PROPOSED

Significant Modification to a Covered Source
Review Summary

Application File No.:	0088-08 (FCCU Significant Modification) 0088-10 (Heater/Boiler and FCCU Significant Modification)
Permit No.:	0088-01-C
Applicant:	Chevron Products Company
Facility Title:	Petroleum Refinery Located at 91-480 Malakole Street, Kapolei, Oahu
Mailing Address:	Chevron Products Company 91-480 Malakole Street Kapolei, HI 96707
Responsible Official:	Mr. Thomas M. Kovar Refinery Manager Chevron Products Company 91-480 Malakole Street Kapolei, HI 96707 Ph. (808) 682-5711
Point of Contact:	Ms. Helen Mary Wessel Environmental Specialist Chevron Products Company Ph. (808) 682-2282
Application Dates:	FCCU Significant Modification Application dated July 11, 2005 Title V Renewal application supplemental data dated December 14, 2005 FCCU Request Approval for an Alternative SO_x Monitoring Method letter dated December 1, 2005 Heater/Boiler and FCCU Significant Modification Application dated March 27, 2006

Background:

1. The Chevron petroleum refinery in Campbell Industrial Park on Oahu is applying for a Significant Modification to the existing covered source permit (CSP No. 0088-01-C) and is described as follows: As of April 11, 2005, the Fluidized Catalytic Cracking Unit (FCCU) is being regulated by 40 CFR Part 63, Subparts A and UUU. In addition, Chevron has a NSR Consent Decree (No. C 03-04650) that must be complied with that was entered on June 27, 2005. In the NSR Consent Decree, as of April 10, 2005, the FCCU is to be regulated by 40 CFR Part 60, Subparts A and J. These federal regulations have new emission limits and have additional monitoring, testing and recordkeeping requirements

that need to be incorporated into the existing covered source permit. Also, as of January 1, 2006, the Chevron refinery will be subject to 40 CFR Part 80 and 86 which restricts the sulfur content of any gasoline blend produced at the refinery to not exceed 80 ppm or a yearly average of 30 ppm. Chevron will demonstrate compliance with 40 CFR Part 80 and 86 by eliminating high sulfur feed from the fresh feed to the FCCU. Therefore, on January 1, 2006, the sulfur content will be solely represented by the low sulfur feed to the FCCU which, based on data for August 2004 to present has a yearly average sulfur content of 0.10 by weight percent and a maximum 7-day rolling average of 0.208 by weight percent. The data provided demonstrates that the FCCU low sulfur feed content is consistently below the 0.30% by weight mandate of 40 CFR §60.104(b)(3).

The permit modification application fee of $1,000.00 for a significant modification was submitted by the applicant and processed.

2. The second Significant Modification to the existing covered source permit (CSP No. 0088-01-C) is described as follows: In the NSR Consent Decree, as of December 31, 2005, the following heaters and boilers (Boilers F-5201, F-5202 and F-5203; FCC Furnace F-5300; Isomerization Furnaces F-5930 and F-5950; Hydrogen Furnace F-5700; and Hydrogenation Furnace F-5600) are subject to 40 CFR Part 60, Subparts A and J and must meet the 40 CFR §60.104(a)(1) fuel gas hydrogen sulfide (H_2S) limitation of 160 ppm. In addition, the FCC precipitator stack is subject to the 40 CFR §60.104(b)(3) FCC sulfur feed limit of 0.30% by weight.

   The permit modification application fee of $1,000.00 for a significant modification was submitted by the applicant and processed.

Proposed Project:

SICC 2911 (Petroleum Refining)

1. The purpose of the FCCU is to convert material from the crude unit called VGO into gasoline blend components. In addition, the FCCU produces refinery fuel gas, propane and propylene, butane and butylene, light cycle oil and fractionator bottoms.

   The conversion of the VGO to higher valued products is accomplished by cracking the heavier hydrocarbon molecules into lighter molecules by contacting the VGO with an air assisted circulating catalyst at relatively high temperature (950 - 990 deg F). The process of cracking the molecules results in the formation of coke on the catalyst. This coke inhibits the process so it is burned off to restore catalyst activity. The heat of combustion of the coke is a major source of heat needed to maintain reaction temperature.

   The FCCU will operate continuously (i.e., 24 hrs per day, 7 days a week, 52 weeks per year). The maximum capacity of the FCCU will be limited to 22,000 barrels of vacuum gas oil (VGO) per day averaged over a rolling 365-day period.

   For the FCCU, the following new requirements per the NSPS, MACT and the CD apply:

PROPOSED

Requirement	40 CFR Part 63 Subparts A and UUU (MACT II)	40 CFR Part 60 Subparts A and J (NSPS)	NSR Consent Decree	Hawaii Administrative Rules (HAR)	40 CFR Part 80 and 86
PM Emission Limits	1 lb of PM /1000 lb of coke burned (do not apply during planned maintenance if pre-approved)	1 lb of PM /1000 lb of coke burned	1lb of PM /1000 lb of coke burned (3-hr avg). PM emissions during periods of Startup, Shutdown or Malfunction shall not be used in determining compliance with this emission limit provided that during such periods good air pollution control practices to minimize PM emissions are implemented.		
CO Emission Limits	500 ppm	500 ppm, 1 hr average	500 ppm corrected to 0% O_2, 365 day rolling average. CO emissions during periods of Startup, Shutdown or Malfunction shall not be used in determining compliance with this emission limit provided that during such periods good air pollution control practices to minimize CO emissions are implemented.		
Sulfur Limits		Sulfur limit of feed - 0.30% by weight			Sulfur limit in gasoline of 80 ppm, 30 ppm (yearly average)
Opacity Limits	Opacity limits < 30%, per 6 min average, except that one 6 min average during a 60 minute period can exceed 30%	Opacity limits < 30%, per 6 min average, except that one 6 min average during a 60 minute period can exceed 30%	Opacity limits < 30%, per 6 min average, except that one 6 min average during a 60 minute can exceed 30%	Opacity limits < 20%, per 6 min average, except that one 6 min average during a 60 minute period can exceed 20% but less than 60%	
Monitoring	CO CEM COMS Coke burn-off rate	CO CEM COMS Coke burn-off rate	CO CEM COMS		
RATA Testing Cylinder Gas Audits (CGA)	Annual Quarterly (unless RATA done)	Annual Quarterly (unless RATA done)	Every 3 years Quarterly (unless RATA done)		
Source Performance Testing	Initial, annual	Initial, annual	Initial not required, annual		
Reporting	Semi-annual compliance	Semi-annual compliance	Semi-annual compliance after date of entry		

2. For the heaters and boilers (Boilers F-5201, F-5202 and F-5203; FCC Furnace F-5300; Isomerization Furnaces F-5930 and F-5950; Hydrogen Furnace F-5700; and Hydrogenation Furnace F-5600), the following new requirements per the NSPS apply:

Requirement	40 CFR Part 60 Subparts A and J (NSPS)
RFG H_2S Limit	230 mg/dscm (160 ppmv)
Monitoring	H_2S CEMS
RATA Testing Cylinder Gas Audits (CGA)	Annual Quarterly (unless RATA done)
Reporting	Semi-annual reporting of excess emissions

Equipment Description:

Fluidized Catalytic Cracking Unit (FCCU)
Maximum VGO feed rate - 22,000 bbls/day*
Maximum VGO sulfur content - 0.30% by weight**

* Based on a rolling 365-day average
** Based on a rolling 7-day average, applicable at all times, including periods of startup, shutdown, and malfunctions

Air Pollution Control Equipment:

The flue gas exiting the FCCU is entrained with catalyst particles. This flue gas is routed through cyclones and an electrostatic precipitator (ESP) to remove particulate matter.

Applicable Requirements:

Hawaii Administrative Rules (HAR)

Title 11, Chapter 59	Ambient Air Quality Standards
Title 11, Chapter 60.1	Air Pollution Control
Subchapter 1	General Requirements
Subchapter 2	General Prohibition
HAR 11-60.1-31	Applicability
HAR 11-60.1-32	Visible Emissions
HAR 11-60.1-33	Fugitive Dust
HAR 11-60.1-37	Process Industries
HAR 11-60.1-38	Sulfur Oxides from Fuel Combustion
Subchapter 5	Covered Sources
Subchapter 6	Fees for Covered Sources, Noncovered Sources, and Agricultural Burning
HAR 11-60.1-111	Definitions

HAR 11-60.1-112	General Fee Provisions for Covered Sources
HAR 11-60.1-113	Application Fees for Covered Sources
HAR 11-60.1-114	Annual Fees for Covered Sources
HAR 11-60.1-115	Basis of Annual Fees for Covered Sources
Subchapter 8	Standards of Performance for Stationary Sources
Subchapter 9	Hazardous Air Pollutant Sources
HAR 11.60.1-174	Maximum Achievable Control Technology (MACT) Emission Standards
Subchapter 10	Field Citations

Federal Requirements

40 CFR Part 60 - Standards of Performance for New Stationary Sources (NSPS)
Subpart A - General Provisions
Subpart J - Standards of Performance for Petroleum Refineries

40 CFR Part 63 - National Emission Standards for Hazardous Air Pollutants for Source Categories (Maximum Achievable Control Technologies (MACT) Standards)
Subpart A - General Provisions
Subpart UUU (MACT II) - National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units

Non-Applicable Requirements:

Hawaii Administrative Rules (HAR)

Title 11, Chapter 60.1	Air Pollution Control
Subchapter 7	Prevention of Significant Deterioration

Federal Requirements
40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants (NESHAPS)

New Source Performance Standards (NSPS):

Per the NSR Consent Decree, as of April 10, 2005, the FCCU is subject to NSPS Subpart J. Also per the NSR Consent Decree, as of December 31, 2005, the following heaters and boilers (Boilers F-5201, F-5202 and F-5203; FCC Furnace F-5300; Isomerization Furnaces F-5930 and F-5950; Hydrogen Furnace F-5700; and Hydrogenation Furnace F-5600) are subject to NSPS Subpart J and must meet the 40 CFR §60.104(a)(1) fuel gas hydrogen sulfide (H_2S) limitation of 160 ppm. In addition, the FCC precipitator stack is subject to the 40 CFR §60.104(b)(3) FCC sulfur feed limit of 0.30% by weight.

Best Available Control Technology (BACT):

A Best Available Control Technology (BACT) analysis is required for new covered sources or significant modifications to covered sources that have the potential to cause a net increase in air pollutant emissions above significant levels as defined in HAR §11-60.1-1. For these significant

modifications, there are no net emissions increases above the significant levels to trigger a BACT analysis for these applications.

Prevention of Significant Deterioration (PSD):

These modification are not subject to PSD review as these modifications do not increase emissions.

Consolidated Emissions Reporting Rule (CERR):

40 CFR Part 51, Subpart A - Emission Inventory Reporting Requirements, determines CER based on the emissions of criteria air pollutants from Type A and B point sources (as defined in 40 CFR Part 51, Subpart A), that emit at the CER triggering levels as shown in the table below:

Pollutant	Type A CER Triggering Levels [1,2] (tpy)	Type B CER Triggering Levels [1] (tpy)	Pollutant	In-house Total Facility Triggering Levels [3] (tpy)
NO_x	≥2500	≥100	NO_x	≥25
SO_2	≥2500	≥100	SO_2	≥25
CO	≥2500	≥1000	CO	≥250
$PM_{10}/PM_{2.5}$	≥250/250	≥100/100	PM/PM_{10}	≥25/25
VOC	≥250	≥100	VOC	≥25
Pb		≥5	Pb	≥5
			HAPS	≥5

[1] Based on actual emissions
[2] Type A sources are a subset of Type B sources and are the larger emitting sources by pollutant
[3] Based on potential emissions

The Chevron Hawaii Refinery exceeds the Type A CER triggering levels. Therefore, CER requirements are applicable.

The Clean Air Branch also requests annual emissions reporting from those facilities that have facility-wide emissions of a single air pollutant exceeding in-house triggering levels. The emissions from the Chevron Hawaii Refinery exceed the in-house triggering levels and thus annual emissions reporting is required for in-house recordkeeping purposes.

Compliance Assurance Monitoring (CAM):

No change from Covered Source Permit No. 0088-01-C.

Synthetic Minor Source:

No change from Covered Source Permit No. 0088-01-C.

Insignificant Activities:

No change from Covered Source Permit No. 0088-01-C.

Alternate Operating Scenarios:

No change from Covered Source Permit No. 0088-01-C.

Project Emissions:

Potential Emissions from FCCU

Pollutant	Potential Emission Rate (lb/hr)	Potential Emission Rate (tpy)
SO_2	150.63	659.75
NO_x	65.08	285.07
CO	114.6	502.0
PM_{10}	25.1	110.0
VOC	1.71	7.50
Lead	0.0013	0.0055

Notes:
1. Maximum total VGO feed rate = 22,000 bbl of feed/day
2. SO_2 = 0.30% S * 306 lb of feed/bbl of feed * 22,000 bbl of feed/day * 8.95% lb of coke/lb of feed * 64/32 * day/24 hr * 8760 hr/yr * ton/2000 lb = 659.75 tpy
3. CO = 500 ppm * 28 lb/lb-mol * 52,579 scfm * 1.557 E-07 (lb-mol/ft^3)(min/hr) * 8760 hr/yr * ton/2000 lb = 502 tpy
4. VOC emission based on 1.71 lb/hr from averaging 1996 and 1999 source test results
   VOC = 1.71 lb/hr * 8760 hrs/yr * ton/2000 lb = 7.50 tpy
5. NO_x emission factor from AP-42, Table 5.1-1, (1/95), FCC with ESP
   NO_x = 71 lb NO_x/1000 bbl of feed * 22,000 bbl of feed/day * day/24 hr * 8760 hr/yr * ton/2000 lb = 285.07 tpy
6. PM emission rate = 1 lb PM/1000 lb of coke * 306 lb of feed/bbl of feed * 22,000 bbl of feed/day * 8.95% lb of coke/lb of feed * day/24 hr * 8760 hr/yr * ton/2000 lb = 110.0 tpy

Hazardous Air Pollutants

Pollutant	PM_{10} (lb/hr)	(% by wt.) [1]	Potential Emission Rate (lb/hr)	Potential Emission Rate (tpy)
Nickel	12.5	0.017	0.0021	0.009
Selenium	12.5	0.003	0.0004	0.002
Cadmium	12.5	0.002	0.0003	0.001
Antimony	12.5	0.002	0.0003	0.001
Mercury	12.5	0.001	0.0001	0.001

Formaldehyde	n/a	n/a	0.20324 [2]	0.9 [3]
HAPS				0.914

[1] % by wt. From Air Emissions Species Manual, Volume II, Particulate Matter Species Profiles, Second Edition, pg. 257. Nickel % by wt. from actual data.
[2] lb/hr = 8.223E-05 x 58000 dscfm x 30 MW x 0.75 / 528 °R = 0.20324 lb/hr
[3] tpy = 0.20324 lb/hr x 8760 hrs/yr / 2000 lb/ton = 0.9 tpy

Air Quality Assessment:

An ambient air quality impact analysis (AAQIA) is required for significant modifications which increase the emissions of any air pollutant or result in the emission of any air pollutant not previously emitted. As these were not applicable for these significant modifications, an ambient air quality impact analysis is not required.

Significant Permit Conditions:

1. The significant modification for the FCCU includes new requirements from 40 CFR Part 63, Subpart UUU (Refinery MACT II), 40 CFR Part 60, Subpart J, 40 CFR Parts 80 and 86 and the NSR Consent Decree. These additional operational limitations, monitoring, testing, recordkeeping and reporting requirements were added to Attachment II(I) of the existing covered source permit.

   The following are some of the changes to the existing covered source permit:

   A. *Permit Condition:* Attachment II(I), Special Condition No. C.5

      The vacuum gas oil (VGO) processed by the FCCU shall not exceed the following feed rate and sulfur content limit:

      a. A maximum VGO feed rate of 22,000 bbls/day*;
      b. A maximum sulfur content of VGO of 0.30% by weight**.

      * Based on a rolling 365-day average
      ** Based on a rolling 7-day average, applicable at all times, including periods of startup, shutdown, and malfunctions

      Reason:

      Per 40 CFR Parts 80 and 86, the sulfur content of any gasoline blend produced at the refinery is not to exceed 80 ppm or a yearly average of 30 ppm. Chevron will demonstrate compliance with 40 CFR Part 80 and 86 by eliminating high sulfur feed from the fresh feed to the FCCU. Therefore, the sulfur content will be solely represented by the low sulfur feed to the FCCU. Any reference to high sulfur VGO and low sulfur VGO is being eliminated and replaced with VGO at 22,000 bbls/day. 40 CFR §60.104(b)(3) limits the VGO being processed by the FCCU to a maximum sulfur content of 0.30% by weight. Per 40 CFR §60.108(b), the

standard in 40 CFR §60.104(b)(3) is applicable at all times, including periods of startup, shutdown, and malfunctions.

B. *Permit Condition:* Attachment II(I), Special Condition No. C.6

Emission Limits

The permittee shall not discharge or cause the discharge from the FCCU emissions in excess of the following:

a. PM Emission Limit: 1.0 pounds of PM per 1000 pounds (1.0 kg/Mg or 2.0 lb/ton) of coke burn-off in the catalyst regenerator (3-hr average).

b. CO Emission Limit: 500 ppmvd @ 0% O_2 (1-hr average).

Reason:

Per 40 CFR §60.102 and 40 CFR §60.103, the respective standards for particulate matter and carbon monoxide are applicable to the FCCU.

C. *Permit Condition:* Attachment II(I), Special Condition No. C.8

Operation, Maintenance, and Monitoring Plan

The permittee must prepare and implement an operation, maintenance, and monitoring plan for the FCCU, air pollution control system and continuous monitoring system. The purpose of this plan is to detail the operation, maintenance, and monitoring procedures to follow.

Reason:

Per 40 CFR §63.1574, an operation, maintenance and monitoring plan must be submitted for the FCCU, air pollution control system and continuous monitoring system.

D. *Permit Condition:* Attachment II(I), Special Condition No. C.9

Startup, Shutdown, and Maintenance Plan (SSMP)

a. The permittee shall develop and implement a written startup, shutdown, and malfunction plan (SSMP) according to the provisions in 40 CFR §63.6(e)(3).

b. During periods of startup, shutdown, and malfunction, the permittee must operate in accordance with the SSMP.

c. The permittee must report each instance in which each emission limitation

and each operating limitation was not met. This includes periods of startup, shutdown, and malfunction. The permittee shall also report each instance in which the work practice standards were not met. These instances are deviations from the emission limitations and work practices. These deviations must be reported according to the requirements in 40 CFR §63.1575.

d. Consistent with 40 CFR §63.6(e) and 40 CFR §63.7(e)(1), deviations that occur during a period of startup, shutdown, or malfunction are not violations if you can demonstrate to the Department of Health's satisfaction that you were operating in accordance with 40 CFR §63.6(e)(1). The SSMP must also include elements designed to minimize the frequency of such periods (i.e., root cause analysis). The Department of Health will determine whether deviations that occur during a period of startup, shutdown, or malfunction are violations, according to the provisions in 40 CFR §63.6(e).

Reason:

Per 40 CFR §63.1570, a startup, shutdown and malfunction plan (SSMP) must be submitted for the FCCU and operate in accordance with the SSMP.

E. *Permit Condition:* Attachment II(I), Special Condition No. D.2

Vacuum Gas Oil (VGO)

a. The permittee shall monitor the feed rates (in barrels per day) of the VGO processed by the FCCU. Records shall be kept on a **rolling 365-day average basis**.

b. Compliance with the maximum sulfur content limit for the fresh feed (VGO) is determined daily on a **rolling 7-day average basis** using the following analytical methods and calculation procedures outlined below:

i. One fresh feed sample shall be collected once per 8-hour period.
ii. Fresh feed samples shall be analyzed separately by using any one of the following applicable analytical test methods:

ASTM D129-64, 78,or 95, ASTM D1552-83 or 95, ASTM D2622-87, 94 or 98, or ASTM D1266-87, 91, or 98. (These methods are incorporated by reference: see 40 CFR §60.17.) The applicable range of some of these ASTM methods is not adequate to measure the levels of sulfur in some fresh feed samples. Dilution of samples prior to analysis with verification of the dilution ratio is acceptable upon prior approval of the Department of Health.

Reason:

Monitoring of the VGO is required for the feed rate and maximum sulfur content (40 CFR §60.106).

F. *Permit Condition:* Attachment II(I), Special Condition No. D.4

Continuous Emissions Monitoring System (CEMS) for CO

a. The permittee shall install, operate and maintain a continuous emissions monitoring system (CEMS) for continuously monitoring and recording the concentration by volume (dry basis) of CO emissions from the FCCU.

b. The CEMS shall meet the following requirements:

i. The span value for the CEMS is 1,000 ppm CO.

ii. Performance evaluations for the CO CEMS shall be accordance with 40 CFR §60.13 and §63.8. The CO CEMS shall meet 40 CFR Part 60, Appendix B, Performance Specification 4, Specifications and test procedures for carbon monoxide continuous emission monitoring systems in stationary sources; and Appendix F, Quality Assurance Procedures. 40 CFR Part 60, Appendix A, Method 10 shall be used in conducting any relative accuracy test audit (RATA).

iii. Cylinder Gas Audits (CGA) shall be conducted in accordance with 40 CFR Part 60, Appendix F, Section 5.1.2.

iv. Calibration Drift (CD) assessments shall be performed on a daily basis pursuant to 40 CFR Part 60, Appendix F, Section 4.1.

Reason:

Per 40 CFR §60.105 and 40 CFR §63.1572, a CO continuous emissions monitoring system is required for the FCCU.

G. *Permit Condition:* Attachment II(I), Special Condition No. D.6

Continuous Opacity Monitoring System (COMS) for Opacity

The permittee shall install, operate and maintain a continuous opacity monitoring system (COMS) for continuously measuring and recording the opacity levels of stack emissions of the FCCU. The system shall meet U.S. EPA monitoring performance standards (40 CFR §60.13 and 40 CFR Part 60, Appendix B, Performance Specification 1, Specifications and test procedures for opacity continuous emission monitoring systems in stationary sources). The instrument shall be spanned at 60, 70, or 80 percent opacity. As specified in 40 CFR §63.8(c)(4)(I), each continuous opacity monitoring system must complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.

Reason:

Per 40 CFR §60.105 and 40 CFR §63.1572, a continuous opacity monitoring system is required for the FCCU.

H. *Permit Condition:* Attachment II(I), Special Condition No. E.5.g.

Compliance Report

Reason:

Per 40 CFR §63.1575, a compliance report is required for the FCCU.

I. *Permit Condition:* Attachment II(I), Special Condition No. E.5.h.

Excess Emissions Report

The permittee shall submit an excess emissions and monitoring systems performance report pursuant to 40 CFR §60.7(c) to the Department of Health every semiannual calendar period.

Reason:

Per 40 CFR §60.105, an excess emissions report is required for the FCCU.

J. *Permit Condition:* Attachment II(I), Special Condition No. F.1

The permittee shall conduct or cause to be conducted annual performance tests for the FCCU, except for the opacity testing specified in Attachment II(I), Special Condition No. E.3.d, which is only required to be conducted initially. Performance test shall be conducted for carbon monoxide (CO) and particulate matter (PM). All performance tests shall be conducted at the maximum production rate of the FCCU and at the maximum VGO feed rate, or at other production rate as may be specified by the Department of Health.

Reason:

Per 40 CFR §60.106, performance testing for CO and PM is required for the FCCU. Only initial opacity testing is required for the FCCU, no annual testing is required, since there is a continuous opacity monitoring system.

2. The significant modification for the heaters and boilers (Boilers F-5201, F-5202 and F-5203; FCC Furnace F-5300; Isomerization Furnaces F-5930 and F-5950; Hydrogen Furnace F-5700; and Hydrogenation Furnace F-5600) includes new requirements from 40 CFR Part 60, Subpart J. These additional operational limitations, monitoring, testing, recordkeeping and reporting requirements were added to the Attachment II(H),

Attachment (I), and Attachment (J) of the existing covered source permit.

The following are some of the changes to the existing covered source permit:

A. *Permit Condition:* Attachment II(H), Special Condition No. C.1

The boilers shall be fired only on low sulfur fuel oil (LSFO) with a maximum sulfur content not to exceed 0.5% by weight or refinery fuel gas (RFG) with a hydrogen sulfide (H_2S) content not to exceed 230 mg/dscm (160 ppmv).

B. *Permit Condition:* Attachment II(I), Special Condition No. C.1

The F-5300 furnace shall be fired only on refinery fuel gas (RFG) with a hydrogen sulfide (H_2S) content not to exceed 230 mg/dscm (160 ppmv).

C. *Permit Condition:* Attachment II(J), Special Condition No. C.1

Process Unit furnaces F-5600, F-5700, F-5930, and F-5950 shall be fired only on refinery fuel gas (RFG) with a hydrogen sulfide (H_2S) content not to exceed 230 mg/dscm (160 ppmv).

Reason:

Per 40 CFR §60.104(a)(1), the refinery fuel gas (RFG) must meet the H_2S limitation of 160 ppmv. This replaced the maximum sulfur content limitation of 2.0% by weight.

D. *Permit Condition:* Attachment II(H), Special Condition No. D.3; Attachment II (I), Special Condition No. D.5; Attachment II(J), Special Condition No. D.2

Continuous Emissions Monitoring System (CEMS) for H_2S

a. The permittee shall operate and maintain a continuous emissions monitoring system (CEMS) for continuously monitoring and recording the concentration (dry basis) of H_2S in the RFG before being burned.

b. The CEMS shall meet the following requirements:

i. The span value for the CEMS is 425 mg/dscm (300 ppmv) H_2S.

ii. All fuel gas combustion devices having a common source of fuel gas may be monitored at one location, if monitoring at this location accurately represents the concentration of H_2S in the RFG being burned.

iii. Performance evaluations for the H_2S CEMS shall be in accordance with 40 CFR §60.13. The H_2S CEMS shall meet 40 CFR Part 60,

Appendix B, Performance Specification 7, Specifications and Test Procedures for Hydrogen Sulfide Continuous Emissions Monitoring Systems in Stationary Sources; and Appendix F, Quality Assurance Procedures. 40 CFR Part 60, Appendix A, Method 11, 15, 15A, or 16, shall be used in conducting any relative accuracy test audit (RATA).

iv. Cylinder Gas Audits (CGA) shall be conducted in accordance with 40 CFR Part 60, Appendix F, Section 5.1.2.

v. Calibration Drift (CD) assessments shall be performed on a daily basis pursuant to 40 CFR Part 60, Appendix F, Section 4.1.

Reason:

Per 40 CFR §60.105, a H_2S continuous emissions monitoring system is required to measure the H_2S concentration before being burned.

E. *Permit Condition:* Attachment II(H), Special Condition No. E.6; Attachment II(J), Special Condition No. E.6

Excess Emissions Report

The permittee shall submit an excess emissions and monitoring systems performance report pursuant to 40 CFR §60.7(c) to the Department of Health every semiannual calendar period.

Reason:

Per 40 CFR §60.105, an excess emissions report is required for the concentration of H_2S in the RFG.

Conclusion and Recommendations:

Recommend issuance of the two significant modifications to existing Covered Source Permit No. 0088-01-C based on the additional federal permit requirements from MACT Subpart UUU, NSPS Subpart J, and the NSR Consent Decree shown above. A 30-day public comment period and 45-day EPA review period are also required.

Reviewer: Darin Lum
Date: 3/07