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		PROCESSED BY: Meredith Hankins	CHECKED BY:

**RULE 1123 (REFINERY PROCESS TURNAROUNDS)
COMPLIANCE PLAN**

COMPANY NAME: Ultramar Inc. Wilmington Refinery

COMPANY ID: 800026

MAILING ADDRESS: 2402 E. Anaheim St
Wilmington, CA 90744

EQUIPMENT LOCATION: 2402 E. Anaheim St
Wilmington, CA 90744

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BACKGROUND:

Ultramar Refinery is subject to Rule 1123 when performing refinery process turnarounds. Rule 1123(b)(1) prohibits venting to the atmosphere of any organic materials unless the vapors are "collected and contained for use as fuel or sent to a gas disposal system until the pressure in the vessel is below five pounds per square inch, gauge, or is within ten percent above the minimum gauge pressure at which the vapors can be collected, whichever is lower."

Rule 1123(b)(2) requires a compliance plan to be submitted to the District for every refinery that uses gas displacement or vacuum eduction to purge vessels during turnaround. The following criteria (at minimum) are required in this plan:

- A) the procedure used for gas displacement or eduction
- B) the disposition of the displaced or educed gases
- C) the stage in the displacement or eduction procedure at which the disposition is changed from a control facility to atmospheric venting
- D) the criteria by which said stage is identifiable.

In other words, the compliance plan requires **at least** a description of the gas displacement/eduction procedures, and explanations of where the gases go following the displacement/eduction, when the vessel is opened to the atmosphere, and how they determine when they can open to the atmosphere.

Rule 1123(c) requires certain records to be kept for two years, but since this is a Title V facility, these records will be kept for five years.

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Table 1 – Fee Summary

A/N	Equipment	Type	Fee Sched.	Fee Paid	Balance Due
423099	Rule 1123 Compliance Plan	25	C	\$399.95	\$0.00*

*Note that Ultramar will be billed for T&M spent on this plan evaluation at the hourly rate specified by District Rule 306 at the time this application was deemed complete.

Table 2 – Relevant Permitting History

Date	Event	Description
12/10/03	Submittal of Application	Ultramar submitted a Rule 1123 Compliance Plan to the AQMD for review and approval.

PLAN EVALUATION:

Table 3 – Checklist for a Rule 1123 Compliance Plan

Requirements	Per Rule 1123 (b) (2)	Compliance?		Remarks
		Yes	No	
The procedure used for gas displacement or eduction	(A)	X		Ultramar submitted a six step procedure used for displacement and eduction of pressure vessels. This procedure is evaluated in more detail below.
The disposition of the displaced or educed gases	(B)	X		Turnaround vapors are sent to the flare gas recovery system. If the capacity of the recovery system is exceeded, then the vapors are directed to the flare.
The stage in the displacement or eduction procedure at which the disposition is changed from a control facility to atmospheric venting	(C)	X		Vapors are vented to the atmosphere after the vessel pressure has initially dropped below 5 psig. Additional purging with inert gases may raise the vessel pressure to above 5 psig during atmospheric venting. Safety and nuisance potential are also taken into consideration before venting to atmosphere.

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Requirements	Per Rule 1123 (b) (2)	Compliance?		Remarks
		Yes	No	
The criteria by which said stage is identifiable.	(D)	X		Vessel pressure is determined locally by pressure gauges or remotely by process control systems. Safety and nuisance concerns are evaluated through additional monitoring (such as laboratory analysis, portable analyzers, or engineering review).

Disposition of the Vapors Released From the Vessel

This six step procedure is followed by all general pressure vessels subject to Rule 1123.

Step 1

First, any hydrocarbon liquids are removed through the refinery Pressurized Drain System (PDS), which is a closed drain system used to collect and store liquids throughout the refinery. Vessels are initially depressured to the flare gas recovery system (FGRS). During turnarounds, the capacity of the FGRS may be exceeded when the vapors increase the pressure in the recovery system above the pressure of the water seal. When this pressure is exceeded, the water seal is broken and the vapors are directed to the flare.

Step 2

The vessels are then purged using steam or nitrogen to further reduce the hydrocarbon concentration. These purge gases are also sent to the FGRS.

Step 3

After purging, the vessels are again depressured to the FGRS to reduce vessel pressure to below 5 psig.

Step 4

Once it is confirmed that the vessel pressure is less than 5 psig, appropriate monitoring personnel are contacted to oversee the atmospheric venting. The vessel vent to atmosphere is opened (for gas displacement), or an eductor/ejector is used to evacuate the vapors to atmosphere (for gas eduction).

Step 5

Hydrocarbon concentrations are measured using a vapor analyzer. The vessel pressure, hydrocarbon concentration, and an estimation of the hydrocarbon emissions are recorded and maintained.

Step 6

Additional purging with steam, nitrogen, or air may occur after the vessel has been opened to the atmosphere in order to ensure that all hydrocarbon vapors are removed from the vessel. Although this additional purging may result in vessel pressures greater than 5 psig, Ultramar does not consider these emissions to be subject to the monitoring requirements of Rule 1123, since "the pressure increase is a result of steam, nitrogen, or air."

This venting above 5 psig is allowed under Rule 1123, as the rule states that atmospheric venting is prohibited "until the pressure in the vessel is below five pounds per square inch, gauge..." The rule does not state that the pressure must remain below 5 psig, only that it must be initially depressured to that level before atmospheric venting may begin. However, there is no exemption from the monitoring/recordkeeping requirements of 1123. Therefore, a condition should be included to ensure that Ultramar monitors these emissions for inclusion in their estimate of the hydrocarbon

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emissions. These emissions are not expected to have significant hydrocarbon concentrations, as the vessels have already been depressurized and purged to the FGRS prior to this final purging in Step 6. Appropriate monitoring will ensure that any emissions from Step 6 of the procedure are reported.

CONCLUSIONS AND RECOMMENDATIONS:

Ultramar's compliance plan for Rule 1123 includes all of the necessary information required by 1123(b)(2). The plan provides for the maximum feasible control of emissions by sending the majority of turnaround vapors to the flare gas recovery system and/or flare. The plan also complies with the flare minimization goals of Rule 1118 (and the "maximum feasible control" mandate set by Rule 1123) by sending turnaround vapors to the FGRS by default, and only sending vapors to the flare when the capacity of the recovery system is exceeded. Although some emissions may result from the final purging in Step 6, a condition will be included to ensure that these emissions are monitored.

As per Rule 1123(b)(3), plans should be approved if they provide for maximum feasible control of emissions of displaced or educed organic gases without causing damage to equipment, malfunction of pollution control or safety devices, or violations of safety regulations. Ultramar's compliance plan dated 12/10/03 meets all of the requirements laid out by 1123(b)(3). Therefore approval of Ultramar's Rule 1123 Refinery Process Turnarounds Compliance Plan is recommended subject to the following conditions:

1. Refinery process turnarounds shall be conducted in accordance with the attached SCAQMD Rule 1123 Vessel Depressuring Plan dated 12/10/03, unless otherwise specified below.
2. During refinery process turnaround, the vapors released from the vessel shall not vent to the atmosphere at any time unless the vessel has been depressurized to below 5 psig, or is within 10 percent above the minimum gauge pressure at which the vapors can be collected, whichever is lower, and has met all the requirements in Condition No. 3 and 4 below.
3. To depressurize vessels pursuant to Condition No. 2, the vapors released from the vessel shall be recovered by the flare gas recovery system (FGR system). The vapors released from the vessels may be directed to a flare provided that all flares have been operated in accordance with flaring minimization procedures pursuant to Rule 1118(c)(3) and (c)(4).
4. If inert gases are used for refinery process turnaround, the operator shall comply with all of the following requirements:
 - (A) Prior to introducing inert gases into the vessel, the operator shall initially depressurize the vessel in accordance to Condition No. 2 and 3.
 - (B) After introducing inert gases into the vessel, the vapors released from the vessel shall be recovered by the FGR system.
 - (C) Condition No. 4B above shall not apply if the facility operator can demonstrate that recovering the vapors would result in: (i) equipment damage due to incompatibility with recovery system equipment or

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with refinery fuel gas systems, (ii) malfunction of pollution control equipment or safety devices, or (iii) violations of safety regulations. The vapors are permitted to be routed to the flare if condition (i), (ii), or (iii) is met and provided that all flares have been operated in accordance with flaring minimization procedures pursuant to Rule 1118(c)(3) and (c)(4).

5. The operator shall keep records of each refinery process unit turnaround, in a manner approved by the AQMD, for the following items:
- The date the unit was shut down.
 - The date, time, vessel pressure, and hydrocarbon concentration measured when the vapors from the vessel were first discharged into the atmosphere.
 - The approximate amount of hydrocarbons emitted into the atmosphere.
 - Records to demonstrate that condition No. 4C is applicable.

The records shall be kept for at least five years and made available for District inspection upon request.