

 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING & COMPLIANCE DIVISION	APPL. NO. 474581	DATE 10/25/12	PAGE 1 of 3
	APPLICATION PROCESSING AND CALCULATIONS	PROCESSED BY J. West	CHECKED BY

RULE 1105.1: REDUCTION OF PM₁₀ AND AMMONIA EMISSIONS FROM FLUID CATALYTIC CRACKING UNITS PLAN

SUMMARY: Evaluation of Rule 1105.1 Reduction of PM₁₀ and Ammonia Emissions from Fluid Catalytic Cracking Units Plan. The Rule 1105.1 Plan was submitted, as required by Rule 1105.1(e)(3)(A) to specify the operating parameters to be monitored, the range of operating levels of each proposed parameter, and the frequency of monitoring and recording for the control equipment of the FCCU installed and operated before November 7, 2003[1105.1(e)(3)(A)].

COMPANY INFORMATION

Company Name: Tesoro Refining and Marketing Company, Facility ID No. 800436
Mailing Address: P.O. Box 817, Wilmington, CA 90748
Equipment Location: 2101 E. Pacific Coast Hwy, Wilmington, CA 90744
Contact Person: Royann Winchester, (310) 522-6125

COMPLIANCE RECORD REVIEW

A query of the AQMD Compliance Database for the past two years (10/1/10 to 10/25/12) identified 9 Notice of Violations (NOV) and 1 Notice to Comply (NC) that were issued to the Tesoro Refinery (Facility ID 800436). The compliance database indicates that the facility is currently in compliance with applicable rules and regulations.

FEE EVALUATION

The BCAT for Rule 1105.1 plans is 666031 [Rule 1105.1 Plan (PM10)], Schedule C. Fees of \$485.45 were paid when the application was submitted. No additional fees are due.

PLAN EVALUATION

The purpose of Rule 1105.1 is to reduce emissions of PM₁₀ and ammonia from fluid catalytic cracking units. Facilities were required to submit a plan for monitoring of the FCCU control equipment installed and operated before November 7, 2003. This plan was to include 1) the operating parameters to be monitored, 2) the range of operating levels of each proposed parameter, and 3) the frequency of monitoring and recording.

Rule 1105.1(e)(3)(C) specifies that the operating parameters and frequency of monitoring and recording shall be selected as specified in Attachment A, unless the operator proposes other appropriate substitute parameters and frequencies for Executive Officer approval. Rule 1105.1 Attachment A (provided below) lists operating parameters for four types of FCCU control devices: Dry (or wet) electrostatic precipitators, wet scrubbers (or wet electrostatic precipitators), SO₂-reducing catalyst additives, and baghouses.

The facility makes use of dry ESPs and SO₂-reducing catalyst additives, and has provided the corresponding information from Attachment A in their plan.

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Rule 1105.1 Attachment A: Operating Parameters and Frequency of Monitoring and Recording¹		
Operating Parameters	Monitoring Frequency	Recording Frequency
Dry (or Wet) Electrostatic Precipitators		
Flue gas inlet temperature to ESP	Continuously ²	Hourly ³
Flue gas flow rate	Continuously ²	Hourly ³
Voltage and current across ESP (or total power input)	Continuously ²	Hourly ³
Ammonia injection rate	Continuously ²	Hourly ³
Wet Scrubbers (or Wet Electrostatic Precipitators)		
Flue gas flow rate	Continuously ²	Hourly ³
Type of scrubbing liquid and average pH	Daily ⁴	Daily ⁴
Scrubbing liquid flow rate	Continuously ²	Hourly ³
SO₂ Reducing Catalyst Additives		
Type of SO ₂ reducing catalyst	Once and when change occurs	Once and when change occurs
Addition rate of SO ₂ reducing catalyst	Daily ⁴	Daily ⁴
Pickup factor (i.e. lbs SO ₂ reduced per lbs of additives)	Once and when change occurs	Once and when change occurs
Baghouses		
Flue gas flow rate	Continuously ²	Hourly ³
Pressure drop	Continuously ²	Hourly ³
Flue gas inlet temperature	Continuously ²	Hourly ³

Note:

1. Monitoring and recording as shown in this attachment shall not be required during periods of routine maintenance and malfunction of monitoring and recording devices.
2. "Continuously Monitoring" means monitoring at least once every 15 minutes.
3. "Hourly Recording" means recording at least one measurement every hour.
4. "Daily Monitoring" and "Daily Recording" means monitoring and recording at least one measurement every day.

COMPARISON OF RULE 1105.1 PLAN SUBMITTAL TO REQUIREMENTS

The Rule 1105.1 plan submitted by the facility, dated October 1, 2007, was compared against the plan requirements. A summary of the plan checklist is provided below in **Table 1**. For each applicable plan requirement, compliance with the plan requirement is assessed via a checkmark in the "yes" or "no" column, and remarks are provided with details from the facility's plan.

Table 1. Checklist for Rule 1105.1 Plan

Rule 1105.1 Plan Requirement [1105.1(e)(3)(A)]	Compliance?		Remarks
	Yes	No	
Specify operating parameters to be monitored	√		As specified in Att A for dry ESP and SO _x -reducing catalyst additives
Specify range of operating levels of each proposed parameter	√		See Table (below)
Specify frequency of monitoring and recording	√		As specified in Attachment A

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Table 1 indicates that the facility has submitted all of the necessary information for the Rule 1105.1 Plan, and is in compliance with the plan requirements.

RECOMMENDATIONS

The Rule 1105.1 Plan submitted by Tesoro has been evaluated and found to comply with the applicable requirements specified in the rule. Approval of this plan, and inclusion in Section I of the facility’s Title V Facility Permit is recommended, subject to the following conditions:

The operating parameters of the control equipment for the FCCU shall be monitored and recorded as follows:

Rule 1105.1 Plan: Operating Parameters and Frequency of Monitoring and Recording¹

Operating Parameters	Range of Operating Levels	Monitoring Frequency	Recording Frequency
Dry Electrostatic Precipitator(s)			
Flue gas inlet temperature to ESP	500 – 710 °F	Continuously ²	Hourly ³
Flue gas flow rate	55,000 – 75,000 scfm	Continuously ²	Hourly ³
Secondary Voltage across ESP	15 – 54 kV	Continuously ²	Hourly ³
Secondary Current across ESP	400 – 1867 amps	Continuously ²	Hourly ³
Number of units in service	2 – 3 units	Once and when change occurs	Once and when change occurs
Number of TR sets in service	7 – 8 sets per unit	Once and when change occurs	Once and when change occurs
Ammonia injection rate	0 – 300 scfh	Continuously ²	Hourly ³
SO₂ Reducing Catalyst Additives			
Type of SO ₂ reducing catalyst	DeSOx	Once and when change occurs	Once and when change occurs
Addition rate of SO ₂ reducing catalyst	0 – 1000 lbs/day	Daily ⁴	Daily ⁴
Pickup factor (i.e. lbs SO ₂ reduced per lbs of additives)	3.5 % wt	Once and when change occurs	Once and when change occurs

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