9~~, D32, D89, D90, D216, D217]

Note: CO CEMS is required per condition A63.10; also CO source tests is required every 3 years per condition D28.3; therefore, this condition is not required for D9

H.23.3 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
H2S	40CFR 60 Subpart	J

[40CFR 60 Subpart J, 10-4-1991]

[Devices subject to this condition : D9, D32, D89, D90, D112, D216, D217]

I296.1 This equipment 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.

[**RULE 2005, 5-6-2005**] [Devices subject to this condition : D9, D1617, D1618, D1645, D1646]

Attachments

1.	NOV's and NC's Issued
2.	Exhibits for the dates of CO concentration
3.	Heater configuration
4.	Source Test Report
5	Tesoro petition for variance case no 4982-86
6	A/N 349114 Evaluation
7	CO ERC Certificate