

217/782-2113

TITLE V - CLEAN AIR ACT PERMIT PROGRAM (CAAPP) PERMIT
and
TITLE I PERMIT¹

PERMITTEE

Marathon Ashland Petroleum, LLC
Attn: Alan Mayo
100 Marathon Avenue
Robinson, Illinois 62454

Application No.: 96010007

I.D. No.: 033808AAB

Applicant's Designation:

Date Received: January 5, 1996

Operation of: Petroleum Refinery

Date Issued: November 24, 2003

Expiration Date²: November 24, 2008

Source Location: 100 Marathon Avenue, Robinson, Crawford County

Responsible Official: John Swearingen, Division Manager

This permit is hereby granted to the above-designated Permittee to OPERATE a petroleum refinery, pursuant to the above referenced permit application. This permit is subject to the conditions contained herein.

If you have any questions concerning this permit, please contact Dan Punzak at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:DGP:psj

cc: Illinois EPA, FOS, Region 3
CES
Lotus Notes

1 This permit may contain terms and conditions which address the applicability, and compliance if determined applicable, of Title I of the CAA and regulations promulgated thereunder, including 40 CFR 52.21 - federal PSD and 35 IAC Part 203 - Major Stationary Sources Construction and Modification. Any such terms and conditions are identified within this permit.

2 Except as provided in Condition 8.7 of this permit.

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1.0 SOURCE IDENTIFICATION

1.1 Source

Marathon Ashland Petroleum LLC
100 Marathon Avenue
Robinson, Illinois 62454
618/544-2121 Ext. 5434

I.D. No.: 033808AAB
Standard Industrial Classification: 2911, Petroleum Refinery

1.2 Owner/Parent Company

Marathon Ashland Petroleum LLC
539 South Main Street
Findlay, Ohio 45840

1.3 Operator

Marathon Ashland Petroleum LLC
539 South Main Street
Findlay, Ohio 45840

Gail Sandiford, ES & S Manager
618/544-2121 Ext. 5434

1.4 General Source Description

The Marathon Ashland Petroleum LLC (MAP) Robinson, Illinois refinery is a complex, integrated petroleum refinery which produces petroleum-based fuel products to meet consumer demands in this region. The refinery produces numerous product including gasoline, diesel fuel, jet fuel, LPG, petroleum coke, and sulfur.

The refinery uses crude oil as its major raw material. The crude is delivered by pipeline to the refinery. The crude is first heated and fractionated in distillation columns to separate it into its various natural petroleum fractions or products. Some of these products can be marketed after this first step; however, more useful products can be manufactured by further processing in other refinery process units. Hydrocarbon molecules that are too large (i.e., long-chain hydrocarbons) to be used as high value fuels are further processed in cracking or conversion units such as the Cokers, Fluid Catalytic Cracking Unit, or Unicracker. Molecules that are too small can be used in the refinery's heaters as a fuel gas or can be recombined with other molecules to make liquid fuels in units such as the HF Alkylation Unit. Other process units at the refinery perform functions such as removing contaminants from intermediate or product streams, increasing fuel octane value, or blending products to customer specifications.

For the most part, processing equipment at the refinery is pressurized, fully enclosed equipment such as heat exchangers and distillation towers. The only source of emissions from those equipment are fugitive emissions from valves, flanges, pumps, and connectors. The major sources of emissions at the facility are primarily storage tanks (over 100 large hydrocarbon storage tanks) used to store the raw materials, intermediate products, and finished products and combustion devices (approximately 40 heaters and boilers) which provide heat for the petroleum separation and conversion processes.

2.0 LIST OF ABBREVIATIONS/ACRONYMS USED IN THIS PERMIT

Act	Illinois Environmental Protection Act [415 ILCS 5/1 et seq.]
AP-42	Compilation of Air Pollutant Emission Factors, Volume 1, Stationary Point and Other Sources (and Supplements A through F), USEPA, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711
Btu	British thermal unit
CAA	Clean Air Act [42 U.S.C. Section 7401 et seq.]
CAAPP	Clean Air Act Permit Program
CAM	Compliance Assurance Monitoring
CCUs	Catalytic Cracking Units
CFR	Code of Federal Regulations
CO	Carbon Monoxide
FCCU	Fluid Catalytic Cracking Unit
FGSS	Flue Gas Scrubber System
HAP	Hazardous Air Pollutant
HHV	Higher Heating Value
hr	hour
H ₂ S	Hydrogen Sulfide
IAC	Illinois Administrative Code
I.D. No.	Identification Number of Source, assigned by Illinois EPA
ILCS	Illinois Compiled Statutes
Illinois EPA	Illinois Environmental Protection Agency
kW	kilowatts
lb	pound
LHV	Lower Heating Value
LNAPL	Light Non-Aqueous-Phase Liquid
LPG	Liquefied Petroleum Gas
LTTD	Low Temperature Thermal Desorption
MACT	Maximum Achievable Control Technology
mmBtu	Million British thermal units
N/A	Not Applicable
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO _x	Nitrogen Oxides
NSPS	New Source Performance Standards
O ₂	Oxygen
OM&M	Operation, Maintenance and Monitoring (Plan)
PM	Particulate Matter
PM ₁₀	Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 microns as measured by applicable test or monitoring methods
ppm	parts per million
ppm _v	parts per million by volume
ppmvd	Parts per million by volume dry (basis)
PSD	Prevention of Significant Deterioration
psig	pounds per square inch gauge
PTU	Purge Treatment Unit
RAA	Relative Accuracy Audit
RATA	Relative Accuracy Test Audit
RMP	Risk Management Plan

SCOT	Shell Claus Offgas Treatment
SCR	Selective Catalytic Reduction
SO ₂	Sulfur Dioxide
SRU	Sulfur Recovery Unit
SSM	Startup, Shutdown and Malfunction (Plan)
TGTU	Tail Gas Treating Unit
T1	Title I - identifies Title I conditions that have been carried over from an existing permit
T1N	Title I New - identifies Title I conditions that are being established in this permit
T1R	Title I Revised - identifies Title I conditions that have been carried over from an existing permit and subsequently revised in this permit
USEPA	United States Environmental Protection Agency
VOM	Volatile Organic Material
WWTP	Waste Water Treatment Plant

3.0 INSIGNIFICANT ACTIVITIES

3.1 Identification of Insignificant Activities

The following activities at the source constitute insignificant activities as specified in 35 IAC 201.210:

- 3.1.1 Activities determined by the Illinois EPA to be insignificant activities, pursuant to 35 IAC 201.210(a)(1) and 201.211, as follows:

Miscellaneous Process Chemical Tanks
Petroleum Coke Loading into Railcars and Drums
Loading of Low or Non-Volatile Liquids into Railcars
or Trucks
Neutralizing Basin
Water Tanks with Very Low VOM Content
Lime and Caustic Tanks
Coke Drum Deheading
Decoking Heater Passes
Feed Strainers and Filter Cartridge Cleaning
FCCU Catalyst Loading and Unloading with Material
Recovery Cyclone
Vacuum Trucks, Frac Tanks and Rolloff Boxes
Wastewater Activated Carbon Vessel
Miscellaneous Small Fuel Tanks for Internal
Combustion Engines (Less than 500 Gallons
Each)
Gasoline Storage Tank 24D-0001
DNF Float Tanks 79D-0130A and 79D-0130B
WWTP Skimmed Oil Tanks 79D-0131A and 79D-0131B

- 3.1.2 Activities that are insignificant activities based upon maximum emissions, pursuant to 35 IAC 201.210(a)(2) or (a)(3), as follows:

The following miscellaneous tanks that do not meet the criteria of 35 IAC 201.210(a)(10), (11) or (17) below in Condition 3.1.3:

01D-0039, 03D-0009, 03D-0012, 04D-0051, 11D-0002,
11D-0022, 12D-0001, 16D-0002, 16D-0003, 16D-0017,
16D-0018, 21D-0050, 21D-0061, 21D-0063, 21D-0366,
21D-0367, 24D-0003, 24D-0007, 59D-0044, 59D-0073,
60D-0101, 60D-0105, 60D-0106, 60D-0107, 60D-0108A,
60D-0108B, 60D-0108C, 60D-0109, 66D-0001, 66D-0002,
69D-0022, 73D-0003, 77D-0001, 79C-0003, 79D-0007,
79D-0042, 79D-0043, 79D-0044, 79D-0061, 79D-0062,
79D-0064A, 79D-0064B, 79D-0065, 79D-0071, 79D-0080,
79D-0128, 82D-0071, 82D-0103, 82D-0104, 82D-0105,
90D-0011, 90D-0013, 90D-0014

3.1.3 Activities that are insignificant activities based upon their type or character, pursuant to 35 IAC 201.210(a) (4) through (18), as follows:

Direct combustion units designed and used for comfort heating purposes and fuel combustion emission units as follows: (A) Units with a rated heat input capacity of less than 2.5 mmBtu/hr that fire only natural gas, propane, or liquefied petroleum gas; (B) Units with a rated heat input capacity of less than 1.0 mmBtu/hr that fire only oil or oil in combination with only natural gas, propane, or liquefied petroleum gas; and (C) Units with a rated heat input capacity of less than 200,000 Btu/hr which never burn refuse or treated or chemically contaminated wood [35 IAC 201.210(a) (4)].

Storage tanks of organic liquids with a capacity of less than 10,000 gallons and an annual throughput of less than 100,000 gallons per year, provided the storage tank is not used for the storage of gasoline or any material listed as a HAP pursuant to Section 112(b) of the CAA [35 IAC 201.210(a) (10)].

Storage tanks of any size containing virgin or re-refined distillate oil, hydrocarbon condensate from natural gas pipeline or storage systems, lubricating oil, or residual fuel oils [35 IAC 201.210(a) (11)].

Gas turbines and stationary reciprocating internal combustion engines of less than 112 kW (150 horsepower) power output [35 IAC 201.210(a) (15)].

Gas turbines and stationary reciprocating internal combustion engines of between 112 kW and 1,118 kW (150 and 1,500 horsepower) power output that are emergency or standby units [35 IAC 201.210(a) (16)].

Storage tanks of any size containing exclusively soaps, detergents, surfactants, glycerin, waxes, vegetable oils, greases, animal fats, sweeteners, corn syrup, aqueous salt solutions, or aqueous caustic solutions, provided an organic solvent has not been mixed with such materials [35 IAC 201.210(a) (17)].

Loading and unloading systems for railcars, tank trucks, or watercraft that handle only the following liquid materials, provided an organic solvent has not been mixed with such materials: soaps, detergents, surfactants, lubricating oils, waxes, glycerin, vegetable oils, greases, animal fats, sweetener, corn syrup, aqueous salt solutions, or aqueous caustic solutions [35 IAC 201.210(a) (18)].

3.1.4 Activities that are considered insignificant activities pursuant to 35 IAC 201.210(b) are not required to be specifically identified. The Permittee does not conduct activities that are considered insignificant activities pursuant to 35 IAC 201.210(b).

3.2 Compliance with Applicable Requirements

Insignificant activities are subject to applicable requirements notwithstanding status as insignificant activities. In particular, in addition to regulations of general applicability, such as 35 IAC 212.301 and 212.123 (Condition 5.2.2), the Permittee shall comply with the following requirements, as applicable:

3.2.1 For each cold cleaning degreaser, the Permittee shall comply with the applicable equipment and operating requirements of 35 IAC 215.182.

3.2.2 For each particulate matter process emission unit, the Permittee shall comply with the applicable particulate matter emission limit of 35 IAC 212.321 or 212.322. For example, the particulate matter emissions from a process emission unit shall not exceed 0.55 pounds per hour if the emission unit's process weight rate is 100 pounds per hour or less, pursuant to 35 IAC 266.110.

3.2.3 For each organic material emission unit that uses organic material, e.g., a mixer or printing line, the Permittee shall comply with the applicable VOM emission limit of 35 IAC 215.301, which requires that organic material emissions not exceed 8.0 pounds per hour or do not qualify as photochemically reactive material as defined in 35 IAC 211.4690.

3.2.4 For each storage tank over 250 gallons capacity that stores an organic material with a vapor pressure exceeding 2.5 psia at 70 degrees Fahrenheit, the tank shall be equipped with a permanent submerged loading pipe, submerged fill, or an equivalent device approved by the Illinois EPA or unless such tank is a pressure tank [35 IAC 215.122(b) and (c)].

3.3 Addition of Insignificant Activities

3.3.1 The Permittee is not required to notify the Illinois EPA of additional insignificant activities present at the source of a type that is identified in Condition 3.1, until the renewal application for this permit is submitted, pursuant to 35 IAC 201.212(a).

3.3.2 The Permittee must notify the Illinois EPA of any proposed addition of a new insignificant activity of a type

addressed by 35 IAC 201.210(a) and 201.211 other than those identified in Condition 3.1, pursuant to Section 39.5(12) (b) of the Act.

- 3.3.3 The Permittee is not required to notify the Illinois EPA of additional insignificant activities present at the source of a type identified in 35 IAC 201.210(b).

4.0 SIGNIFICANT EMISSION UNITS AT THIS SOURCE

Permit Emission Unit Number	Permittee Unit Number	Description	Date Constructed	Emission Control Equipment
1	1F-1	Crude Atmosphere Heater	Modified 2002	SCR
2	3F-1	Ultraformer Reactor Preheater	Modified 2001	None
3	3F-2	Ultraformer Reactor Preheater	Pre-1972	None
4	4F-1	Hydrotreater Reactor Heater	Pre-1972	None
5	4F-2	Hydrocracker Reactor Heater	Pre-1972	None
6	4F-3	Unicracker Splitter Reboiler	Pre-1972	None
7	4F-4	Unicracker Debutanizer Reboiler	Pre-1972	None
8	7F-1	HF Alkyl Isostripper Reboiler	Pre-1972	None
9	8F-1	Debutanizer Reboiler	Pre-1972	None
10	16F-1	Naphtha Hydrotreater Heater	1981	None
11	16F-2	Naphtha Hydrotreater Heater	1981	None
12	16F-3A	Platformer Heater	1981	None
13	16F-3B	Platformer Heater	1981	None
14	16F-3C	Platformer Heater	1981	None
15	16F-3D	Platformer Heater	1981	None
16	16F-4	Platformer Debutanizer-Reboiler	1981	None
17	23F-1	Sat Gas #2 Debutanizer Reboiler	1981	None
18	69F-1A	DHT Charge Heater	1992	None
19	69F-1B	DHT Charge Heater	1992	None
20	69F-2	DHT Stripper Heater	1992	None
21	74F-1	Gasoline Desulfurizer Feed Heater	2003	None
22	74F-2	Gasoline Desulfurizer Feed Heater	2003	None
23	77F-1R	Replacement Penex Heater	2003	None
24	82F-1	Peabody Regen. Preheater	1972	None
25	87F-103	Special Coker Heater	1994	None
26	90F-2	Regular Coker Preheater	2002	None
27	1F-2	Crude Vacuum Heater	Pre-1972	None
28	2F-1	Ultrafiner Reactor Heater	Pre-1972	None
29	2F-2	Ultrafiner Stripper Reboiler	Pre-1972	None
30	3F-3	Ultraformer Reactor Preheater	Pre-1972	None

Permit Emission Unit Number	Permittee Unit Number	Description	Date Constructed	Emission Control Equipment
31	3F-4	Ultraformer Reactor Preheater	Pre-1972	None
32	3F-7	Ultraformer Regen. Heater	Pre-1972	None
33	77F-1	Penex Heater	Pre-1972	None
34	77F-2	Penex Reboiler	Pre-1972	None
35	82F-2	FCCU Preheater	Pre-1972	None
36	90F-1	Regular Coker Heater	Pre-1972	None
37	Boiler #3	Boiler #3	Pre-1972	None
38	Boiler #4	Boiler #4	Pre-1972	None
39	Boiler #5	Boiler #5	Pre-1972	None
40	Boiler #6	Boiler #6	Pre-1972	None
41	Fluid Catalytic Cracking Unit (FCCU)	Vacuum and atmospheric gas oil are cracked into higher octane gasoline and aromatic products. The catalyst regeneration part of the unit vents through the control equipment	1975	CO Boiler, Flue Gas Scrubber System (FGSS)
42	Plant 3	Ultraformer	Pre-1972	Refinery Flare System
43	Plant 16	Naphtha Hydrotreater/Platformer	1981	Refinery Flare System
44	Plant 1	Crude Unit, 1C-17 Blow Down Drum Overhead	Pre-1972	Refinery Flare System
45	Plant 1	Crude Unit, 1C-18, Flue Gas Knock Out Drum Bottoms	Pre-1972	Refinery Flare System
46	Plant 1	Crude Unit, 1C-33, Off-Gas Knock Out Drum Vacuum Off Gas	Pre-1972	1F-1 Heater
47	Plant 2	Ultrafiner, 2C-14, Blow Down Drum	Pre-1972	Refinery Flare System
48	Plant 2	Ultrafiner, 2C-18, Oxygen Stripper Knock Out Drum	Pre-1972	Refinery Flare System
49	Plant 3	Ultraformer, 3C-25, Fuel Gas Knock Out Drum	Pre-1972	Refinery Flare System
50	Plant 4	Unicracker, 4C-30, Fuel Gas Knock Out Drum	Pre-1972	Refinery Flare System
51	Plant 8	#1 Sat Gas Plant, 8C-11, Fuel Gas Knock Out Drum	Pre-1972	Refinery Flare System
52	Plant 8	#1 Sat Gas Plant, 8C-12, Blow Down Drum	Pre-1972	Refinery Flare System
53	Plant 16	Platformer, 16C-43, Fuel Gas Knock Out Drum	1981	Refinery Flare System
54	Plant 23	#2 Sat Gas Plant, 23C-12, Fuel Gas Knock Out Drum	Pre-1972	Refinery Flare System
55	Plant 77	Penex, 77C-26, Flare Knock Out Drum	Pre-1972	Refinery Flare System

Permit Emission Unit Number	Permittee Unit Number	Description	Date Constructed	Emission Control Equipment
56	Plant 82	FCCU, 82C-103, Flare Knock Out Drum	1975	Refinery Flare System
57	Plant 90	Regular Coker, 90C-20, Fuel Gas Knock Out Drum	Pre-1972	Refinery Flare System
58	Plant 1	Crude Unit	Pre-1972	None
59	Plant 2	Ultrafiner	Pre-1972	None
60	Plant 4	Unicracker	2003	None
61	Plant 7	HF Alkylation	Pre-1972	None
62	Plant 8	#1 Sat Gas Plant	Pre-1972	None
63	Plant 9	Sulfur and Amine Treating	Pre-1972	None
64	Plant 11	LPG Merox Treaters	Pre-1972	None
65	Plant 17	Deslater Water Stripper	Pre-1972	None
66	Plant 23	#2 Sat Gas Plant	1982	None
67	Plant 64	Sour Water Stripper	1992	None
68	Plant 69	Distillate Hydrotreater Unit	1991	None
69	Plant 71	MTBE/ETBE/Iso-Octene Unit	1991	None
70	Plant 73	Sulfur and Amine Treating	Pre-1972	None
71	Plant 76	Penex Feed Splitter	Pre-1972	None
72	Plant 77	Penex/Naphtha Isomerization Unit	Pre-1972	None
73	Plant 83	Light Ends Plant	Pre-1972	None
74	Plant 87	Special Coker	Pre-1972	None
75	Plant 90	Regular Coker	Pre-1972	None
76	Plant 74	Gasoline Desulfurization Unit	2003	None
77	Plant 5	Hydrogen Plant	Pre-1972	None
78	84F-1 Flare	Refinery Flare System	Pre-1972	Flare
79	84F-2 Flare	Refinery Flare System	Pre-1972	Flare
80	84F-3 Flare	Refinery Flare System	Pre-1972	Flare
81	84F-4 Flare	Refinery Flare System	Pre-1972	Flare
82	84F-5 Flare	Refinery Flare System	Pre-1972	Flare
83	84F-6 Flare	Refinery Flare System	1992	Flare
84	84F-7 Flare	Control Device for Certain Storage Tanks and Wastewater Treatment Facilities	1998	Flare
85	Sulfur Recovery Unit No. 1, Plant 62	Recovery of Sulfur from Various Streams	1992	SCOT Unit
86	Tail Gas Treatment Unit No. 1, Plant 66	SCOT Process	1992	Thermal Oxidizer (66F-3)

Permit Emission Unit Number	Permittee Unit Number	Description	Date Constructed	Emission Control Equipment
87	Sulfur Recovery Unit No. 2, Plant 63	Recovery of Sulfur from Various Streams	1992	SCOT Unit
88	Tail Gas Treatment Unit No. 2, Plant 67	SCOT Process	1992	Thermal Oxidizer (66F-5)
89	Sulfur Loading	Loading of Sulfur Into Rail Cars or Tank Trucks	1992	None
90	21	Propylene Drying, Storage and Loadout	2001	Flare
91	#1 Cooling Tower	Non-Contact Process Water Cooling System	Pre-1972	None
92	#2 Cooling Tower	Non-Contact Process Water Cooling Tower	Pre-1972	None
93	#3 Cooling Tower	Non-Contact Process Water Cooling Tower	1981	None
94	Spray Pond	Non-Contact Process Water Cooling Tower	Pre-1972	None
95	Stripped Wastewater Cooling System	Non-Contact Process Water Cooling Tower	2003	None
96	---	LNAPL System	2003	Carbon Canister
97	WWTP	Units to Flare: Slop Oil Tanks, 21D-14 through 18, 21D-20, 21D-21, 21D-22; MOSC Tank 21D-091; API/DNF Solids Tanks 79D-047, 79D-057, 79D-120, 79D-121; Caustic Storage Tank 79D-073; API Separators 79D-119A and B; DNF Units 79D-122A and B; DNF Float Storage Tanks 79-124A and B; DNF Effluent Tank 79D-125; DNF Float Pump Tanks 79D-130A and B; and API Skim Oil Tanks 79D-131A and B	Various	Flare 84F-7
98	WWTP	Equalization Tank 79D-63 Stormwater Tank 21D-809 Stormwater Tanks 79D-74A, 79D-74B and 79D-74C	Various	External Floating Roof

Permit Emission Unit Number	Permittee Unit Number	Description	Date Constructed	Emission Control Equipment
99	WWTP	Main Lift Station 79D-118, Tank Water Draw Collection Sump 21D-6, Tank 21D-809 Sump, Stormwater Collection Sump 79D-73	Modified 2002	Carbon Canister
100		DNF Sat Tanks 79C-123A and 79C-123B	2002	Pressurized Tanks
101	WWTP	Activated Sludge Tanks 79D-64A and 79D-64B/ Clarifier 79D-71/Sand Filters 79D-42, 79D-43, and 79D-44/Stormwater Tanks 21D-806, 21D-807, and 79D-75	Various	None
102	LTTD	Low Temperature Thermal Desorption System Consisting of the Following:	2003	
		Mix Tank (Process Unit #1)	2003	Carbon Canister (Control Unit [CU] #1)
		Two Phase Centrifuge (Process Unit #2)	2003	Carbon Canister (CU #2)
		Centrifuge Cake Collection Box (Process Unit #3)	2003	Carbon Canister (CU #3)
		Centrate Holding Tank (Process Unit #4)	2003	Carbon Canister (CU #4)
		Separation Tank (Process Unit #5)	2003	Carbon Canister (CU #5)
		Frac Tanks (Process Unit #9)	2003	Carbon Canister (CU #9)
		Thermal Dryer (Process Unit #6)	2003	Scrubber (CU #6) and Carbon Canister (CU #8)
		Dryer Cake Collection Roll-Off Box (Process Unit #7)	2003	None
		Numerous Storage Tanks - See Attachment 1		See Attachment 1

5.0 OVERALL SOURCE CONDITIONS

5.1 Source Description

5.1.1 This permit is issued based on the source requiring a CAAPP permit as a major source (as defined in the CAA) of NO_x, SO₂, CO, PM, VOM, and HAP emissions.

5.1.2 For purposes of the CAAPP and Title I of the Clean Air Act, the Marathon Ashland Petroleum LLC Robinson Refinery is considered a single source with the following other Marathon Ashland Petroleum LLC sources located in the vicinity of the refinery:

<u>I. D. No.</u>	<u>Location</u>
033808AAL	Marathon Ashland Petroleum LLC Robinson Terminal

This source has elected to obtain a separate CAAPP permit.

5.2 Applicable Regulations

5.2.1 Specific emission units at this source are subject to particular regulations as set forth in Section 7 (Unit-Specific Conditions) of this permit.

5.2.2 In addition, emission units at this source are subject to the following regulations of general applicability:

- a. No person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally overhead at a point beyond the property line of the source unless the wind speed is greater than 40.2 kilometers per hour (25 miles per hour), pursuant to 35 IAC 212.301 and 212.314.

Unless otherwise stated in Section 7, compliance with this requirements is considered to be assured by the inherent nature of operations at this source, as demonstrated by historical operation.

- b. No person shall cause or allow the emission of smoke or other particulate matter with an opacity greater than 30 percent into the atmosphere from any emission unit other than those emission units subject to the requirements of 35 IAC 212.122, pursuant to 35 IAC 212.123(a), except as allowed by 35 IAC 212.123(b) and 212.124. The 35 IAC 212.122 exception only applies to fuel combustion emission units with a firing rate in excess of 250 mmBtu/hr and constructed after April 14, 1972.

c. Except as provided by 35 IAC 214, no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission unit to exceed 2,000 ppm [35 IAC 214.301]. This provision shall not apply to existing processes designed to remove sulfur compounds from the flue gases of petroleum and petrochemical processes. [35 IAC 214.382(a)]

d. PM Emission Limits for Process Sources

i. Except as further provided by 35 IAC Part 212, no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any process emission unit for which construction or modification commenced prior to April 14, 1972, which, either alone or in combination with the emission of particulate matter from all other similar process emission units at a source or premises exceeds the allowable emission rates using the following equations (35 IAC 212.322):

$$E = 4.10(P)^{0.67}$$

for P less than or equal to 30 ton/hr

$$E = (55.0(P)^{0.11}) - 40.0$$

for P greater than 30 ton/hr

Where:

E = Allowable emission rate in lbs/hr; and

P = Process weight rate in ton/hr.

ii. For process emission units for which construction or modification commenced after April 14, 1972 (35 IAC 212.321):

$$E = 2.54(P)^{0.534}$$

for P less than or equal to 450 ton/hr

$$E = 24.8(P)^{0.16}$$

for P greater than 450 ton/hr.

iii. For P less than 0.05 (100 lb/hr), the allowable is 0.55 lb/hr (35 IAC 266.110).

iv. Note that the above limits do not apply to the catalytic cracking operations. See Condition

7.3.3(d) for the PM rule that applies to those operations.

- 5.2.3 a. Except as provided in section (iv) or (v) of this Condition, no person shall cause or allow the discharge of organic materials in excess of 100 ppm equivalent methane (molecular weight 16.0) into the atmosphere from:
- i. Any catalyst regenerator of a petroleum cracking system; or
 - ii. Any petroleum fluid coker; or
 - iii. Any other waste gas stream from any petroleum or petrochemical manufacturing process.
 - iv. Exception. Existing sources subject to Condition 5.2.3(a)(iii) may, alternatively, at their election, comply with the organic material emission limitations imposed by 35 IAC 215.301 or 215.302; provided, however, that there shall be no increase in emissions from such sources above the level of emissions in existence on May 3, 1979.
 - v. New Sources. Sources subject to Condition 5.2.3(a)(iii), construction of which commenced on or after January 1, 1977, may at their election, comply with the following emission limitations:
 - A. A maximum of eight pounds per hour of organic material; or
 - B. Emissions of organic material in excess of the limitation of Condition 5.2.3(a)(v)(A) of this Section is allowable if such emissions are controlled by air pollution control methods or equipment approved by the Illinois EPA capable of reducing by 85 percent or more the uncontrolled organic material that would otherwise be emitted to the atmosphere. Such methods or equipment must be approved by the Illinois EPA and approved by the USEPA as a SIP revision. (35 IAC 215.441)
- b. No owner or operator of a petroleum refinery shall cause or allow the operation of any vacuum producing system unless the condensers, hot wells and accumulators of any such system are equipped with vapor loss control equipment including, but not

limited to, piping, valves, flame arresters and hot well covers, to vent any VOM with a vapor pressure of 1.5 psia or greater at 70°F to a heater, fire box, flare, refinery fuel gas system, or other equipment or system of equal emission control as approved by the Illinois EPA and approved by the USEPA as a SIP revision. This Section shall not apply to vacuum producing systems on lube units. (35 IAC 215.442)

- c. Pursuant to 35 IAC 215.443, the owner or operator of a petroleum refinery shall not process organic material with a vapor pressure of 10.34 kPa (1.5 psia) or greater at 294.3 K (70°F) in any wastewater (oil/water) separator at a petroleum refinery unless the separator is equipped with air pollution control equipment capable of reducing uncontrolled organic material emissions into the atmosphere by 85%.

Compliance with this requirement is considered to be assured by compliance with the refinery MACT (see Condition 5.2.4).

- d. Pursuant to 35 IAC 215.444, the Permittee shall not cause or allow a refinery process unit turnaround except in compliance with an operating procedure as approved by the Illinois EPA. Except for procedures that were on file with the Illinois EPA no later than November 1, 1979, the procedure shall be designed to reduce emissions of VOM during refinery process unit turnarounds from organic material with a vapor pressure of 10.34 kPa (1.5 psia) or greater at 294.3°K (70°F) and shall at a minimum include depressurization of the refinery process unit or vessel to a flare, refinery fuel gas system, or other equipment or system of equal emission control, as approved by the Illinois EPA, until the internal pressure from the vessel or unit is less than 5.0 psig before allowing the vessel to be vented to the atmosphere.
- e. Pursuant to 35 IAC 215.143, no person shall cause or allow the emission of organic material into the atmosphere from any vapor blowdown system or any safety relief valve, except such safety relief valves not capable of causing an excessive release, unless such emission is controlled:
 - i. To 10 ppm equivalent methane (molecular weight 16.0) or less; or
 - ii. By combustion in a smokeless flare; or
 - iii. By other air pollution control equipment approved by the Illinois EPA according to the

provisions of 35 IAC 201 and further processed consistent with 35 IAC 215.108.

Currently the Illinois EPA has not approved other air pollution control equipment for use in controlling vapor blowdown emissions at this source.

- f. Pursuant to 35 IAC 215.144, Condition 5.2.3(e) shall not apply to any set of unregulated safety relief valves capable of causing excessive releases, provided the owner or operator thereof, by October 1, 1972, supplied the Illinois EPA with the following:
 - i. A historical record of each such set (or, if such records were unavailable, of similar sets which, by virtue of operation under similar circumstances, may reasonably have been presumed to have the same or greater frequency of excessive releases) for a three-year period immediately preceding October 1, 1972, indicating:
 - A. Dates on which excessive releases occurred from each such set; and
 - B. Duration in minutes of each such excessive release; and
 - C. Quantities (in pounds) of mercaptans and/or hydrogen sulfide emitted into the atmosphere during each such excessive release.
 - ii. Proof, using such three-year historical records, that no excessive release is likely to occur from any such set, either alone or in combination with such excessive releases from other sets owned or operated by the same person and located within a ten-mile radius from the center point of any such set, more frequently than 3 times in any 12 month period; and
 - iii. Accurate maintenance records for such safety relief valves.
- g. No person shall cause or allow the emission of a carbon monoxide waste gas stream into the atmosphere from a petroleum or petrochemical process unless such waste gas stream is burned in a direct flame afterburner or carbon monoxide boiler so that the resulting concentration of carbon monoxide in such

waste gas stream is less than or equal to 200 ppm corrected to 50 percent excess air, or such waste gas stream is controlled by other equivalent air pollution control equipment approved by the Illinois EPA according to the provisions of 35 IAC 201 [35 IAC 216.361(a)].

5.2.4 Certain petroleum refining process units at the refinery are subject to 40 CFR 63 Subpart CC, NESHAP for Petroleum Refineries. However, Subpart CC exempts certain units from applicability of the rule. For instance, units that are subject to the HON rule are exempt from applicability of Subpart CC. Within the overall standard are specific standards for various classifications as follows:

- a. Miscellaneous process vents;
- b. Storage vessel;
- c. Wastewater streams and wastewater treatment operation;
- d. Equipment leak; and
- e. Gasoline loading racks.

Within some of the above classifications there are two groupings. Group 1 units generally require control equipment or emission minimization methods. Group 2 units do not require control equipment or emission minimization methods. In Section 7 of this permit, specific emission units are identified as being Group 1 or Group 2 units.

5.2.5 Future Regulations

- a. Adopted Rule with Future Compliance Date

This source is subject to 40 CFR 63 Subpart UUU, [63.1560 et. seq.] a NESHAP for Catalytic Cracking Units (CCUs), Catalytic Reforming Units, and Sulfur Recovery Units (SRUs) at Petroleum Refineries. This Subpart has been promulgated as a final rule but the source does not have to achieve compliance with the emission limitations until April 11, 2005. An extension beyond that date is allowed for CCUs until the date that Tier 2 gasoline sulfur control standard is met provided that certain interim requirements are met as described in 40 CFR 63.1563.

- b. New Regulations

- i. Should this stationary source become subject to a regulation under 40 CFR Parts 60 or 63 or 35 IAC after the date this permit is issued,

then the owner or operator shall, in accordance with the applicable regulation(s), comply with the applicable requirements by the date(s) specified and shall certify compliance with the applicable requirements of such regulation(s) as part of the annual compliance certification, as required by 40 CFR Part 70 or 71.

- ii. No later than upon the submittal for renewal of this permit, the owner or operator shall submit, as part of an application, the necessary information to address either the non-applicability of, or demonstrate compliance with, all applicable requirements of any potentially applicable regulation which was promulgated after the date this permit is issued.

5.2.6 Episode Action Plan

- a. If the source is required to have an episode action plan pursuant to 35 IAC 244.142, the Permittee shall maintain at the source and have on file with the Illinois EPA a written episode action plan (plan) for reducing the levels of air contaminants during yellow alerts, red alerts, and emergencies, consistent with safe operating procedures. The plan shall contain the information specified in 35 IAC 244.144.
- b. The Permittee shall immediately implement the appropriate steps described in this plan related to the declared episode stage and contaminant (35 IAC 244.169(b)) should an air pollution alert or emergency be declared.
- c. If an operational change occurs at the source which invalidates the plan, a copy of the revised plan shall be submitted to the Illinois EPA for review within 30 days of the change. Such plans shall be further revised if disapproved by the Illinois EPA. [35 IAC 244.143(d) and 244.145(b)]
- d. For sources required to have a plan pursuant to 35 IAC 244.142, a copy of the original plan and any subsequent revisions shall be sent to:

Illinois EPA, Compliance Section.

5.2.7 Benzene Waste Operations

- a. The requirements of 40 CFR 61 Subpart FF, Benzene Waste Operations, are applicable because the source is a petroleum refinery with a total annual benzene

quantity in its waste streams in excess of 10 megagrams per year. The Permittee has currently chosen to comply with 40 CFR 61.342(e)(2) which states that the benzene quantity for the wastes described below shall not exceed 6 megagrams per year:

The owner or operator shall manage and treat facility waste (including remediation and process unit turn-around waste) with a flow-weighted annual average water content of 10 percent or greater, on a volume basis as total water, and each waste stream that is mixed with water or wastes at any time such that the resulting mixture has an annual water content greater than 10 percent.

All options under 40 CFR 61.342 remain available to comply with Subpart 61.

- b. The determination of benzene quantity for each waste stream shall be made in accordance with 40 CFR 61.355(k).
- c. Recordkeeping shall be in accordance with 40 CFR 61.356.
- d. Reporting shall be in accordance with 40 CFR 61.357.

5.2.8 General Provisions of Federal Regulations

Section 7.0 of this permit frequently cites federal regulations such as New Source Performance Standards (NSPS, 40 CFR 60) or NESHAP (40 CFR 61 and 63). Typically only the specific subpart is cited (e.g. 40 CFR 63 Subpart CC for Petroleum Refineries) but in all cases Subpart A, the general provisions of that Part are applicable, although some portions may be specifically excluded. Some of the general provisions involve notification of startup of construction and beginning operation that are not relevant to these already operating units.

5.2.9 Risk Management Plan

- a. This stationary source, as defined in 40 CFR Section 68.3, is subject to 40 CFR Part 68, the Accidental Release Prevention regulations [40 CFR 68.215(a)(1)].
- b. The owner or operator of a stationary source shall revise and update the RMP submitted as specified in 40 CFR 68.190.

5.3 Non-Applicability of Regulations of Concern

The safety relief valves at the refinery are not subject to 35 IAC 215.301 (8 lb/hr rule) because they are covered by more specific regulations, 35 IAC 215.143 (vapor blowdown requirements) and 215.144 (safety relief valve requirements).

5.4 Source-Wide Operational and Production Limits and Work Practices

In addition to the source-wide requirements in the Standard Permit Conditions in Section 9, the Permittee shall fulfill the following source-wide operational and production limitations and/or work practice requirements:

None.

5.5 Source-Wide Emission Limitations

5.5.1 Permitted Emissions for Fees

No emission limitations are being imposed on this source for the purpose of permit fees. The Permittee will be required to pay the maximum fee of \$250,000.00/year in accordance with Section 39.5(18) (a) (ii) (A) of the Act.

5.5.2 Emissions of Hazardous Air Pollutants

Source-wide emission limitations for HAPs as listed in Section 112(b) of the CAA are not set. This source is considered to be a major source of HAPs.

5.5.3 Other Source-Wide Emission Limitations

Source-wide emission limitations are not set for this source pursuant to either the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21, Illinois EPA rules for Major Stationary Sources Construction and Modification, 35 IAC Part 203, or Section 502(b)(10) of the CAA. However, there may be unit specific emission limitations set forth in Section 7 of this permit pursuant to these rules.

5.6 General Recordkeeping Requirements

5.6.1 General Records for Process Unit Turnarounds

The Permittee shall maintain records of the following items for the source to demonstrate compliance with Condition 5.2.3(d):

- a. Each date that a refinery unit or vessel is shutdown for turnaround;

- b. The total estimated quantity of VOM emitted to the atmosphere resulting from the turnaround and the duration of the emissions in hours, with supporting information (Emissions associated with process unit turnaround shall not be included when determining compliance with any hourly or annual emission limitation); and
- c. Any occurrence of depressurization of a refinery unit or vessel with a pressure of 5.0 psig or greater containing a material with a vapor pressure of 10.34 kPa (1.5 psia) or greater at 294.3°K (70°F) by venting directly to the atmosphere, and the reason for such venting.

5.6.2 Records for Safety Relief Valves

The Permittee shall maintain records of all safety relief valves which are excluded from the control requirements of Condition 5.2.3(e) pursuant to Condition 5.2.3(f) because they are capable of causing excessive releases, but no excess release is likely to occur based on historical information as previously submitted to the Illinois EPA. These records shall include, as a minimum, the following:

- a. Identification of such safety relief valves or sets of safety relief valves; and
- b. Historical information that demonstrates that no excessive releases are likely to occur from any such set of valves, either alone or in combination with such excessive releases from other sets owned or operated by the Permittee and located within a ten-mile radius from the center point of any such set, more frequently than 3 times in any 12 month period.

5.6.3 Retention and Availability of Records

- a. All records and logs required by this permit shall be retained for a least five years from the date of entry (unless a longer retention period is specified by the particular recordkeeping provision herein), shall be kept at a location at the source that is readily accessible to the Illinois EPA or USEPA, and shall be made available for inspection and copying at all reasonable times by the Illinois EPA or USEPA upon request.
- b. The Permittee shall retrieve and print, on paper, during normal source office hours, any required records retained in an electronic format (e.g., computer) in response to an Illinois EPA or USEPA request for required records during the course of a source inspection.

- c. The Permittee shall keep records of emissions of all pollutants in order to be able to submit the Annual Emission Report required by Condition 5.7.2. This includes records of specific HAPs which are to be reported only if there is a specific regulation (NESHAP or MACT) that applies to the source.

5.7 General Reporting Requirements

5.7.1 General Source-Wide Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations with the permit requirements in accordance with Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations and any corrective actions or preventive measures taken.

5.7.2 Annual Emissions Report

The annual emissions report required pursuant to Condition 9.7 shall contain emissions information for the previous calendar year. CAAPP sources are not required to report emissions from insignificant activities.

5.8 General Operational Flexibility/Anticipated Operating Scenarios

Changes in feed stock and quality, including but not limited to changes in gravity and sulfur content are not considered operational changes and do not require notification to the Illinois EPA (Section 39.5(12) of the Act).

5.9 General Compliance Procedures

5.9.1 Process Unit Turnaround

- a. Compliance with the source-wide operational requirements specified in Condition 5.2.3(d) shall be based on the recordkeeping requirements of Conditions 5.6.1.
- b. Compliance with the source-wide operational requirements specified in Condition 5.2.3(e) shall be based on the recordkeeping requirements of Condition 5.6.3.
- c. For the purpose of estimating HAP emissions from equipment at the source, the vapor weight percent of each HAP for each organic liquid times the VOM emissions contributed by that organic liquid is acceptable.

5.10 Special Permit Shield

The Permittee is hereby shielded from any obligation to measure the volume of leaking liquid from a pump or compressor for purposes of determining compliance with 35 IAC 215.142 as Condition 7.8.5 establishes appropriate compliance procedures for this rule that do not rely on such measurements.

6.0 EMISSIONS CONTROL PROGRAMS

6.1 NO_x Trading Program

6.1.1 Description of NO_x Trading Program

The NO_x Trading Program is a regional "cap and trade" market system for large sources of NO_x emissions in the eastern United States, including Illinois. It is designed to reduce and maintain NO_x emissions from the emission units covered by the program within a budget to help contribute to attainment and maintenance of the ozone ambient air quality standard in the multi-state region covered by the program, as required by Section 126 of the CAA. The NO_x Trading Program applies in addition to other applicable requirements for NO_x emissions and in no way relaxes these other requirements.

Emission units that are subject to the NO_x Trading Program are referred to as "budget units." Sources that have one or more budget unit subject to the NO_x Trading Program are referred to as budget sources.

The NO_x Trading Program controls NO_x emissions from budget units during a seasonal control period from May 1 through September 30 of each year when weather conditions are conducive to formation of ozone in the ambient air. (In 2004, the first year that the NO_x Trading Program is in effect, the control period will be May 31 through September 30.) By November 30 of each year, the allowance transfer deadline, each budget source must hold "NO_x allowances" for the actual NO_x emissions of its budget units during the preceding control period. The USEPA will then retire NO_x allowances in the source's accounts in amounts equivalent to its seasonal emissions. If a source does not have sufficient allowances in its accounts, USEPA would subtract allowances from the source's future allocation for the next control period and impose other penalties as appropriate. Stringent monitoring procedures developed by USEPA apply to budget units to assure that actual emissions of NO_x emissions are accurately determined.

The number of NO_x allowances available for budget sources is set by the overall budget for NO_x emissions established by USEPA. This budget requires a substantial reduction in NO_x emissions from historical levels as necessary to meet air quality goals. In Illinois, separate rules have been established for the budget units that are electrical generating units (EGU) and for large units at manufacturing plants and institutions (non EGU), like the boilers at this source. Under these rules, the allocation or share of the NO_x allowances for non-EGU is set in an amount established by rule [35 IAC Part 217, Appendix E].

New budget units, for which limited operating data may be available, may obtain NO_x allowances from the new source set-aside (NSSA), a portion of the overall budget reserved for new budget units.

In addition to directly receiving or purchasing NO_x allowances as described above, budget sources may transfer NO_x allowances from one of their units to another. They may also purchase allowances in the marketplace from other sources that are willing to sell some of the allowances that they have received. Each budget source must designate an account representative to handle all its allowance transactions. The USEPA, in a central national system, will maintain allowance accounts and record transfer of allowances among accounts.

The ability of sources to transfer allowances will serve to minimize the costs of reducing NO_x emissions from budget units to comply with the overall NO_x budget. In particular, the NO_x emissions of budget units that may be most economically controlled will be targeted by sources for further control of emissions. This will result in a surplus of NO_x allowances from those units that can be transferred to other units at which it is more difficult to control NO_x emissions. Experience with reduction of sulfur dioxide emissions under the federal Acid Rain program has shown that this type of trading program not only achieves regional emission reductions in a more cost-effective manner but also results in greater overall reductions than application of traditional emission standards to individual emission units.

The USEPA developed the plan for the NO_x Trading Program with assistance from affected states. Illinois' rules for the NO_x Trading Program are located at 35 IAC Part 217, Subpart U and W, for non-EGUs and EGUs, respectively. These rules have been approved by the USEPA. These rules provide for interstate trading of NO_x allowances as mandated by Section 9.9 of the Act. Accordingly, these rules refer to and rely upon federal rules at 40 CFR Part 96 which have been developed by USEPA for certain aspects of the NO_x Trading Program, and which an individual state must follow to allow for interstate trading of allowances.

Note: This narrative description of the NO_x Trading Program is for informational purposes only and is not enforceable.

6.1.2 Applicability

- a. i. The following emission units are budget units for purposes of Illinois' NO_x Trading Program. Accordingly, this source is a budget source and the Permittee is the owner or operator of

a budget source and budget units. In this section of this permit, these emission units are addressed as budget units.

Boilers 3 (59F-3) and 4 (59F-4) (Emission Units 37 and 38)

- ii. This Permit does not provide "low-emitter status" for the above emission units pursuant to 35 IAC 217.472.
- b. i. Until and unless the Illinois EPA, with concurrence from USEPA, determines that the FCCU CO Boiler (Control device for Emission Unit 41) is not a budget unit, the Permittee shall continue to consider the FCCU CO Boiler to be a budget unit subject to the NO_x Trading Program except as the Permittee has provided prior to notification to the Illinois EPA and USEPA. In such a notification, the Permittee shall identify the specific requirements of the NO_x Trading Program that it does not intend to fulfill and explain why it believes that fulfillment of such requirements would be infeasible, impractical, or unreasonable.
- ii. The Permittee shall take reasonable measures to facilitate full compliance with the NO_x Trading Program for the FCCU CO Boiler if necessary, including promptly providing all available information that it possesses that is requested by the Illinois EPA to enable the allocation of NO_x allowances for the FCCU CO Boiler and promptly requesting revision of this permit to incorporate any such allocation of allowances and to address the FCCU CO Boiler as a budget unit.
- iii. These provisions do not shield the Permittee from enforcement for failure to fully comply with applicable requirements of the NO_x Trading Program for the FCCU CO Boiler if it is determined that the NO_x Trading Program applies to the FCCU CO Boiler.

Note: As of the date of issuance of this permit, the applicability of NO_x Trading Program to the FCCU CO Boiler was being reconsidered by the Illinois EPA in consultation with USEPA. The FCCU CO Boiler is not listed in 35 IAC 217 Subpart U, Appendix E and NO_x allowances were not allocated to it. However, the FCCU CO Boiler is an existing unit and it has a maximum

design firing rate of greater than 250 mmBtu/hr.

Because 35 IAC 217.756(c) and 40 CFR Part 96 Subpart H require a NO_x Continuous Emission Monitoring System (CEMS) to be installed on an existing budget unit one year in advance of the first ozone control period in which allowances must be held for such a unit, Marathon Ashland Petroleum LLC has installed the required CEMS on the FCCU CO Boiler and has petitioned USEPA for an alternative monitoring plan for measurement of flow rate between the FCCU regenerator and the CO Boiler. If the Illinois EPA determines that the NO_x Trading Program does not apply to the FCCU CO Boiler, then Marathon Ashland Petroleum LLC intends to follow the requirements of 40 CFR Part 60 for the continued operation of the NO_x CEMS, rather than the requirements of 40 CFR Part 75, as applicable for NO_x monitoring of a budget unit.

6.1.3 General Provisions of the NO_x Trading Program

- a. This source and the budget units at this source shall comply with all applicable requirements of Illinois' NO_x Trading Program, i.e., 35 IAC Part 217, Subpart U, and 40 CFR Part 96 (excluding 40 CFR 96.4(b) and 96.55(c), and excluding 40 CFR 96, Subparts C, E and I), pursuant to 35 IAC 217.456(a) and 217.456(f) (2).
- b. Any provision of the NO_x Trading Program that applies to a budget source (including any provision applicable to the account representative of a budget source) shall also apply to the owner and operator of such budget sources and to the owner and operator of each budget unit at the source pursuant to 35 IAC 217.456(f) (3).
- c. Any provision of the NO_x Trading Program that applies to a budget EGU (including any provision applicable to the account representative of a budget unit) shall also apply to the owner and operator of such budget unit. Except with regard to requirements applicable to budget units with a common stack under 40 CFR 96, Subpart H, the owner and operator and the account representative of one budget unit shall not be liable for any violation by any other budget unit of which they are not an owner or operator or the account representative pursuant to 35 IAC 217.456(f) (4).

6.1.4 Requirements for NO_x Allowances

- a. Beginning in 2004, by November 30 of each year, the allowance transfer deadline, the account representative of each budget unit at this source must hold allowances available for compliance deductions under 40 CFR 96.54 in the budget unit's compliance account or the source's overdraft account in an amount that shall not be less than the budget unit's total NO_x emissions for the preceding control period (rounded to the nearest whole ton), as determined in accordance with applicable monitoring requirements, plus any number of allowances necessary to account for actual utilization (e.g., for testing, start-up, malfunction, and shut down) under 40 CFR 96.42(e) for the control period, pursuant to 35 IAC 217.456(d) (1). For purposes of this requirement, an allowance may not be utilized for a control period in a year prior to the year for which the allowance is allocated, pursuant to 35 IAC 217.456(d) (4).
- b. The account representative of a budget unit that has excess emissions in any control period, i.e., NO_x emissions in excess of the number of NO_x allowances held as provided above, shall surrender allowances as required for deduction under 40 CFR 96.54(d) (1), pursuant to 35 IAC 217.456(f) (5). In addition, the owner or operator of a budget unit that has excess emissions shall pay any fine, penalty, or assessment, or comply with any other remedy imposed under 40 CFR 96.54(d) (3) and the Act pursuant to 35 IAC 217.456(f) (6). Each ton of NO_x emitted in excess of the number of NO_x allowances held as provided above for each budget unit for each control period shall constitute a separate violation of 35 IAC Part 217 and the Act pursuant to 35 IAC 217.456(d) (3).
- c. An allowance allocated by the Illinois EPA or USEPA under the NO_x Trading Program is a limited authorization to emit one ton of NO_x in accordance with the NO_x Trading Program. As explained by 35 IAC 217.456(d) (5), no provisions of the NO_x Trading Program, the budget permit application, the budget permit, or a retired unit exemption under 40 CFR 96.5 and no provision of law shall be construed to limit the authority of the United States or the State of Illinois to terminate or limit this authorization. As further explained by 35 IAC 217.456(d) (6), an allowance allocated by the Illinois EPA or USEPA under the NO_x Trading Program does not constitute a property right. As provided by 35 IAC 217.456(d) (2), allowances shall be held in, deducted from, or transferred among allowances accounts in accordance

with 35 IAC Part 217, Subpart U, and 40 CFR 96, Subparts F and G.

6.1.5 Monitoring Requirements for Budget Units

- a. The Permittee shall comply with the monitoring requirements of 40 CFR Part 96, Subpart H, for the budget unit, and the compliance of the budget unit with the emission limitation under 6.1.4(a) shall be determined by the emission measurements recorded and reported in accordance with 40 CFR 96, Subpart H, pursuant to 35 IAC 217.456(c)(1) and (c)(2).
- b. The account representative for the source and the budget unit at the source shall comply with those sections of the monitoring requirements of 40 CFR 96, Subpart H, applicable to an account representative pursuant to 35 IAC 217.456(c)(1).

Note: Pursuant to 40 CFR 96.70(b), existing budget units are to begin complying with applicable monitoring requirements of 40 CFR Part 96 at least one year in advance of the start of the first control period governed by the NO_x Trading Program.

6.1.6 Recordkeeping Requirements for Budget Units

Unless otherwise provided below, the Permittee shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This 5-year period may be extended for cause at any time prior to the end of the 5 years, once notice has been given to the Permittee in writing by the Illinois EPA or the USEPA.

- a. The account certificate of representation of the account representative for the source and each budget unit at the source and all documents that demonstrate the truth of the statements in the account certificate of representation, in accordance with 40 CFR 96.13, as provided by 35 IAC 217.456(e)(1)(A). These certificates and documents must be retained on site at the source for at least 5-years after they are superseded because of the submission of a new account certificate of representation changing the account representative.
- b. All emissions monitoring information, in accordance with 40 CFR 96, Subpart H, (provided that to the extent that 40 CFR 96, Subpart H, provides for a 3-year period for retaining records, the 3-year period shall apply) pursuant to 35 IAC 217.456(e)(1)(B).

- c. Copies of all reports, compliance certifications, and other submissions and all records made or required under the NO_x Trading Program or documents necessary to demonstrate compliance with requirements of the NO_x Trading Program pursuant to 35 IAC 217.456(e) (1) (C).
- d. Copies of all documents used to complete a budget permit application and any other submission under the NO_x Trading Program pursuant to 35 IAC 217.456(e) (1) (D).

6.1.7 Reporting Requirements for Budget Units

- a. The account representative for this source and each budget unit at this source shall submit to the Illinois EPA and USEPA the reports and compliance certifications required under the NO_x Trading Program, including those under 40 CFR 96, Subparts D and H, and 35 IAC 217.474 pursuant to 35 IAC 217.456(e) (2).
- b. Notwithstanding the provisions for CAAPP permits, these submittals need only be signed by the designated representative, who may serve in place of the responsible official for this purpose, as provided by Section 39.5(1) of the Act, and submittals to the Illinois EPA need only be made to the Illinois EPA, Air Compliance Section.

6.1.8 Allocation of NO_x Allowances to Budget Units

- a. As the budget units identified in Condition 6.1.2 are "existing" units listed in 35 IAC Part 217, Appendix E, these units are entitled to NO_x allowances as specified by Appendix E, subject to transfers of allowances from the source made in accordance with 35 IAC 217.462(b). (The portion of Appendix E that applies to the Permittee is provided in Condition 6.1.12.) The number of NO_x allowances actually allocated for these budget units shall be the number of NO_x allowances allocated by the Illinois EPA in accordance with 35 IAC 217.466(a) and issued by USEPA, which may reflect adjustments to the overall allocations to budget units as provided for by 35 IAC 217.460 and 217.462(c).
- b. To the extent that NO_x allowances remain in the NSSA after any allocation for new budget units, the Permittee is also entitled to a pro-rata share of such remaining allowances as provided by 35 IAC 217.466(d).

6.1.9 Eligibility to Obtain NO_x Allowances from the New Source Set-Aside (NSSA)

The Permittee is not eligible to obtain NO_x allowances from the NSSA for the budget units identified in Condition 6.1.2(a), as provided by 35 IAC 217.468, because the units are "existing" budget units.

6.1.10 Eligibility for Early Reduction Credits (ERC)

The Permittee is not eligible to request NO_x allowances for the budget units identified in Condition 6.1.2(a) for any early reductions in NO_x emissions prior to the 2004 control period, as provided by 35 IAC 217.470, because these units are not equipped with continuous emission monitoring systems for NO_x.

6.1.11 Budget Permit Required by the NO_x Trading Program

- a. For this source, this segment of the CAAPP Permit, i.e., Section 6.1, is the Budget Permit required by the NO_x Trading Program and is intended to contain federally enforceable conditions addressing all applicable NO_x Trading Program requirements. This Budget Permit shall be treated as a complete and segregable portion of the source's permit as provided by 35 IAC 217.458(a) (2).
- b. The Permittee and any other owner or operator of this source and each budget unit at the source shall operate the budget units in compliance with this Budget Permit pursuant to 35 IAC 217.456(b) (2).
- c. No provision of this Budget Permit or the associated application shall be construed as exempting or excluding the Permittee, or other owner or operator and, to the extent applicable, the account representative of a budget source or budget unit from compliance with any other regulation or requirement promulgated under the CAA, the Act, the approved State Implementation Plan, or other federally enforceable permit pursuant to 35 IAC 217.456(g).
- d. Upon recordation by USEPA under 40 CFR 96, Subpart F or G, every allocation, transfer, or deduction of an allowance to or from the budget units' compliance accounts or to or from the source's general or overdraft account is deemed to amend automatically and become part of this budget permit, pursuant to 35 IAC 217.456(d) (7). This automatic amendment of this budget permit shall be deemed an operation of law and will not require any further review.

- e. No revision of this Budget Permit shall excuse any violation of the requirements of the NO_x Trading Program that occurs prior to the date that the revision to this permit takes effect pursuant to 35 IAC 217.456(f) (1).
- f. The Permittee, or other owner or operator of the source, shall reapply for a Budget Permit for the source as required by 35 IAC Part 217, Subpart U and Section 39.5 of the Act. For purposes of the NO_x Trading Program, the application shall contain the information specified by 35 IAC 217.458(b) (2).

6.1.12 References

35 IAC Part 217 Appendix E - Provisions Applicable to the Permittee, originally identified as "Marathon Oil Refining Division", now Marathon Ashland Petroleum LLC.

Company I.D. No./ Name	Unit Designation	Unit Description	Budget Allocation	Budget Allocation Less 3% NSSA
033808AAB	72111291055	Boiler No. 3	53	51
033808AAB	72111291056	Boiler No. 4	53	52
Company Total Allocation:			106	103

7.0 UNIT SPECIFIC CONDITIONS

7.1 Unit: Process Heaters and Boilers
Control: Refer to Section 7.1.2

7.1.1 Description

Process heaters are used to heat the petroleum material being processed. The heaters use as a fuel gas generated on site which may be supplemented with purchased natural gas. The following list of emission units is divided into those subject to NSPS based on construction date and those subject to NSPS based on a consent decree with the USEPA. The primary NSPS requirement is on H₂S content of the fuel gas. There are also some boilers that produce steam for process heat. The boilers burn the same gaseous fuels as the process heaters as both are fuel combustion devices. Four heaters associated with the sulfur recovery plant are included in Section 7.8.

7.1.2 List of Process Heaters, Boilers, and Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Permittee Equipment Number	Firing ^a Rate (mmBtu/hr)	Emission Control Equipment
Units Subject to NSPS based on Construction Date				
1	1F-1	Crude Atmosphere Heater	531	SCR
2	3F-1	Ultraformer Reactor Preheater	315	None
3	3F-2	Ultraformer Reactor Preheater	315	None
4	4F-1	Hydrotreater Reactor Heater	39	None
5	4F-2	Hydrocracker Reactor Heater	39	None
6	4F-3	Unicracker Splitter Reboiler	55	None
7	4F-4	Unicracker Debutanizer Reboiler	52	None
8	7F-1	HF Alky Isostripper Reboiler	154	None
9	8F-1	Debutanizer Reboiler	57	None
10	16F-1	Naphtha Hydrotreater Heater	44	None
11	16F-2	Naphtha Hydrotreater Heater	41.85	None
12	16F-3A	Platformer Heater	625	None
13	16F-3B	Platformer Heater		None
14	16F-3C	Platformer Heater		None

Permit Emission Unit Number	Permittee Unit Number	Permittee Equipment Number	Firing ^a Rate (mmBtu/hr)	Emission Control Equipment
15	16F-3D	Platformer Heater		None
16	16F-4	Platformer Debutanizer-Reboiler	51	None
17	23F-1	Sat Gas #2 Debutanizer Reboiler	45	None
18	69F-1A	DHT Charge Heater	59	None
19	69F-1B	DHT Charge Heater	59	None
20	69F-2	DHT Stripper Heater	88	None
21	74F-1	Gasoline Desulfurizer Feed Heater	29.6	None
22	74F-2	Gasoline Desulfurizer Feed Heater	99.1	None
23	77F-1R	Replacement Penex Heater ^b	29.4	None
24	82F-1	Peabody Regen. Preheater	60.5	None
25	87F-103	Special Coker Heater	108	None
26	90F-2	Regular Coker Preheater	55	None
Units Subject to NSPS Based on Consent Decree				
27	1F-2	Crude Vacuum Heater	143	None
28	2F-1	Ultrafiner Reactor Heater	65	None
29	2F-2	Ultrafiner Stripper Reboiler	110	None
30	3F-3	Ultraformer Reactor Preheater	131	None
31	3F-4	Ultraformer Reactor Preheater	110	None
32	3F-7	Ultraformer Regen. Heater	50	None
33	77F-1	Penex Heater	25	None
34	77F-2	Penex Reboiler	14	None
35	82F-2	FCCU Preheater	110	None
36	90F-1	Regular Coker Heater	134	None
37	Boiler #3	Boiler #3	295	None
38	Boiler #4	Boiler #4	295	None
39	Boiler #5	Boiler #5	185	None
40	Boiler #6	Boiler #6	185	None

^a Firing rates (HHV) listed are for descriptive purposes and are not permit limits unless stated as such in Condition 7.1.5.

^b A construction permit has been issued for this unit. Upon its startup, emission unit 33 (77F-1) will shutdown.

7.1.3 Applicability Provisions and Applicable Regulations

- a. An "affected process heater or boiler" for the purpose of these unit-specific conditions is a process heater, boiler, preheater, reboiler, or furnace that burns gaseous fuel and/or liquid fuel, classified as a fuel combustion emission unit and is identified in Condition 7.1.2.
- b. Pursuant to the Petroleum Refinery NSPS, 40 CFR 60 Subpart J, either by date constructed or as a result of a Consent Decree with the USEPA, all emissions units listed in Condition 7.1.2 shall not burn any fuel gas that contains H₂S in excess of 0.10 gr/dscf on an average 3-hour rolling basis. [40 CFR 60.104(a) (1) and 60.105(e) (3) (ii)]
- c. No person shall cause or allow the emission of carbon monoxide (CO) into the atmosphere from any fuel combustion emission source with actual heat input greater than 10 mmBtu/hr to exceed 200 ppm, corrected to 50 percent excess air [35 IAC 216.121].
- d. Each affected process heater or boiler is also subject to the limits in Condition 5.2.2(b).
- e. Boilers 3 and 4 and the CO Boiler are subject to the NO_x trading program described in further detail in Section 6 of this permit.
- f. Although the 1F-1 process heater acts as control device for a NESHAP Group 1 process vent and therefore subject to 40 CFR 63 Subpart CC, the 1F-1 process heater is exempt from monitoring requirements because it has a design heat input capacity greater than or equal to 44 megawatts. [40 CFR 63.644(a) (3)] The requirements for operation as a control device are listed in the condition for the unit controlled. See Condition 7.5.3(c).
- g. 35 IAC 217.121 limits NO_x emissions from new fuel combustion emission units with a firing rate equal to or greater than 250 mmBtu/hr. This limit applies to the 1F-1, 1F-2, 3F-1, 3F-2, and 16F-3 process heaters.
- h. For the affected boilers, emissions of SO₂ cannot exceed 1.0 pound per mmBtu of actual heat input when residual fuel oil is burned or 0.3 pounds per mmBtu of actual heat input when distillate fuel oil is burned [35 IAC 214.161].

- i. i. In accordance with 35 IAC 214.162 for the affected boilers, emissions of sulfur dioxide into the atmosphere in any one hour period from any fuel combustion emission source burning simultaneously any combination of liquid and gaseous fuel to exceed the allowable emission rate determined by the following equation:

$$E = BY + CZ$$

- ii. Where

E = Allowable SO₂ emission rate (lb/hr)

B = 0.3 lb/mmBtu for distillate fuel oil

Y = Distillate fuel oil heat input

C = 1.0 lb/mmBtu for residual fuel oil

Z = Residual fuel oil heat input.

- iii. The portion of the actual heat input that is derived:
 - A. From the burning of gaseous fuels produced by the atomization of distillate fuel oil shall be included in Y;
 - B. From the burning of gaseous fuels produced by the atomization of residual fuel oil shall be included in Z;
 - C. From the burning of gaseous fuels produced by the atomization of any other liquid fuel shall be included in Z; and
 - D. From the burning of by-product gases such as those produced from a catalyst regeneration unit in a petroleum refinery shall be included in Z.

7.1.4 Non-Applicability of Regulations of Concern

- a. The refinery NESHAP (40 CFR 63 Subpart CC) only applies to certain "petroleum refining process units." The emission units listed in 7.1.2 are fuel combustion devices and do not qualify as petroleum refining process units.
- b. The rule for SO₂ limits from a combination of fuels (35 IAC 214.162) does not apply to the affected

process heaters since all of these units burn gaseous fuels only and not liquid or solid fuels.

- c. This permit is issued based on the affected process heaters and boilers not being subject to 35 IAC 214.301 because the process heaters and boilers are not process emission sources but rather fuel combustion emission units.
- d. The NO_x Trading Program, 35 IAC 217 Subpart U does not apply to process heaters, only to boilers.

7.1.5 Operational Limits

- a. Only gaseous fuels shall be burned in the affected process heaters.
- b. i. The firing rate of the affected process heaters listed below shall not exceed the following [T1R]. Some of these values may be slight revisions to previously permitted values.

<u>Heater</u>	<u>Firing Rate</u> mmBtu/Hr 12-Month Rolling <u>Average</u>		<u>Permit</u>	<u>HHV/LHV</u>
	1F-1	483		
1F-2	90	01090064	LHV	
8F-1	52	01090064	LHV	
23F-1	41	01090064	LHV	
87F-103	98	72110548, 01090064	LHV	
90F-1	122	01090064	LHV	
90F-2	50	01090064	LHV	
16F-1	40	02090015	LHV	
16F-2	37.5	02090015	LHV	
16F-3	568	02090015	LHV	
16F-4	46	02090015	LHV	
69F-1A	54	91100093	LHV	
69F-1B	54	91100093	LHV	
69F-2	80	91100093	LHV	
74F-1	29.6	03030085	HHV	
74F-2	99.1	03030085	HHV	

- ii. NO_x emissions from distillate hydrotreater heaters 69F-1A and 69F-1B shall not exceed 0.07 lb/mmBtu. NO_x emissions from distillate hydrotreater heater 69F-2 shall not exceed 0.06 mmBtu. [T1, 91100093]

- c. i. The Permittee shall operate a selective catalytic reduction (SCR) unit on affected heater 1F-1 for the reduction of NO_x emissions. [T1, 01090064]
- ii. For the SCR Unit, the Permittee shall operate in accordance with written procedures developed by the Permittee, including periodic inspection, routine maintenance and prompt repair of defects. [T1, 01090064]
- d. Particulate matter emissions from process heaters 16F-1, 16F-2, 16F-3, and 16F-4 shall not exceed 0.1 lb/mmBtu heat input. Overall nitrogen oxide emissions from process heaters 16F-1, 16F-2, and 16F-4 shall not exceed 0.3 lb/mmBtu. [T1, 82020033]
- e. Operation of the FCCU Charge Heater (82F-2) shall not exceed 859 mmscf/year of fuel gas on a 12-month rolling average basis. [T1, 99020080]

7.1.6 Emission Limitations

In addition, the affected process heaters are subject to the following:

- a. i. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total). Annual emissions from the affected heaters as indicated shall not exceed the following limits [T1]:

<u>Pollutant</u>	<u>E M I S S I O N S</u> <u>(Tons/Year)</u>			
	<u>Heater No.</u>			
	<u>1F-1</u>	<u>1F-2</u>	<u>8F-1</u>	<u>23F-1</u>
NO _x	40.0	51.8	22.8	18.0
SO ₂	56.9	10.6	6.1	4.8
CO	105.8	19.7	11.4	9.0
PM	21.2	3.0	1.7	1.4
VOM	11.6	2.2	1.3	1.0
Permit No.	01090064	01090064	01090064	01090064

<u>Pollutant</u>	<u>87F-103</u>	<u>90F-1</u>	<u>90F-2</u>
NO _x	42.9	149.6	21.9
SO ₂	11.5	14.4	5.9
CO	21.5	26.7	11.0
PM	3.3	4.1	1.7
VOM	2.4	2.9	1.2
Permit No.	01090064	01090064	01090064

<u>Pollutant</u>	<u>4F-1 thru 4F-4, Combined</u>	<u>16F-1 thru 16F-4 Combined</u>
NO _x	80.5	163.0
SO ₂	21.7	33.3
CO	67.6	234.8
PM	6.1	23.7
VOM	---	17.1
Permit No.	03060001	02090015

<u>Pollutant</u>	<u>3F-1 and 3F-2 (Each)</u>	<u>74F-1</u>	<u>74F-2</u>
NO _x	98.2	5.4	18.0
SO ₂	33.2	3.6	12.2
CO	103.2	6.7	22.4
PM	9.3	1.0	3.4
VOM	6.8	0.7	2.5
Permit No.	99020080	03030085	03030085

<u>Pollutant</u>	<u>82F-2</u>
NO _x	42.9
SO ₂	11.6
CO	36.1
PM	3.3
VOM	2.4
Permit No.	99020080

<u>Pollutant</u>	<u>69F-1A</u>	<u>69F-1B</u>	<u>69F-2</u>
NO _x	16.6	16.6	21.0
SO ₂	9.0	9.0	13.6
CO	8.3	8.3	12.6
Permit No.	91100093	91100093	91100093

- ii. Annual emissions shall not exceed the following limits. Compliance with these limits shall be determined from a running total of 365 days of data.

<u>Emission Unit</u>	<u>NO_x Annual Emission Limit (tons/year)</u>
1F-1, 1F-2, Boilers 3, 4, 5, 6	2,039
Permit No.	96080079

- b. Monthly emissions from the affected heaters as indicated shall not exceed the following limits:

<u>Pollutant</u>	E M I S S I O N S (Tons/Month)			
	Heater No.			
	<u>1F-1</u>	<u>1F-2</u>	<u>8F-1</u>	<u>23F-1</u>
NO _x	6.7	8.6	3.8	3.0
SO ₂	9.5	1.8	1.0	0.8
CO	17.6	3.1	1.9	1.5
PM	3.5	0.5	0.3	0.2
VOM	1.9	0.4	0.2	0.2
Permit No.	01090064	01090064	01090064	01090064

<u>Pollutant</u>	E M I S S I O N S (Tons/Month)		
	Heater No.		
	<u>87F-103</u>	<u>90F-1</u>	<u>90F-2</u>
NO _x	7.2	24.9	3.7
SO ₂	1.9	2.4	1.9
CO	3.6	4.5	1.8
PM	0.6	0.7	0.3
VOM	0.4	0.5	0.2
Permit No.	01090064	01090064	01090063

<u>Pollutant</u>	4F-1 thru 4F-4,	16F-1 thru 16F-4
	<u>Combined</u>	<u>Combined</u>
NO _x	13.5	27.2
SO ₂	3.7	5.5
CO	11.3	39.1
PM	1.1	4.0
VOM	---	2.9
Permit No.	03060001	02090015

<u>Pollutant</u>	<u>3F-1 and 3F-2 (Each)</u>	<u>74F-1</u>	<u>74F-2</u>
NO _x	16.3	0.9	3.0
SO ₂	5.5	0.6	2.1
CO	17.2	1.2	3.7
PM	1.5	0.2	0.5
VOM	1.1	0.2	0.6
Permit No.	99020080	03030085	03030085

<u>Pollutant</u>	<u>82F-2</u>
NO _x	7.1
SO ₂	1.9
CO	6.0
PM	0.5
VOM	0.4
Permit No.	99020080

- c. The limits in Condition 7.1.6(a) and (b) are based on the maximum firing rate, continuous operation, and AP-42 emission factors for pollutants not set by the permit (e.g., NO_x or NSPS limit on sulfur content).

The above limitations may contain revisions to previously issued permits. The source has requested that the Illinois EPA establish conditions in this permit that allow various refinements from the conditions of this aforementioned permit, consistent with the information provided in the CAAPP application. The source has requested these revisions and has addressed the applicability and compliance of Title I of the CAA, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and/or 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits continue to ensure that the construction and/or modification addressed in this permit does not constitute a new major source or major modification pursuant to these rules. These limits are the primary enforcement mechanism for the equipment and activities permitted in this permit and the information in the CAAPP application contains the most current and accurate information for the source. Specifically, the construction permits were issued over a number of years and adjustments may have been made to reflect revised emission factors and changes from hourly to monthly short term limits. The heaters themselves were not changed.

7.1.7 Testing Requirements

Within 90 days of a written request from the Illinois EPA, the Permittee shall conduct an emissions test to demonstrate compliance with the NO_x emission rate in lb/mmBtu for units with specific emission rates in Condition 7.1.5 or Condition 7.1.3(f).

7.1.8 Monitoring Requirements

- a. Fuel Gas Analysis for H₂S

Pursuant to the requirements of the NSPS specified in Condition 7.1.3(b), the Permittee has chosen to continuously monitor at multiple locations that accurately represent the concentration of H₂S in the fuel gas being burned. Any performance evaluation required pursuant to 40 CFR 60.13(c) for the H₂S monitor shall use Performance Specification 7. Method 11, 15, 15A, or 16 shall be used for conducting the relative accuracy evaluations (40 CFR 60.105(a)(4)).

- b. The Permittee shall comply with the monitoring requirements specified in 40 CFR 60.105(a)(3) for the affected heater 1F-1 by installing, calibrating, maintaining, and operating an instrument for continuously monitoring and recording the concentration by volume (dry basis, zero percent excess air) of SO₂ emissions into the atmosphere from each affected heater. The monitor shall include an oxygen monitor correcting the data for excess air.
- c. For the affected heater 1F-1, the Permittee shall install, calibrate, maintain and operate a continuous emissions monitoring system (CEMS) to continuously monitor emissions of NO_x into the atmosphere. The CEMS shall operate in accordance with the requirements of 40 CFR 60.11, 60.13, and 40 CFR 60, Appendix A and the applicable performance specification test of 40 CFR 60, Appendices B and F. With respect to 40 CFR 60, Appendix F, in lieu of the requirements of 40 CFR 60, Appendix F, Sections 5.1.1, 5.1.3, and 5.1.4, the Permittee shall conduct either a Relative Accuracy Audit ("RAA") or a Relative Accuracy Test Audit ("RATA") once every twelve calendar months, provided that a Cylinder Gas Audit is conducted each calendar quarter.

7.1.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected process heater and boiler to demonstrate compliance with Conditions 7.1.3, 7.1.5, and 7.1.6, pursuant to Section 39.5(7)(b) of the Act:

- a. A continuous record of the H₂S concentration in the fuel gas systems used for the process heaters subject to NSPS. From this continuous "recording", the Permittee shall calculate a rolling 3-hour average. Only the rolling 3-hour averages are required to be kept for five years. Note that there are 24 three-hour averages.
- b. For the affected heater 1F-1, the Permittee shall maintain records of the concentration by volume (dry basis, zero percent excess air) of SO₂ emissions into the atmosphere.
- c. i. Firing rate of any affected heater with a limit listed in Condition 7.1.5(b). The firing rate is calculated in mmBtu/hr on a 12-month rolling average and based on the heating value basis specified in Condition 7.1.5(b).

- ii. Heat content of the fuel gas (Btu/scf).
- d. Records showing the design firing rate of each unit with backup calculations.
- e. NO_x, CO, SO₂, PM, and VOM emissions (ton) for individual units or groups of units combined as necessary to determine compliance with Condition 7.1.6, using the compliance procedures in Condition 7.1.12.

7.1.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of the affected process heater with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. Any exceedance of the concentration of H₂S in the fuel gas above the NSPS allowable level of 0.1 gr/dscf (160 ppmv). Pursuant to 40 CFR 60.105(e)(3)(ii), exceedances are determined using rolling 3-hour periods.
- b. Any exceedance of the concentration of SO₂ for the 1F-1 Heater.
- c. Any exceedance of the firing rate allowed by Condition 7.1.5 or monthly or annual emission limits in Condition 7.1.6.

7.1.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.1.12 Compliance Procedures

- a. Compliance with applicable rules is assured by operation of the heaters and boilers according to manufacturer's or industry recommended practices, monitoring as required by Condition 7.1.8 and keeping records as required by Condition 7.1.9.
- b. Except for SO₂ emissions, emissions shall be calculated using permit emission factors or AP-42 emission factors (Table 1.4-1, 5th Edition, March, 1998) for natural gas boilers if permit emission factors are not available. These factors are as follows:

	Emission Factor ^a (lb/10 ⁶ scf)	
	Firing Rate	
	Less Than <u>100 mmBtu/hr</u>	Greater Than <u>100 mmBtu/hr</u>
NO _x - Standard Burner	100	280
NO _x - Low NO _x Burner	50 ^b	140 ^b
CO	84 ^b	84 ^b
PM	7.6	7.6
VOM	5.5	5.5

^a These values may be updated as published factors are revised or as additional stack test results become available.

^b These values do not apply if Condition 7.1.6 requires a different value such as heater 1F-1 which has an SCR control device. The CO value may also be different for those fuel combustion units as some low NO_x burners have higher CO emissions. For the 1F-1 heater controlled by a SCR device, the results of emission testing shall be used.

- c. SO₂ shall be calculated using the monitored H₂S content of the gas, the Btu value of the gas, gas usage, and stoichiometric conversion of H₂S to SO₂.
- d. Emissions (lb/mo) = Gas Usage (mmscf/mo) x Heating Value of Gas (Btu/scf) x Emission Factor (lb/mmBtu)

7.2 Unit: Storage Tanks
Control: See Section 7.2.2

7.2.1 Description

The Robinson Refinery is typical of refineries in that it has many storage tanks. These may contain liquids such as crude oil, gasoline, chemical additives, or wastewater. Tanks that store fuel oils and other materials that have a low vapor pressure are included in Section 3 as insignificant emission units. Additional information related to the wastewater treatment system tanks is located in Section 7.12.

The refinery storage tanks subject to regulatory requirements are listed in several tables in Section 10.1, Attachment 1. Table 1 is a list of internal floating roof tanks, Table 2 is a list of external floating roof tanks, and Table 3 is a list of fixed roof tanks. These specific regulatory applicability associated with each tank has been identified for each tank for reference.

7.2.2 List of Emission Units and Air Pollution Control Equipment

See Section 10.1, Attachment 1 - List and Details of Storage Tanks.

7.2.3 Applicability Provisions and Applicable Regulations

- a. An "affected storage tank" for the purpose of these unit-specific conditions, is an existing tank capable of storing VOM and listed in Attachment 1. The regulatory applicability associated with each tank, as shown in Section 10.1, Attachment 1, is implied in this definition (i.e., if a tank is subject to NSPS Kb, it is a "Kb affected storage tank".)
- b. All of the affected storage tanks are subject to the control requirements of 35 IAC 215.122(b). Other specific regulatory applicability is identified in Tables in Section 10.2, Attachment 1.
- c. Each affected storage tank subject to 40 CFR 63 Subpart CC (40 CFR 63 Subpart G) Group 1 controls is hereby shielded from compliance with 35 IAC 215.121, 123, and 124. This shield is issued to streamline the applicable requirements for the source based on the Illinois EPA's finding that compliance with 40 CFR 63 Subpart CC assures compliance with 35 IAC 215.121, 215.123 and 215.124.
- d. Each tank in Tables 1, 2, or 3 that was constructed, reconstructed, or modified after June 11, 1973 is subject to NSPS 40 CFR 60 Subpart K (June 11, 1973 to

May 19, 1978), Ka (May 1978 to July 23, 1984) or Kb (after July 23, 1984). If the tank was constructed, reconstructed, or modified before July 14, 1994 and is subject to a NSPS, the tank can comply with the NSPS requirements but must also comply with the NESHAP 40 CFR 63 Subpart CC periodic reporting requirements.

- e. For each tank that is not a 40 CFR 63 Subpart CC Group 1 tank solely due to HAP content, the Permittee must either comply with 40 CFR 63 Subpart CC or 35 IAC 215.121, 215.123 and 215.124, or 40 CFR 60 Subparts K, Ka or Kb depending on date of construction, reconstruction, or modification.

7.2.4 Non-Applicability of Regulations of Concern

None

7.2.5 Control Requirements

- a. Each affected storage tank equipped with an external floating roof shall comply with the following requirements, as applicable:
 - i. Covered external floating roof tanks may comply with the requirements for internal floating roof tanks per Condition 7.2.5(b);
 - ii. Each external roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. The closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal. The primary seal shall be either a metallic/mechanical shoe seal or a liquid-mounted seal; and the primary seal and secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion except during the inspections required by Condition 7.2.8. [40 CFR 60.112b(a)(2)(i), 40 CFR 63.119(c)(1)]
 - iii. All drains (for drainage of rainwater, also know as "stub drains") in the floating roof deck shall be provided with slotted membrane fabric covers or equivalent covers across at least 90 percent of the area of the opening. [35 IAC 215.124(a)(3)]
 - iv. All openings of the floating roof deck, other than drains, vacuum breaker vents, and rim

space vents, shall be equipped with projections into the tank which remain below the liquid surface at all times except when supported on the roof legs and openings (except leg sleeves) will be equipped with covers, lids, or seals. [35 IAC 215.123(b) (3), 35 IAC 215.124(a) (4)]

- v. The covers, lids or seals on openings of the external floating roof deck other than stub drains shall be operated such that the following requirements are met:
 - A. The cover, lid or seal is in the closed position at all times except when the cover or lid must be open for access or liquid transferred to or from the tank. [35 IAC 215.123(b) (3) (A), 40 CFR 63.646(f) (1)]
 - B. Rim space vents, if provided, are set to open only when the roof is not floating or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting. [35 IAC 215.123(b) (3) (C), 40 CFR 63.646(f) (2)]
 - C. Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. [35 IAC 215.123(b) (3) (B), 40 CFR 63.646(f) (3)]
- vi. For NSPS Kb affected storage tanks, except for automatic bleeder vents and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal, or lid that is to be maintained in a closed position at all times (i.e. no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof legs supports. Rim vents are to be set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents are to be gasketed. Each emergency roof drain is to be provided with a

slotted membrane fabric cover that covers at least 90 percent of the area of the opening. [40 CFR 60.112b (a) (2) (ii)]

b. Each affected internal floating roof storage tank shall comply with the following requirements, as applicable, which requires the use of an internal floating roof or an external floating roof converted to an internal floating roof by the addition of a fixed roof (cover).

i. Each internal floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. The closure device shall consist of one of the following:

A primary seal that is either a metallic/mechanical shoe seal or a liquid mounted seal; [40 CFR 60.112b(a) (1) (ii) (A) and (C), 40 CFR 63.119(b) (3) (i) and (ii)] or

Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof except during the inspections required by Condition 7.2.8. The lower seal may be vapor-mounted, but both must be continuous seals. [40 CFR 60.112b(a) (1) (ii) (B), 40 CFR 63.119(b) (3) (iii)]

ii. The covers, lids or seals on openings of the internal floating roof deck other than stub drains shall be operated such that the following requirements are met:

A. If a cover or lid is installed on an opening on a floating roof, the cover or lid shall remain closed except when the cover or lid must be open for access. [40 CFR 63.646(f) (1)]

B. Rim space vents, if provided, are to be set to open only when the floating roof is not floating or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting. [40 CFR 63.119(b) (6), 40 CFR 63.646(f) (2)]

C. Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg

supports. [40 CFR 63.119(b)(4), 40 CFR 63.646(f)(3)].

- iii. For affected storage tanks subject to NSPS KB, each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and rim space vents is to provide a projection below the liquid surface [40 CFR 60.112b(a)(iii)].
- iv. For affected storage tanks subject to NSPS Kb, each opening in a internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use [40 CFR 60.112b(a)(iv)].
 - A. Each penetration of the internal floating roof for the purposes of sampling shall be a sample well. Each sample well shall have a slit fabric cover that covers at least 90 percent of the opening [40 CFR 60.112b(a)(vii)].
 - B. Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover [40 CFR 60.112b(a)(ix)].
 - C. Each penetration of the internal floating roof that allows for the passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover [40 CFR 60.112b(a)(viii)].
- c. Each affected storage tank equipped with a closed vent system and control device shall meet the following specifications:
 - i. For affected storage tanks subject to NSPS Kb, the closed vent system shall be designed to collect all VOC vapors and gases discharged from the storage vessel and operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background and visual inspections, as

determined in 40 CFR Part 60, Subpart VV, §60.485(b) [40 CFR 60.112b (a) (3) (i)].

- ii. For affected storage tanks subject to NSPS Kb, the control device shall be designed and operated to reduce inlet VOC emissions by 95 percent or greater. If a flare is used as the control device, it shall meet the specifications describe in the general control device requirements (§ 60.18) of the General Provisions [40 CFR 60.112b (a) (3) (ii)].
- iii. For affected storage tanks subject to 40 CFR 63, Subpart CC, the control device shall be designed and operated to reduce inlet emissions of total organic HAP by 95 percent or greater. If a flare is used as the control device, it shall meet the specifications described in the general control device requirements of 40 CFR § 63.11(b). Periods of planned routine maintenance of the control device, during which the control device does not meet the specifications of this section, as applicable, shall not exceed 240 hours per year. The specifications and requirements Section 7.2.5(c) (iii) do not apply during periods of planned routine maintenance or during a control system malfunction [40 CFR 63.119(e)].

7.2.6 Emission Limitations

In addition to Condition 5.2.2, some specific affected tanks are subject to the following maximum values:

The following limitations were established in permit, pursuant to 35 IAC Part 203. These limits ensure that the construction and/or modification addressed in the listed permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically 35 IAC Part 203.

Tank Identification	State Permit	Limit(s)
21D-68	91110002	Emission limits in review as part of MAP Tank Consent Decree ^a
21D-800	72110556	Emission limits in review as part of MAP Tank Consent Decree ^a
21D-801	72110556	Emission limits in review as part of MAP Tank Consent Decree ^a

Tank Identification	State Permit	Limit(s)
21D-808	72110556	Emission limits in review as part of MAP Tank Consent Decree ^a
21D-815	72110556	Emission limits in review as part of MAP Tank Consent Decree ^a
21D-817	72110556	Emission limits in review as part of MAP Tank Consent Decree ^a
21D-1019	72110556	Emission limits in review as part of MAP Tank Consent Decree ^a
21D-1027	72110556 01120036	Emission limits in review as part of MAP Tank Consent Decree ^a
21D-1033	72110556	Emission limits in review as part of MAP Tank Consent Decree ^a
71D-2	72110556	Emissions not to exceed 0.1 TPY
73D-3	92010023	Emissions not to exceed 0.044 TPY Storage Tank vented to Carbon Canister
73D-4	92010023	Emissions not to exceed 0.044 TPY Storage Tank vented to Carbon Canister
90D-13	72110553	Emissions not to exceed 0.044 TPY
90D-14	72110553	Emissions not to exceed 0.044 TPY

^a The limits for these tanks that were in the state permits are not listed here as new values and other additional requirements are in settlement negotiations between the Attorney General representing the Illinois EPA and the Permittee. When a Consent Decree is issued the Permittee must comply with the new limits and incorporate the new limits into this CAAPP permit.

7.2.7 Operating Requirements

- a. Each affected storage tank equipped with an external floating roof shall be operated in compliance with the following operating requirements, as applicable:
 - i. The tank will be operated in compliance with the controls and conditions identified in Condition 7.2.5(a).

- ii. The external floating roof shall be floating on the liquid surface at all times, except during those intervals when the storage tank is being completely emptied and subsequently refilled and the roof rests on its leg supports. When the roof is resting on its leg supports, the process of emptying or refilling shall be continuous and shall be accomplished as rapidly as possible [40 CFR 60.112b(a)(2)(iii), 40 CFR 63.119(c)(3) and (4)].
- iii. For primary seals that use a mechanical/metallic shoe seal, one end of the mechanical/metallic shoe shall extend into the stored liquid and the other end shall extend a minimum vertical distance of 61 centimeters above the stored liquid surface and there shall be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope [40 CFR 60.113b(b)(4)(i)(A) and (B), 40 CFR 63.120(b)(5)(i) and (ii)].
- iv. The secondary seal shall be installed above the primary so it completely covers the space between the roof edge and the vessel wall except as provided in Condition 7.2.7(vi), and there shall be no holes, tears, or other openings in the seal or seal fabric [40 CFR 60.113b(b)(4)(iii)(A) and (C), 40 CFR 63.120(b)(6)(i) and (ii)].
- v. For affected storage tanks subject to 40 CFR 63 Subpart CC Group 1 requirements, the Permittee shall add the gap surface area of each gap location for the primary seal and divide the sum by the nominal diameter of the vessel. The accumulated area of gaps between the vessel wall and the primary seal shall not exceed 212 square centimeters per meter (10 square inches per foot) of vessel diameter and the width of any portion of any gap shall not exceed 3.81 centimeters (1.5 inches) [40 CFR 63.120(b)(3)].
- vi. The Permittee shall add the gap surface area of each gap location for the secondary seal and divide the sum by the nominal diameter of the vessel. The accumulated area of gaps between the vessel wall and the secondary seal shall not exceed 21.2 square centimeters per meter (1 square inch per foot) of vessel diameter and the width of any portion of any gap shall not exceed 1.27 centimeters (0.5

inches). These seal gap requirements may be exceeded during the measurement of the primary seal gaps as required by Condition 7.2.8. There are to be no holes, tears, or other openings in the seal or seal fabric [35 IAC 215.124(a)(2)(B), 40 CFR 60.113b(b)(4)(ii)(B) and (C), 40 CFR 63.120(b)(4)].

- vii. No person shall cause or allow the emissions of air contaminants into the atmosphere from any gauging or sampling devices attached to an affected tank, except during sampling or maintenance operations [35 IAC 215.121(b)(1)].
 - viii. A tank that is in-service shall be repaired or emptied within 45 days upon identification in an inspection that the accumulated area of gaps between the tank wall and primary seal exceed 212 cm² per meter (10 square inches per foot) of tank diameter and the width of any portion of any gap exceeds 3.81 cm (1.5 inches), the secondary seal does not completely cover the space between the tank wall, the accumulated area of gaps between the tank wall and the secondary seal exceeds 21.2 cm² per meter (1 square inch per foot) of tank diameter and the width of any portion of any gap exceed 1.27 cm (0.5 inches), or there are holes or tears in the seal fabric or seal envelope of either the primary or secondary seal. These actions shall be completed within 45 days of the inspection unless an extension is granted [40 CFR 60.113b(b)(4), 40 CFR 63.120(b)(8)].
 - ix. A tank that is empty shall be repaired prior to refilling the tank upon identification in an inspection that the floating roof has defects, the primary seal has holes, tears or other openings in the seal or seal fabric, or the secondary seal has holes, tears or other openings in the seal or seal fabric [40 CFR 63.120(b)(10)(i)].
- b. Each internal floating roof affected storage tank shall be operated in compliance with the following operating requirements:
- i. The tank will be operated in compliance with the controls and conditions identified in Condition 7.2.5(b).

- ii. The internal floating roof shall be floating on the liquid surface at all times, except during those intervals when the storage tank is being completely emptied and subsequently refilled and the roof rests on its leg supports. When the roof is resting on its leg supports, the process of filling, emptying or refilling shall be continuous and shall be accomplished as rapidly as possible [40 CFR 60.112b(a)(1)(i), 40 CFR 63.119(b)(1)].
 - iii. No person shall cause or allow the emissions of air contaminants into the atmosphere from any gauging or sampling devices attached to an affected tank, except during sampling or maintenance operations [35 IAC 215.121(b)(1)].
 - iv. A tank that is in-service shall be repaired or emptied within 45 days upon identification in an inspection that the internal floating roof is not resting on the surface of the liquid inside the affected storage tank and is not resting on the leg supports, there is liquid on the floating roof, the seal is detached, or there are visible gaps between the seal and the wall of the affected tank. These actions shall be completed within 45 days of the inspection unless an extension is utilized [40 CFR 60.113b(a)(2), 40 CFR 63.120(a)(4)].
 - v. If a defect is found during an out-of-service inspection, the defect shall be repaired prior to refilling of the tank [40 CFR 63.120(a)(7)].
 - vi. A tank that is empty shall be repaired prior to refilling the tank upon identification in an inspection that the floating roof has defects, the primary seal has holes, tears or other openings in the seal or seal fabric, or the secondary seal (if one is present) has holes, tears or other openings in the seal or seal fabric, or gaskets no longer close off the liquid surface, or the slotted membranes have >10% open area [40 CFR 63.120(a)(7), 60.113b(a)(1)].
- c. For affected storage tanks subject to NSPS Kb, each vessel storing a waste mixture of indeterminate or variable composition shall be subject to the following requirements:

- i. Prior to the initial filling of the vessel, the highest maximum true vapor pressure for the range of anticipated liquid compositions to be stored will be determined [40 CFR 60.116b(f) (1)].
 - ii. For vessels in which the vapor pressure of the anticipated liquid composition is above the cutoff for monitoring but below the cutoff for controls as defined in §60.112b(a), an initial physical test of the vapor pressure is required; and a physical test is required at least once every 6 months thereafter [40 CFR 60.116b(f) (2)].
- d. Each affected storage tank subject to NSPS Kb equipped with a closed vent system and control device shall be operated in compliance with the following requirements:
- i. Each vessel equipped with closed vent and control device is exempt from true vapor pressure monitoring requirements [40 CFR 60.116b(g)].
 - ii. For control devices other than a flare, operate the closed vent system and control device and monitor the parameters of the closed vent system and control device in accordance with the operating plan submitted to the Administrator, unless the plan was modified by the Administrator during the review process. In this case, the modified plan applies [40 CFR 60.113b(c) (2)].
 - iii. For a closed vent system and a flare, the Permittee shall meet the requirements specified in the general control device requirements, 40 CFR 60.18(e) and (f) [40 CFR 60.113b(d)].

7.2.8 Inspection Requirements

- a. The Permittee shall fulfill the applicable testing and procedures requirements of for each affected storage tank equipped with an external floating roof as follows:
 - i. External floating roofs shall be inspected as follows:
 - A. Inspections are conducted prior to May 1 of each year to insure compliance with 35 IAC 215.124(a) [35 IAC 215.124(a) (5)].

- B. The secondary seal gap is measured prior to May 1 of each year [35 IAC 215.124(a)(6)].
 - C. If any storage vessel is out of service for a period of one year or more, subsequent refilling with volatile organic liquid shall be considered an initial fill [40 CFR 60.113b(b)(iii)].
- ii. Except as provided in (ii) below, the Permittee shall measure gaps between the tank wall and the secondary seal within 60 days of the initial fill and at least once per year (Annual Inspection) and the primary seals within 60 days of the initial fill and at least once every five years (Five Year Inspection). The measurement shall be conducted in accordance with the following methods and procedures: [35 IAC 215.125(a), 40 CFR 60.113b(b)(1)(i) and (ii), 40 CFR 63.120(b)(1) and (4)]
- A. Measure seal gaps, if any, at one or more floating roof levels when the roof is not resting on the roof leg supports [40 CFR 60.113b(b)(2)(i), 40 CFR 63.120(b)(2)(i)].
 - B. Measure seal gaps around the entire circumference of the vessel in each place where a 0.32-cm diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the storage vessel and the circumferential distance of each such location [40 CFR 60.113b(b)(2)(ii), 40 CFR 63.120(b)(2)(ii)].
 - C. The total surface area of each gap shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance; [40 CFR 60.113b(b)(2)(iii), 40 CFR 63.120(b)(2)(iii)].
 - D. Add the gap surface area of each gap location for the primary and secondary seal individually and divide the sum by the nominal diameter of the tank and compare each ratio to the respective

requirement of Conditions 7.2.7(a)(v) and (a)(vi) [40 CFR 60.113b(b)(3), 40 CFR 63.120(b)(3) and (4)].

E. Thirty (30) days prior notification for the above inspection shall be given to the Illinois EPA as specified in Condition 7.2.10(b) [40 CFR 60.113b(b)(5), 40 CFR 63.120(b)(9)].

iii. If the owner or operator determines that it is unsafe to perform the seal gap measurements or to inspect the vessel to determine compliance with Conditions 7.2.7(a)(v) or (a)(vi) because the floating roof appears to be structurally unsound and poses an imminent or potential danger to inspecting personnel, the owner or operator shall comply with the following requirements:

A. The owner or operator shall measure the seal gaps or inspect the storage vessel no later than 30 calendar days after the determination that the roof is unsafe, or [40 CFR 63.120(b)(7)(i)]

B. The owner or operator shall empty and remove the storage vessel from service no later than 45 calendar days after determining that the roof is unsafe unless the vessel cannot be emptied and the owner or operator has elected to utilize an extension of up to 30 calendar days and maintains the records required by Condition 7.2.9(c). A maximum of one (for tanks subject to 40 CFR 60, Subpart Kb) or two extensions may be utilized for an occurrence [40 CFR 60.113b(b)(4)(iii), 40 CFR 63.120(b)(7)(ii)].

iv. Visually inspect the external floating roof, the primary seal, the secondary seal, and fittings each time the storage vessel is emptied and degassed (Out-of-Service Inspection) to identify any deficiency or shortcoming in the roof's features, (i.e., external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric). The Permittee shall repair the features prior to refilling the storage tank with volatile

organic liquid [40 CFR 60.113b(b) (6) (i), 40 CFR 63.120(b) (10) (i)].

Thirty (30) days prior notification for the above inspection shall be given to the Illinois EPA as specified in Condition 7.2.10(a) [40 CFR 60.113b(b) (6) (ii), 40 CFR 63.120(b) (10) (ii)].

- v. The owner or operator shall repair conditions that do not meet the seal gap criteria or if there are holes, tears, or other openings in shoe, seal fabric, or seals (i.e. failures) no later than 45 calendar days after identification, or shall empty and remove the storage vessel from service no later than 45 calendar days after identification. If a failure is detected that cannot be repaired within 45 calendar days and if the vessel cannot be emptied within 45 calendar days, the owner or operator may utilize up to one (for tanks subject to 40 CFR 60, Subpart Kb) or two extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include a description of failure, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as practical [40 CFR 60.113b(b) (4) (iii), 40 CFR 63.120(b) (8)].
 - vi. If the empty and degas inspection is not planned and the owner or operator could not have known about the inspection 30 calendar days in advance of refilling the vessel with organic HAP, the owner or operator shall notify the Illinois EPA at least 7 calendar days prior to refilling of the vessel. Notification may be made by telephone and immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent so that it is received by the Illinois EPA at least 7 calendar days prior to the refilling [40 CFR 63.120(b) (10) (iii)].
- b. The Permittee shall fulfill the applicable testing and procedures requirements for each affected internal floating roof tank equipped with an internal

floating roof or an external floating roof converted to an internal floating roof as follows:

- i. The Permittee shall fulfill the following criteria:
 - A. Routine inspections of floating roof seals are conducted through roof hatches once every six months, [35 IAC 215.123(b)(4)]. Unless subject to NSPS, then for Vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulate on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 calendar days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in § 60.115b(a)(3). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible [40 CFR 60.113b(a)(2)].
 - B. For affected storage tanks subject to NSPS Kb, for vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the volatile organic liquid inside the storage vessel, or there is

liquid accumulate on the roof, or the seal is detached, to there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 calendar days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Illinois EPA in the inspection report required in § 60.115b(a)(3). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible [40 CFR 60.113b(a)(2)].

- C. A complete inspection of the cover and seal of any floating roof tank is made whenever the tank is emptied for reasons other than the transfer of petroleum liquid during the normal operation of the tank, or whenever repairs are made as a result of any semi-annual inspection or incidence of roof damage or defect [35 IAC 215.123(b)(5)].
- ii. For each affected storage tank equipped with only a primary seal, the Permittee shall visually inspect the internal floating roof and the seal through manholes and roof hatches on the fixed roof at least once per year (Annual Inspection) and visually inspect the internal floating roof and the seal each time the affected tank is emptied and degassed, and at least once every 10 years (Out-of-Service Inspection) [40 CFR 60.113b(a)(2), 40 CFR 63.120(a)(2)(i) and (ii)].
- iii. For each affected tank equipped with a double-seal system:
 - A. The Permittee shall visually inspect the internal floating roof, the primary seal, and the secondary seal each time the affected tank is emptied and degassed and at least once every 5 years (Five-Year Inspection); or [40 CFR 60.113b(a)(3)(i), 40 CFR 63.120(a)(3)(i)]

- B. The Permittee shall visually inspect the internal floating roof and the secondary seal through the manholes and roof hatches at least once per year (Annual Inspection) and visually inspect the internal floating roof, the primary seal, and the secondary seal each time the affected tank is emptied and degassed, and at least once every 10 years (Out-of-Service Inspection) [40 CFR 60.113b(a)(4), 40 CFR 63.120(a)(3)(ii) and (iii)].
- iv. Thirty (30) days prior notification for the above inspection shall be given to the Illinois EPA as specified in Condition 7.2.10(a) [40 CFR 60.113b(a)(5), 40 CFR 63.120(a)(5)].
- v. Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with volatile organic liquid. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years for vessels with a mechanical shoe primary seal or liquid mounted seal or at intervals greater than 5 years in the case of vessels with a double seal system [40 CFR 60.113b(a)(4)].
- vi. If during the annual inspections conducted through manholes and roof hatches, the internal floating roof is not resting on the surface of the liquid inside the storage vessel and is not resting on the leg supports; or there is liquid on the floating roof; or the seal is detached; or there are holes or tears in the seal fabric; or there are visible gaps between the seal and the wall of the storage vessel, the owner or operator shall

repair the items or empty and remove the storage vessel from service within 45 calendar days. If a failure that is detected during inspections cannot be repaired within 45 calendar days and if the vessel cannot be emptied within 45 calendar days, the owner or operator may utilize up to 2 extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include a description of the failure, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as practical [40 CFR 63.120(a)(4)].

- vii. If during the empty and degas inspections, the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, to the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with organic HAP [40 CFR 63.120(a)(7)].
- viii. If any source ceases to store volatile organic liquid for a period of 1 year or more, subsequent introduction of volatile organic liquid into the vessel shall be considered an initial fill [40 CFR 60.113b(b)(iii)].
- ix. If the inspection required by this section is not planned and the owner or operator could not have known about the inspection 30 calendar days in advance of refilling the vessel with organic HAP, the owner or operator shall notify the Illinois EPA at least 7 calendar days prior to refilling of the vessel. Notification may be made by telephone and immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent so that it is received by the Illinois EPA at least 7 calendar days prior to the refilling [40 CFR 63.120(b)(10)(iii)].

7.2.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected tank to demonstrate compliance with Conditions 7.2.3 through 7.2.8, pursuant to Section 39.5(7)(b) of the Act:

- a. A record of the results of each inspection conducted should be maintained [35 IAC 215.123(b)(6)].
- b. The Permittee shall fulfill the applicable recordkeeping requirements for each affected tank as follows:
 - i. Keep readily accessible records showing the dimensions of each affected tank for as long as the tank is in operation [40 CFR 63.116b(b)].
 - ii. Keep a record of all reports submitted including the Notification of Compliance Status, Periodic Reports, and other reports [40 CFR 63.654(e)].
 - iii. Keep a record of each Initial Fill, Annual, Five Year and Out-of-Service Inspection performed as required by Condition 7.2.8(a)(iii) and (a)(iv). The records shall include the following information:
 - A. The date the measurement was performed; [40 CFR 60.115b(b)(3)(i)]
 - B. The raw data obtained in the measurement; and [40 CFR 60.115(b)(3)(ii)]
 - C. The calculations described in Condition 7.2.8(a)(i)(C and D) [40 CFR 60.115b(b)(3)(iii)].
- c. The Permittee shall maintain records that are sufficient to identify whenever the tank is empty for any reason or whenever repairs are made as a result of regular inspection or incident of roof damage or defect for each affected tank to demonstrate compliance with the Out-of-Service Inspection requirements of Condition 7.2.8(a)(iv).
- d. The Permittee shall maintain records of the following for each seal inspection in which the decision was made to utilize an extension (as identified in

Condition 7.2.8(a)(iii)) because a determination was made that the roof was unsafe:

- i. Explanation of why it was unsafe to perform the inspection or seal gap measurement;
 - ii. Documentation that alternative storage was unavailable; and
 - iii. Specify a schedule of actions that will ensure the control equipment will be repaired or the affected tank will be emptied as soon as possible.
- e. The Permittee shall maintain records of the following for each seal inspection in which the decision was made to utilize an extension (as identified in Condition 7.2.7(a)(viii) or 7.2.7(b)(iv)) to repair the failure or empty the affected tank:
- i. Description of the failure;
 - ii. Documentation that alternative storage was unavailable; and
 - iii. Specify a schedule of actions that will ensure the control equipment will be repaired or the affected tank will be emptied as soon as possible.
- f. The Permittee shall maintain records to demonstrate compliance with the limits in Condition 7.2.6.
- g. The Permittee shall maintain records of the following equipment items for each affected storage tank to allow calculation of VOM emissions from the storage tanks so as to demonstrate compliance with the annual emission limitations in Condition 7.2.6 and for the purpose of quantifying emissions for the annual emission report. These records shall be updated whenever there is a change in status of a storage tank that is brought about by actions at the source, such as painting, and during periodic inspection:
- i. The color of each affected tank;
 - ii. The condition of each storage tank; and
 - iii. The type and number of fittings, or a statement that the default settings regarding type and number of fittings in the TANKS3 program are used for emission estimates.

- iv. The identification and properties of each organic liquid stored at the source, as related to emissions, i.e., true vapor pressure and molecular weight.
- v. The throughput (or change in tank level) of each organic liquid through each tank.
- h. For affected storage tanks subject to NSPS Subpart K, the Permittee shall maintain a record of the petroleum liquid stored, the period of storage, and the maximum true vapor pressure of the liquid during the respective storage periods [40 CFR 60.113(a)].
- i. Available data on the typical Reid vapor pressure and the maximum expected storage temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517, unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s) [40 CFR 60.113(b), 40 CFR 60.115a(b)].
- j. The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa (2.0 psia) or whose physical properties preclude determination by the recommended method is to be determined from available data and recorded if the estimated true vapor pressure is greater than 6.9 kPa (1.0 psia) or 3.5 kPa (0.5 psia) for Kb tanks [40 CFR 60.113(c), 40 CFR 60.115a(c), 40 CFR 60.116b(e) (2) (ii)].
- k. For other liquids, the vapor pressure:
 - i. May be determined by ASTM D2879-83, 96, or 97 (incorporated by reference -see § 60.17); or [40 CFR 60.116b(e) (3) (ii)]
 - ii. May be obtained from standard reference texts, or [40 CFR 60.116b(e) (3) (i)]
 - iii. May be measured by an appropriate method approved by the Illinois EPA; or [40 CFR 60.116b(e) (3) (iii)]
 - iv. May be calculated by an appropriate method approved by the Illinois EPA [40 CFR 60.116b(e) (3) (iv)].
- l. The following are exempt from the requirements of this section:

- i. Each owner or operator of each storage vessel storing a petroleum liquid with a Reid vapor pressure of less than 6.9 kPa (1.0 psia) provided the maximum true vapor pressure does not exceed 6.9 kPa (1.0 psia) [40 CFR 60.115a(d)(1)].
 - ii. The owner or operator of each storage vessel equipped with a vapor recovery and return or disposal system in accordance with the requirements of § 60.112a(a)(3) and (b), or a closed vent system and control device meeting the specifications of 40 CFR 65.42(b)(4), (b)(5), or (c) [40 CFR 60.115a(d)(2)].
- m. Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below.
- i. For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service [40 CFR 60.116b(e)(1)].
 - ii. For crude oil or refined petroleum products the vapor pressure may be obtained by using the available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517(incorporated by reference - see § 60.17), unless the Illinois EPA specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s) [40 CFR 60.116b(e)(2)(i)].
- n. For any fixed roof tank listed in Section 10.1, Attachment 1, Table 3 that was constructed, reconstructed, or modified after June 11, 1973, the Permittee shall keep records to verify that the tank is not subject to floating roof or seal requirement as a new source per 40 CFR 60 Subparts K, Ka, or Kb. These records may be capacity of the tank showing that it is below the applicable capacity or the vapor

pressure of the material stored showing that it is below the applicable vapor pressure.

- o. After installing control equipment in accordance with § 60.112b(a) (3) or (b) (1) (closed vent system and control device other than a flare), the owner or operator shall keep the following records [40 CFR 60.115b(c)].
 - i. A copy of the operating plan [40 CFR 60.115b(c) (1)].
 - ii. A record of the measured values of the parameters monitored in accordance with § 60.113b(c) (2) [40 CFR 60.115b(c) (2)].

7.2.10 Notification and Reporting Requirements

- a. The Permittee shall notify the Illinois EPA, Compliance Unit and Regional Field Office, when an affected storage tank has been emptied and degassed, and at least 30 days before the planned refilling of the tank with organic HAPs, so the Illinois EPA may inspect the affected tank prior to refilling, except as allowed in 40 CFR 63.654(h) (2) (i) (B). If the internal inspection is not planned and could not have known thirty (30) days in advance of refilling, then notify the Illinois EPA by telephone at least seven (7) days prior to refilling, followed by written documentation explaining the reason the inspection was planned [40 CFR 60.113b(b) (6) (ii), 40 CFR 63.654(h) (2) (i)].
- b. The Permittee shall notify the Illinois EPA, Compliance Unit and Regional Field Office, at least 30 days before the planned performance of seal gap measurements on external floating roof tanks so the Illinois EPA may observe the measurements. One notification may be made for a group of tanks [35 IAC 215.128(b)].

In addition, the Permittee shall comply with the notification requirements in 40 CFR 63.120(a) (6) and 63.120(b) (10) (iii) for unplanned activities.

- c. The Permittee shall promptly notify the Illinois EPA, Compliance Unit of noncompliance with the control, operating, or inspection requirements, as follows pursuant to Section 39.5(7) (f) (ii) of the Act:
 - i. Any storage of VPL in an affected storage tank that is not in compliance with the control requirements (due to absence of the features required by Condition 7.2.5), e.g., "no rim-

mounted secondary seal," within 5 days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps to be taken to avoid future non-compliance.

- ii. Any storage of VPL in an affected storage tank that is out of compliance with the control requirements (Condition 7.2.5) due to damage, deterioration, or other condition of the tank, within 30 days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps to be taken to avoid future non-compliance.
- d. Except for tanks equipped with a closed vent system and control device, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m³ storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa (0.75 psia) or with a design capacity greater than or equal to 75 m³ but less than 151 m³ storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa (4.0 psia) shall notify the Illinois EPA within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range [40 CFR 60.116b(d)].
- e. **Optional Notification Concerning Actual Contents of Tanks:** All tanks are assumed to contain materials that require compliance with rules specified in Condition 7.2.3. The Permittee may submit to the Illinois EPA an annual written statement prior to the beginning of each year (calendar or otherwise specified) of the contents of selected tanks that may negate part of the requirements specified in Condition 7.2.3. This applies to both 35 IAC, 40 CFR 60, 40 CFR 61, and 40 CFR 63 rules. For instance, the statement may list a low vapor pressure material (e.g., diesel oil) in tanks with floating roofs or the current material stored in a tank makes that tank not a Group 1 tank pursuant to the definition in 40 CFR 63 Subpart CC. The statement may then list ongoing requirements that will not have to be performed as a consequence of the different material, such as seal inspection. During the year the Permittee may revise individual tanks with a written notification, but the annual notification must list all tanks using this provision as the previous years

statement will expire after one year. Notification is not required if the tank is switched to a material with less stringent requirements but continues to comply with the more stringent requirements.

- f. If either the seal gap accumulated area or the measured maximum seal gap exceeds the limitations specified by § 60.112a, a report shall be furnished to the Illinois EPA within 60 days of the date of measurements. The report shall identify the vessel and list each reason why the vessel did not meet the specifications of § 60.112a. The report shall also describe the actions necessary to bring the storage vessel into compliance with the specifications of § 60.112a [40 CFR 60.113a(a) (1) (i) (E)].
- g. Pursuant to 40 CFR 63.654(g), the Permittee shall submit Periodic Reports no later than 60 days after the end of each six (6) month period whenever any of the following compliance exceptions occur for an external floating roof tank.
 - i. When the requirements of Condition 7.2.7(a) are not met. This documentation shall include the following:
 - A. The date of the seal gap measurement; [40 CFR 63.654(g) (3) (i) (A)]
 - B. The raw data obtained in the seal gap measurement and the calculations described in Condition 7.2.8(a) (iii); [40 CFR 63.654(g) (3) (i) (B)]
 - C. A description of any seal condition specified in Condition 7.2.7(a) (iii), (iv), (v), or (vi) that is not met; [40 CFR 63.654(g) (3) (i) (C)]
 - D. A description of the nature of and date the repair was made, or the date the vessel was emptied [40 CFR 63.654(g) (3) (i) (D)].
 - ii. If an extension is utilized in accordance with Condition 7.2.8(a) (iii) (unsafe conditions), the following shall be provided in the next periodic report: [40 CFR 63.654(g) (3) (ii)]
 - A. Identification of the vessel;
 - B. The documentation required in Condition 7.2.9(d);

- C. The date the vessel was emptied;
 - D. The nature of and date the repair was made.
- iii. If an extension is utilized in accordance with Condition 7.2.7(a) (viii) or 7.2.7(b) (iv) (repair completion), the following shall be provided in the next periodic report: [40 CFR 63.654(g) (3) (ii)]
- A. Identification of the vessel;
 - B. The documentation required in Condition 7.2.9(e);
 - C. The date the vessel was emptied;
 - D. The nature of and date the repair was made.
- iv. Any time in which the external floating roof has defects; or the primary seal has holes or other openings in the seal or seal fabric; or the secondary seal has holes, tears or other openings in the seal fabric that is identified during the visual inspections required by Condition 7.2.8(a) (ii), the following information shall be included: [40 CFR 63.654(g) (3) (iii) (A)]
- A. Date of inspection;
 - B. Identification of storage vessel(s) with failure;
 - C. Description of failure;
 - D. Nature of and date of repair [40 CFR 63.654(g) (3) (iii) (B)].
- h. Pursuant to 40 CFR 63.654(g), the Permittee shall submit Periodic Reports no later than 60 days after the end of each six (6) month period whenever any of the following compliance exceptions occur for an internal floating roof tank.
- i. A failure is defined as any time in which the internal floating roof is not resting on the surface of the liquid inside the storage vessel and is not resting on the leg supports; or there is liquid on the floating roof; or the seal is detached from the internal floating roof; or there are hole, tears, or other openings in the seal or seal fabric; or

there are visible gaps between the seal and the wall of the storage vessel [40 CFR 63.654(g)(2)(i)(A)].

- ii. If an extension is utilized, then in the next Periodic Report identify the date of inspection, identification of each storage vessel in which a failure was detected, and a description of the failure. The Periodic Report shall also describe the nature of and date the repair was made or the date the storage vessel was emptied [40 CFR 63.654(g)(2)(i)(B), 40 CFR 63.654(g)(2)(i)(C)].
- i. Each source that is equipped with a closed vent system and control device as required in § 60.112b(a)(3) or (b)(2) (other than a flare) is exempt from § 60.8 of the General Provisions and shall meet the following requirements [40 CFR 60.113b(c)].
 - i. Submit for approval by the Illinois EPA as an attachment to the notification required by § 60.7(a)(1) or, if the facility is exempt from § 60.7(a)(1), as an attachment to the notification required by § 60.7(a)(2), an operating plan containing the information listed below [40 CFR 60.113b(c)(1)].
 - A. Documentation demonstrating the control device will achieve the required control efficiency during maximum loading conditions. This documentation is to include a description of the gas stream which enters the control device, including flow and VOC content under varying liquid level conditions (dynamic and static) and manufacturer's design specifications for the control device. If the control device or the closed vent capture system receives vapors, gases, or liquids other than fuels from sources that are not designated sources under this subpart, the efficiency demonstration is to include consideration of all vapors, gases, and liquids received by the closed vent capture system and control device. If an enclosed combustion device with a minimum residence time of 0.75 seconds and a minimum temperature of 816°C is used to meet the 95 percent requirement, documentation that those conditions will

exist is sufficient to meet the requirements of this paragraph [40 CFR 60.113b(c) (1) (i)].

- B. A description of the parameter or parameters to be monitored to ensure that the control device will be operated in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters) [40 CFR 60.113b(c) (1) (ii)].
- j. An owner or operator who elects to comply with § 63.646 by installing a closed vent system and control device shall submit, as part of the next Periodic Report, the information specified below: [40 CFR 63.654(g) (5)].
- i. The Periodic Report shall include the information specified below for those planned routine maintenance operations that would require the control device not to meet the requirements of § 63.119(e) (1) or (e) (2) of 40 CFR 63, Subpart G, as applicable [40 CFR 63.654(g) (5) (i)].
 - A. A description of the planned routine maintenance that is anticipated to be performed for the control device during the next 6 months. This description shall include the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods [40 CFR 63.654(g) (5) (i) (A)].
 - B. A description of the planned routine maintenance that was performed for the control device during the previous 6 months. This description shall include the type of maintenance performed and the total number of hours during those 6 months that the control device did not meet the requirements of § 63.119(e) (1) or (e) (2) as applicable, due to planned routine maintenance [40 CFR 63.654(g) (5) (i) (B)].
 - ii. If a control device other than a flare is used, the Periodic Report shall describe each occurrence when the monitored parameters were outside of the parameter ranges documented in the Notification of Compliance Status report. The description shall include: identification of the control device for which the measured

parameters were outside of the established ranges, and causes for the measured parameters to be outside of the established ranges [40 CFR 63.654(g) (5) (ii)].

- iii. If a flare is used, the Periodic Report shall describe each occurrence when the flare does not meet the general control device requirements specified in § 63.11(b) and shall include: an identification of the flare that does not meet the general requirements specified in § 63.11(b) and reasons the flare did not meet the general requirements specified in § 63.11(b) [40 CFR 63.654(g) (5) (iii)].
- k. The Permittee shall submit the any other applicable reports required by 40 CFR 63.10(d) or 40 CFR 63.654.
- l. The Permittee shall submit any other applicable reports required by 40 CFR 60.115b.
- m. After installing control equipment in accordance with § 60.112b(a) (1) (fixed roof and internal floating roof), the owner operator shall meet the following requirements.
 - i. Furnish the Illinois EPA with a report that describes the control equipment and certifies that the control equipment meets the specifications of § 60.112b(a) (1) and § 60.113b(a) (1). This report shall be an attachment to the notification required by § 60.7(a) (3) [40 CFR 60.115b(a) (1)].
 - ii. Keep a record of each inspection performed as required by § 60.113b(a) (1), (a) (2), (a) (3), and (a) (4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings) [40 CFR 60.115b(a) (2)].
 - iii. If any of the conditions described in § 60.113b(a) (2) are detected during the annual visual inspection required by § 60.113b(a) (2), a report shall be furnished to the Illinois EPA within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of

and date the repair was made [40 CFR 60.115b(a) (3)].

- iv. After each inspection required by § 60.113b(a) (3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in § 60.113b(a) (3) (ii), a report shall be furnished to the Illinois EPA within 30 days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications of § 61.112b(a) (1) or § 60.113b(a) (3) and list each repair made [40 CFR 60.115b(a) (4)].
- n. After installing control equipment in accordance with § 61.112b(a) (2) (external floating roof), the owner or operator shall meet the following requirements.
 - i. Furnish the Illinois EPA with a report that describes the control equipment and certifies that the control equipment meets the specifications of § 60.112b(a) (2) and § 60.113b(b) (2), (b) (3), and (b) (4). This report shall be an attachment to the notification required by § 60.7(a) (3) [40 CFR 60.115b(b) (1)].
 - ii. Within 60 days of performing the seal gap measurements required by § 60.113b(b) (1), furnish the Administrator with a report that contains:
 - A. The date of measurement [40 CFR 60.115b(b) (2) (i)].
 - B. The raw data obtained in the measurement [40 CFR 60.115b(b) (2) (ii)].
 - C. The calculations described in § 60.113b(b) (2) and (b) (3) [40 CFR 60.115b(b) (2) (iii)].
 - iii. After each seal gap measurement that detects gaps exceeding the limitations specified by § 60.113b(b) (4), submit a report to the Illinois EPA within 30 days of the inspection. The report will identify the vessel and contain the information specified in paragraph (b) (2) of this section and the date the vessel was emptied or the repairs made and date of repair [40 CFR 60.115b(b) (4)].

- p. After installing a closed vent system and flare to comply with § 60.112b, the owner or operator shall meet the following requirements.
 - i. A report containing the measurements required by § 60.18(f) (1), (2), (3), (4), (5), and (6) shall be furnished to the Illinois EPA as required by § 60.8 of the General Provisions. This report shall be submitted within 6 months of the initial start-up date [40 CFR 60.115b(d) (1)].
 - ii. Records shall be kept of all periods of operation during which the flare pilot flame is absent [40 CFR 60.115b(d) (2)].
 - iii. Semiannual reports of all periods recorded under § 60.115b(d) (2) in which the pilot flame was absent shall be furnished to the Illinois EPA [40 CFR 60.115b(d) (3)].
- q. The Permittee shall submit reports of startup, shutdown, and malfunction as required by § 63.10(d) (5). Records and reports of startup, shutdown, and malfunction are not required if they pertain solely to Group 2 emission points, as defined in § 63.641, that are not included in an emissions average. For purposes of this paragraph, startup and shutdown shall have the meaning defined in § 63.641, malfunction shall have the meaning defined in § 63.2 [40 CFR 63.654(h) (1)].

7.2.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.2.12 Compliance Procedures

- a. Compliance with the control and operating requirements of Condition 7.2.5 and 7.2.7 shall be demonstrated by the inspection, recordkeeping and reporting requirements of Condition 7.2.8, 7.2.9, and 7.2.10.
- b. Compliance with the emission limitations of Condition 7.2.6 shall be demonstrated by the recordkeeping and reporting requirements of Conditions 7.2.9.
- c. Emissions shall be calculated using an approved USEPA methodology, such as the USEPA TANKS program or calculation procedures described in USEPA's AP-42, 5th ed., (September 1997).

7.3 Unit: Fluid Catalytic Cracking Unit
Control: CO Boiler and Flue Gas Scrubber System

7.3.1 Description

The Fluid Catalytic Cracking Unit charges a combined stream of light and heavy vacuum and atmospheric gas oil from the Crude Unit and Tank Farm. Fluid catalytic cracking is a low pressure, high temperature method of cracking a wide variety of gas oils by using a powdered catalyst which boosts the cracking reaction in the direction of higher octane gasoline and more aromatic products. Carbon deposits on the catalyst are burned off to regenerate the catalyst in the unit's regenerator vessel. The partially combusted flue gas from the regenerator has a high content of carbon monoxide (CO), and this additional fuel value is recovered in a CO Boiler which also fires refinery fuel gas. The CO Boiler produces 600# steam and superheats 150# steam. Flue gas leaving the CO Boiler enters the Flue Gas Scrubber. The hot flue gas contains sulfur gases and catalyst fines and is cooled to its saturation temperature in the Flue Gas Scrubber. Sulfur gases and catalyst fines are removed. A small amount of soda ash solution is added to control pH. A purge stream from the Flue Gas Scrubber is sent to the Purge Treatment Unit (PTU). At the PTU, solids contained in the purge stream settle out and are run through a filter press. Liquid remaining after the solids are removed is aerated to oxidize sodium salts present and then disposed offsite. Soda ash solution is injected into the PTU to control pH.

Finished products (gas and gasoline) from the main fractionator leaving the unit are sent to the light ends plant. Additional products leaving the process include slurry oil and light/heavy cycle oil. The unit employs one gas-fired feed preheater (82F-2) and a waste heat CO boiler (60F-1), various chemical storage tanks, and a unit sump system.

The Peabody Heater (82F-1) remains idle for the most part. This heater is used only as a standby unit. When the FCCU has an extended downtime, this heater is used to bring the unit back on line.

7.3.2 List of Emission Units and Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description	Emission Control Equipment
41	Fluid Catalytic Cracking Unit (FCCU)	Vacuum and atmospheric gas oil are cracked into higher octane gasoline and aromatic products. The catalyst regeneration part of the unit vents through the control equipment.	CO Boiler, Flue Gas Scrubber System (FGSS)

7.3.3 Applicability Provisions and Applicable Regulations

- a. The "affected fluid catalytic cracking unit (FCCU)" for the purpose of these unit-specific conditions, is the fluid catalytic cracking operation described in Conditions 7.3.1 and 7.3.2.
- b. The affected FCCU is subject to the emission limits and requirements identified in Section 5 of this permit. Note especially Sections 5.2.2 and 5.2.3.
- c. Components associated with the affected FCCU are subject to the fugitive emission regulations as addressed by Section 7.10, which includes inspection, recordkeeping, reporting requirements, and compliance procedures for fugitive emissions.
- d. Pursuant to 35 IAC 212.381, no person shall cause or allow the particulate matter emission rate from catalyst regenerators of fluidized catalytic converters to exceed in any one hour period, the rate determined using the following equations:

$$E = 4.10(P)^{0.67} \quad \text{for } P \text{ less than or equal to } 30 \text{ T/hr}$$

$$E = (55.0(P)^{0.11}) - 40.0 \quad \text{for } P \text{ greater than } 30 \text{ T/hr}$$

Where:

E = Allowable emission rate in lbs/hr; and

P = Catalyst recycle rate, including the amount of fresh catalyst added, in T/hr.

- e. Except as further provided by 35 IAC 214, no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any affected catalytic cracking operation to exceed 2000 ppm [35 IAC 214.301].

- f. Notwithstanding 35 IAC 216.361(a) [cited in Condition 5.2.3(g)], any existing petroleum or petrochemical process using catalyst regenerators or fluidized catalytic converters equipped for in situ combustion of carbon monoxide may emit a carbon monoxide waste gas stream into the atmosphere if the carbon monoxide concentration of such waste gas stream is less than or equal to 750 ppm corrected to 50 percent excess air [35 IAC 216.361(b)]. This applies during malfunction and breakdown as allowed by Condition 7.3.3(i).
- g. NSPS Requirements

The affected FCCU is subject to 40 CFR 60 Subpart J, the NSPS for Petroleum Refineries, because it was constructed or modified after June 11, 1973. The specific standards are as follows:

- i. PM emissions shall not exceed 1.0 lb/1000 lb of coke burnoff in the catalyst regenerator [40 CFR 60.102(a)(1)].
- ii. Visible emissions shall not exhibit an opacity greater than 30 percent, except for one six-minute average opacity reading in any one hour period [40 CFR 60.122(a)(2)].
- iii. CO emissions shall not exceed 500 ppm by volume, dry basis [40 CFR 60.103(a)].
- iv. A. Fuel gas burned in any fuel combustion device shall not contain H₂S in excess of 0.10 gr/dscf. This applies to any supplemental fuel burned in the CO Boiler [40 CFR 60.104(a)(1)].
B. For SO₂ emissions the Permittee uses the FGSS and generally uses option 1 below to comply but (2) and (3) are available options.
 - 1. With an add-on control device, reduce SO₂ emissions to the atmosphere by 90 percent or maintain SO₂ emissions to the atmosphere less than or equal to 50 ppm by volume (ppm_v), whichever is less stringent [40 CFR 60.104(b)(1)]; or
 - 2. Without the use of an add-on control device, maintain SO₂

emissions, calculated as SO₂ to the atmosphere, less than or equal to 9.8 lb/1000 lb coke burn-off [40 CFR 60.104(b)(2)]; or

3. Process in the affected FCCU fresh feed that has a total sulfur content no greater than 0.30 percent by weight [40 CFR 60.104(b)(3)].
 4. Compliance with Condition 7.3.3(g)(iv)(B)(1), (2) or (3) is determined daily on a 7-day rolling average basis using the appropriate procedures in 40 CFR 60.106. When complying with Condition 7.3.3(g)(iv)(B)(1) above, there shall be a minimum of 22 valid days of data every 30 rolling successive days [40 CFR 60.104(d)].
- v. The affected FCCU is also subject to the applicable requirements of 40 CFR 60 Subpart A (General provisions of the NSPS).
- h. NESHAP Provisions
- i. The affected FCCU is subject to 40 CFR 63 Subpart UUU, but with a future compliance date of April 11, 2005 and a possible extension if interim requirements are met. There are compliance standards for metal HAPs and organic HAPs [40 CFR 63.1563-1565]. There are several options for compliance. Many of the rules for compliance in 40 CFR Subpart A, general provisions for NESHAP, are also applicable to this process. Table 44 of Subpart UUU states which provisions of Subpart A are applicable.
 - ii. Startup, Shutdown and Malfunction (SSM) Plan

The Permittee is required to have a written Startup, Shutdown and Malfunction (SSM) Plan for the equipment subject to the Petroleum Refinery rule as described in Condition 7.3.3(l)(i). The SSM plan is not required until the date that compliance is required, April 11, 2005. [40 CFR 63.6(e)(3)]

iii. Operation, Maintenance and Monitoring (OM&M) Plan

The Permittee is required to have a written operation, maintenance and monitoring plan for any control system and any continuous monitoring system employed for achieving and determining compliance with the NESHAP listed above.

This OM&M plan must be submitted to the Illinois EPA with the notification of compliance status for review and approval. The contents of the OM&M plan and dates for submittal are listed in 40 CFR 63.1574(f).

i. Malfunction and Breakdown Provisions

i. 35 IAC Requirements

Pursuant to 35 IAC 201.262, the Permittee is authorized to continue operation of the affected FCCU in excess of the applicable board emission limits of 35 IAC 212.381 and 216.361(a) (Conditions 7.3.3(d) and (g) as a result of a malfunction or breakdown of the CO Boiler, as necessary to prevent injury to persons or severe damage to equipment. This authorization is subject to the following:

- A. This authorization only extends for a period of up to 72 hours following the initial malfunction or breakdown event. If continued operation to prevent injury to persons or severe damage to equipment in excess of board limits is expected to exceed this period for a specific malfunction or breakdown, the Illinois EPA's regional office shall be notified of the expected additional length of time operation will continue. The length of time may be extended if the Permittee can demonstrate that the emissions will be less during the extended period than if the unit is shutdown and restarted.
- B. The Permittee shall take the following measures to minimize emissions resulting from malfunctions or breakdowns, the frequency of malfunctions or breakdowns, and the duration of operation in excess of board limits as a result of a malfunction or breakdown:

1. Implementation of established written malfunction or breakdown procedures so as to minimize the duration of continued operation resulting from malfunctions or breakdowns and the emissions associated with malfunctions or breakdowns. This includes the following:

The affected FCCU typically operates with CO emissions controlled by combustion in the CO Boiler to discharge to the atmosphere. The FCCU also has the capability to operate without the CO Boiler, with CO emissions controlled by combustion within the regenerator vessel. Because of the nature of the FCCU, operation of the unit with a reduced load, using the "full burn" approach to combust CO emissions will typically result in significantly lower emissions than would occur if the unit were to be completely shutdown and then started back up. Excess emissions during startup of the unit, typically exceed excess emissions from a malfunction and breakdown both in magnitude and duration.

2. Implementation of established maintenance practices so as to minimize the duration of continued operation resulting from malfunctions or breakdowns and the frequency of malfunctions or breakdowns. These maintenance practices shall include maintenance activities before the unit is started up, when the unit is in operation, and when the unit is shut down.
- C. The Permittee shall fulfill the applicable recordkeeping requirements of Condition 7.3.9(f).
 - D. The Permittee shall fulfill the applicable reporting requirements of Condition 7.3.10(b).

E. Any excess emissions resulting from malfunction or breakdown which does not meet the requirements of this Condition 7.3.3(k) shall be considered an exceedance of the requirements of this permit and subject to the reporting requirements for exceedances in Condition 7.3.10.

ii. NESHAP Requirements

After the date when the SSM Plan and OM & M Plan discussed in Condition 7.3.3(h) are required to be implemented, the Permittee shall follow the plans during any malfunction or breakdown of the process or control equipment that increases emissions above that allowed by the applicable NESHAP rule.

j. Startup Provisions

Pursuant to 35 IAC 201.262, the Permittee is authorized to operate the affected FCCU in violation of the applicable board emission limits of 35 IAC 212.381 and 216.361(a) (Conditions 7.3.3(d) and (g), to the extent necessary to conduct a normal startup of the affected FCCU. The Permittee has affirmatively demonstrated that all reasonable efforts have been made to minimize startup emissions, duration of individual starts, and frequency of startups. This authorization is subject to the following:

i. Startup shall be conducted in accordance with a startup plan that includes all reasonable measures to be taken to minimize the quantity of emissions, the length of each startup, and the number of startups, e.g., the regenerator air rates will be adjusted to minimize the carbon level on the circulating catalyst. A description of the startup procedure including time periods for each phase for the fluid catalytic unit, CO Boiler, and associated equipment shall be submitted to the Illinois EPA's Compliance Section for review within 30 days of any change to the startup procedure currently on file with the Illinois EPA. This shall include any proposed venting of emissions to stack not monitored by the continuous opacity monitor.

ii. If startup of the affected FCCU results in operation in excess of applicable emission standards for 40 hours or more, the Permittee

shall immediately notify the Illinois EPA's regional field office by telephone of the additional length of time required to complete the startup, if any.

- iii. Note: This authorization does not apply to Condition 7.3.3(g) (iii) [NSPS for CO], for which startup, shutdown, and malfunction is addressed by 40 CFR 60.8 and 60.11, or for the future NESHAP requirements in Condition 7.3.3(h).
- iv. The Permittee shall fulfill the applicable recordkeeping requirements of Condition 7.3.9(e).
- v. Any startup which exceeds applicable board limits more than the extent necessary to conduct a normal startup, or any startup which does not meet the requirements of this Condition 7.3.3(j) shall be considered an exceedance of the requirements of this permit and subject to the reporting requirements for exceedances in Condition 7.3.10.
- k. Pursuant to and only during the term of the Global Settlement Consent Decree between Marathon Ashland Petroleum LLC and the USEPA, Civil Action No. 01-40119, the following limitations apply:
 - i. SO₂ limit for FCCU is 25 ppmvd based on a 365-day rolling average and 50 ppmvd based on a 7-day rolling average, each at 0% oxygen.

7.3.4 Non-Applicability of Regulations of Concern

- a. This permit is issued based on the affected catalytic cracking operations not being subject to the New Source Performance Standards (NSPS) for Petroleum Refineries, 40 CFR 60.102(b), because the affected FCCU does not burn supplemental liquid or solid fossil fuel, but only burns refinery fuel gas or natural gas.
- b. 35 IAC 212.321 and 212.322 shall not apply to catalyst regenerators of fluidized catalytic converters [35 IAC 212.381].
- c. The provisions of 35 IAC 215.301 and 302, Use of Organic Material, shall not apply to fuel combustion emission sources [35 IAC 215.303]. Furthermore, the provisions of 35 IAC 215.301 and 302 does not apply to petroleum or petrochemical manufacturing processes pursuant to 35 IAC 215.441.

- d. The affected FCCU is exempt from 40 CFR 63 Subpart CC (Refinery NESHAP) pursuant to 40 CFR 63.640(d)(4).
- e. The provisions of 35 IAC 214.162, Combination of Fuels, do not apply because only gaseous fuels are burned.

7.3.5 Operational and Production Limits and Work Practices

- a. The Permittee shall route and combust all waste gas streams generated by the affected FCCU in the CO Boiler and then to the FGSS as required in Condition 7.3.3(g)(iii) and (iv), except as allowed by Conditions 7.3.3(i) and (j).
- b. Maximum air blower rate for input to the affected FCCU regenerator shall not exceed 156,435 scf/minute on a 30-day rolling average [T1].
- c. Refinery fuel gas input to the CO Boiler and steam Boilers 3, 4, 5 and 6 shall not exceed 4,044.9 mmscf/year combined, based on a 12-month rolling average basis. [T1].
- d. Operation of the FCCU Charge Heater (82F-2) shall not exceed 859 MMSCF/yr of fuel gas on a twelve-month rolling average basis [T1].

7.3.6 Emission Limitations

In addition to Conditions 5.2.2, 5.2.3 and the source-wide emission limitations in Condition 5.5, the affected FCCU CO Boiler and Boilers 3, 4, 5 and 6 combined shall not exceed the following:

<u>Pollutant</u>	<u>Emissions</u>	
	<u>(Tons/Month)</u>	<u>(Tons/Year)</u>
NO _x	135.0	810.3
CO	105.5	633.2
SO ₂	121.8	730.9
PM	28.0	167.8
VOM	1.8	11.2

The above limitations were established in Permit 99020080, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21 [T1].

7.3.7 Testing Requirements

- a. Upon request by the Illinois EPA and/or USEPA, pursuant to Section 39.5(7)(b) of the Act, the Permittee shall conduct testing of the affected FCCU operations for purposes of demonstrating compliance to conditions of this permit according to USEPA approved methods of 40 CFR 60 Appendix A or other appropriate methods approved by the Illinois EPA or USEPA, at such reasonable times as may be specified by the Illinois EPA and/or USEPA. This test shall meet the following requirements:
 - i. The test shall be conducted by an approved independent testing service.
 - ii. The test shall be conducted during conditions which are representative of maximum emissions.
 - iii. The test shall be designed to measure the following parameters, as necessary:
 - A. The emission rate of PM, so as to determine compliance with Condition 7.3.3(d).
 - B. The emission concentration of SO₂, so as to determine compliance with Condition 7.3.3(e).
 - C. The emission concentration of CO, so as to determine compliance with Condition 7.3.3(g).
- b. 40 CFR 60.108(d) requires a performance test be conducted each successive 24-hour period for units subject to 40 CFR 60.104(b)(1) [Condition 7.3.3(g)(iv)(B)] after the initial performance test. The successive tests shall be in accordance with 40 CFR 60.106.

7.3.8 Monitoring Requirements

- a. In accordance with its Alternative Opacity Monitoring Procedures approved by USEPA, pursuant to 40 CFR 60.13(i) and by the Illinois EPA pursuant to 35 IAC 201.401, the Permittee shall continuously record the operating pressure of the lower quench/circulation pump header (PI tag 60PI6060) and the operating pressure of the upper circulation pump header (PI tag 60PI6070). The Permittee shall also monitor these values during all performance and emissions tests for particulate matter conducted at the affected FCCU. The Permittee shall maintain a combined average operating pressure of at least eighty (80) percent of

the most recent stack test that demonstrated compliance.

- b. The Permittee shall maintain and operate an instrument for continuously monitoring and recording the concentration by volume (dry basis) of CO emissions into the atmosphere. The span for this instrument is 1,000 ppm CO [40 CFR 60.105(a)(2)].

Note: Because the CO limit of 35 IAC 216.361(a) (200 ppm) includes a correction to 50% excess air, this CO CEMS cannot be directly used to determine compliance with 35 IAC 216.361(a) because the information needed to adjust monitored results to 50% excess air is not available. However, monitored data from this CEMS may provide evidence, in conjunction with other operating information for the affected FCCU, of compliance or noncompliance with 35 IAC 216.361(a).

- c.
 - i. The Permittee shall maintain and operate an instrument for continuously monitoring and recording concentrations of SO₂ in the gases at both the inlet and outlet of the FGSS. The span value of the inlet monitor shall be set at 125 percent of the maximum estimated hourly potential SO₂ emission concentration entering the FGSS. The span value of the outlet monitor shall be set at 50 percent of the maximum estimated hourly potential SO₂ emission concentration entering the FGSS [40 CFR 60.105(a)(8)].
 - ii. The Permittee shall maintain and operate an instrument for continuously monitoring and recordkeeping concentrations of oxygen (O₂) in the gases at both the inlet and outlet of the FGSS. The span of the continuous monitoring system shall be set at 10 percent [40 CFR 60.105(a)(10)].
- d. The Permittee shall comply with the monitoring requirements of 40 CFR 63.1572 or alternatives in § 63.1573. The monitors specified above in Conditions 7.3.8(b) or (c) may be acceptable if the monitors meet the requirements of Table 40 in Subpart UUU, which in turn reference 40 CFR 60 Appendix B.
- e. The NSPS requirement for monitoring H₂S in the refinery fuel gas burned in the CO Boiler is discussed in Condition 7.1.8 [40 CFR 60.105(a)(4)].

- f. The Permittee shall maintain and operate an instrument to measure the air blower rate for input to the FCCU in order to verify compliance with Condition 7.3.5(b).

7.3.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected FCCU to demonstrate compliance with Conditions 7.3.3, 7.3.5, and 7.3.6, pursuant to Section 39.5(7)(b) of the Act:

- a. The Permittee shall maintain records of the following items to demonstrate compliance with the PM emission limits in Condition 7.3.3(d):
 - i. Catalyst recycle rate, T/minute, calculated based on bi-weekly samples of the flue gas.
 - ii. Allowable PM emission rate by 7.3.3(d), lbs/hr.
- b. The Permittee shall maintain records of the following items to demonstrate compliance with the SO₂ emission limits in Conditions 7.3.3(g)(iv)(B):
 - i. Average hourly concentration of SO₂ in the inlet and outlet of the FGSS as measured by the monitors required in Condition 7.3.8(e), ppm.
 - ii. Refinery fuel gas input to the CO Boiler (mmscf/month and mmscf/year).
 - iii. Sulfur content of the refinery fuel gas used in CO Boiler, % weight or ppm.
 - iv. The final daily result, using a computerized calculation method, of a 7-day rolling average basis of the reduction in SO₂ emissions by the FGSS [40 CFR 60.104(c)]. The computer calculation must also be able to determine with the Consent Decree compliance standard in Condition 7.3.3(k).
 - v. Percent O₂ in FGSS inlet and outlet.
 - vi. Emissions of SO₂ from the affected FCCU.
- c. The Permittee shall maintain records of the CO concentration, by volume on a daily basis, as measured by the instrument required by Condition 7.3.8(b).

As noted in Condition 7.3.8(b), the CO CEMS data cannot directly determine compliance. Records shall also include any other operating information necessary to determine compliance with 35 IAC 216.361(a).

- d. The Permittee shall maintain records of the following items to quantify emissions from the affected FCCU operations:
 - i. Fresh feed rate to the affected FCCU, bbl/day.
 - ii. Hours of operations for the affected FCCU.
 - iii. Annual aggregate emissions of NO_x, CO, VOM, SO₂, and PM from the affected FCCU operations as calculated by the compliance procedure described in Condition 7.3.12(k), ton/year.
- e. The Permittee shall maintain records of the following items for each Startup to demonstrate compliance with Condition 7.3.3(j):
 - i. Date and duration of the startup, i.e., start time and time normal operation was achieved.
 - ii. Verification that the startup procedures, including a pre-check, were performed and met the requirements of Condition 7.3.3(j).
 - iii. Records of maintenance activities performed.
 - iv. If normal operation was not achieved within the authorized times of Condition 7.3.3(j), an explanation of why startup could not be achieved within the authorized time with the date and time the Illinois EPA's regional office was contacted, the person spoken to, items discussed, and follow-up instructions.
- f. The Permittee shall maintain the following records for each occurrence of malfunction or breakdown that results in excess emissions and submit a summary of the information to the Illinois EPA's Compliance Section and Regional Office within 5 working days following the end of such occurrence:
 - i. Date and duration of the malfunction or breakdown, i.e., start time and time normal operation was achieved or time operation was shutdown.

- ii. A detailed description of the occurrence, including its nature, cause for significant events during the occurrence, and the date, time and means by which the occurrence was terminated including:
 - 1. If the CO Boiler was shutdown.
 - 2. If the FCCU was shifted to the "full burn" mode of operation.
 - 3. If the FCCU resumed normal operation with the CO Boiler.
- iii. The charge rate to the affected FCCU, barrels/day.
- iv. The contaminants emitted, the measurements of all monitors required in Condition 7.3.8, and an estimate of the quantity of emissions, including supporting calculations and CO concentration corrected to 50% excess air.
- v. Verification that the malfunction and breakdown procedures were performed and met the requirements of Condition 7.3.3(k).
- vi. The steps taken to prevent similar malfunctions or breakdowns or reduce their frequency and severity.
- vii. Records of maintenance activities performed.
- viii. If the alternative monitoring method is used to monitor opacity from the FCCU.
- ix. If normal operation or shutdown was not achieved within the authorized time of Condition 7.3.3(i), an explanation of why normal operation or shutdown could not be achieved within the authorized time with the date and time the Illinois EPA's regional office was contacted, the person spoken to, items discussed, and follow-up instructions.
- g. Records for Alternative Opacity Monitoring Procedure
 - i. Operating pressure of the lower quench/circulation pump header and operating pressure of the upper circulation pump header.
 - ii. Quarterly reports submitted in accordance with Condition 7.3.10(e). Excess emissions will be defined as any one-hour period when the

average of the upper and lower header pressures is less than 80% of the average value recorded during the most recent performance test that demonstrated compliance with the particulate standard in 40 CFR 60.102(a)(1).

- h. The Permittee shall maintain records of the following items for each exceedance of the limits in Conditions 7.3.3, 7.3.5, or 7.3.6, which shall include:
 - i. Identification of the limit that may have been exceeded.
 - ii. Duration of the possible exceedance.
 - iii. An estimate of the amount of emissions in excess of the applicable standard.
 - iv. A description of the cause of the possible exceedance.
 - v. When compliance was reestablished.
- i. The Permittee shall maintain records of the most recent tests required in Condition 7.3.7(a), which include the following pursuant to Section 39.5(7)(e) of the Act:
 - i. The date, place and time of sampling or measurements.
 - ii. The date(s) analyses were performed.
 - iii. The company or entity that performed the analyses.
 - iv. The analytical techniques or methods used.
 - v. The results of such analyses.
 - vi. The operating conditions as existing at the time of sampling or measurement.
- j. The Permittee shall keep records of those items specified in the NESHAP, 40 CFR 63.1576 and any other records of the NSPS, 40 CFR 60.107 not previously specified.
- k. The Permittee shall maintain records of the average coke burn-off rate (tons/hour) and hours of operation [40 CFR 60.105(c)].

7.3.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of the affected FCCU operations with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. Within 30 days of exceedance of the limits in Conditions 7.3.3, 7.3.5, or 7.3.6, the notification shall include:
 - i. Identification of the limit that may have been exceeded.
 - ii. Duration of the possible exceedance.
 - iii. An estimate of the amount of emissions in excess of the applicable standard.
 - iv. A description of the cause of the possible exceedance.
 - v. When compliance was reestablished.
- b. Reporting of Malfunctions and Breakdowns
 - i. Pursuant to 35 IAC 201.263, the Permittee shall immediately report to the Illinois EPA, Compliance Section and Regional Field Office by telephone or fax concerning continued operation of an emission source during a malfunction or breakdown of the emission source or related pollution control equipment when such continued operation would cause a violation of the standards or limitations of this Permit, the Act or regulations promulgated thereunder.
 - ii. Pursuant to 35 IAC 201.302, upon achievement of compliance, the Permittee shall give a written follow-up report within five (5) business days to the Illinois EPA, Compliance Section and Regional Field Office, providing a detailed explanation of the event and explanation why continued operation of the emission source was necessary, the length of time during which operation continued under such conditions, the measures by the Permittee to minimize and correct deficiencies with chronology, and when the repairs were completed or when the emission source was taken out of service.

- c. The Permittee shall fulfill the following reporting requirements for each test performed pursuant to Condition 7.3.7(a):
 - i. At least 30 days prior to the expected date of testing, a written test plan shall be submitted to the Illinois EPA for review. This plan shall describe the specific procedures for testing, including:
 - A. The expected date and time of the test.
 - B. The person(s) who will be performing the sampling and analysis and their experience with similar tests.
 - C. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for the emission unit will be determined.
 - D. The specific determinations of emissions and operation which are intended to be made, including sampling and monitoring locations.
 - E. The specific sampling, analytical, and quality control procedures which will be used, with an identification of the standard methods upon which they are based.
 - F. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification.
 - G. Any proposed use of an alternative test method, with detailed justification.
 - ii. Notification of the actual date and time of the testing shall be submitted to the Illinois EPA at least 5 working days prior to the actual date of the test so the Illinois EPA can arrange to have an observer present.
 - iii. The results of the test shall be submitted to the Illinois EPA within 90 days after the testing is complete. These results shall be

included in a final report, which shall include the following:

- A. A summary of results.
 - B. A description of the test methods used, including a description of sampling points, sampling train, analysis equipment, and test schedule.
 - C. A detailed description of test conditions, including:
 - 1. Process information including the mode(s) of operation.
 - 2. A discussion of any preparatory actions taken, i.e., inspections, maintenance, and repair.
 - D. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.
 - E. An explanation of any discrepancies among individual tests or anomalous data.
 - F. The results of all quality control evaluations, including a copy of all quality control data.
- e. The Permittee shall promptly report incidents when the combined operating pressure of the lower and upper pump headers for the FGSS [i.e., the alternative monitoring procedure described in Condition 7.3.8(a)] are not at least 80% of the value during the most recent stack test that demonstrated compliance.
- f. The Permittee shall submit all notifications and reports required by the NESHAP, 40 CFR 63.1574 and 63.1575 and the NSPS, 40 CFR 60.107.
- g. The Permittee shall report to the Illinois EPA within 60 days after the end of any calendar year if actual emissions of any PSD pollutant exceed the baseline actual emissions by a significant amount and if such emissions differ from the preconstruction projections, in accordance with 40 CFR 52.21(r) (6) (v).

7.3.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to an affected catalytic cracking operation without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

None.

7.3.12 Compliance Procedures

- a. Compliance with the PM requirements in Condition 7.3.3(d) shall be demonstrated by the monitoring requirements in Condition 7.3.8(a) and the recordkeeping requirements in Condition 7.3.9(g).
- b. Compliance with the PM emission limits in Condition 7.3.3(d) shall be demonstrated by the testing requirements in Condition 7.3.7(a), the operational requirements in Condition 7.3.5(a) and the recordkeeping requirements in Condition 7.3.9(a) and (g).
- c. Compliance with the SO₂ requirements of Condition 7.3.3(e) and (g) (iv) (B) (1) shall be demonstrated by the testing requirements in Condition 7.3.7(a), the monitoring requirements of 7.3.8(c), the recordkeeping requirements of 7.3.9(b) and the reporting requirements of 7.3.10.
- d. Compliance with the CO requirements of Condition 7.3.3(g) during normal operation and (f) during malfunction and breakdown shall be demonstrated by the testing requirements in Condition 7.3.7(a) and the operational requirements in Condition 7.3.5(a).
- e. Compliance with the VOM requirements of Condition 7.3.3(h) is considered to be assured if the Permittee meets the requirements of Condition 7.3.5(a).

7.4 Unit: Catalytic Reforming Units (2)
 Control: Refinery Flare System

7.4.1 Description

Catalytic reforming is a process for upgrading low octane materials into higher octane products. There are two units that are classified as catalytic reformers at this refinery, the Ultraformer (Plant 3) and the Platformer (Plant 16).

At the Ultraformer, as part of normal operation carbon is deposited on the catalyst, causing it to deactivate. The unit is equipped with a regeneration system allowing it to take one of the four reactors out of service for catalyst regeneration. The regeneration system uses plant nitrogen along with hydrogen, oxygen, and chemicals to restore the catalyst's activity before placing it back in service. As part of the pressure control of the regeneration system, gases are vented through a control valve through two chloride scrubber beds to the Refinery Flare System.

The Platformer is equipped with a continuous catalyst regeneration (CCR) system to keep the catalyst free of coke and maintain its activity. The spent catalyst is removed from the bottom of the fourth reactor bed and sent to the top of the regeneration tower. In the regenerator, the catalyst is contacted with air and the coke is burned off. Net flue gases from the regenerator are vented to the atmosphere. The catalyst then travels to the chlorination zone where the catalyst is contacted with chloride to reactivate it. The catalyst is then dried and returned to the top of the first reactor bed where it is contacted with hydrogen to activate the platinum; the catalyst is now ready to enter the first reactor bed.

The process heaters for these units are included in Section 7.1.

7.4.2 List of Emission Units and Air Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Emission Control Equipment
42	Plant 3	Ultraformer	Refinery Flare System
43	Plant 16	Naphtha Hydrotreater/ Platformer	None To Flare When Depressurizing

7.4.3 Applicability Provisions and Applicable Regulations

- a. An "affected catalytic reformer" for the purpose of these unit-specific conditions, is a petroleum process unit identified in Condition 7.4.2.
- b.
 - i. These affected units are subject to a Refinery NESHAP, 40 CFR 63 Subpart UUU, but with a future compliance date of April 11, 2005. The regeneration process may require control equipment to be installed. Currently, as well as after 40 CFR 63 Subpart UUU becomes effective, these affected units are and will be subject to the equipment leaks provisions of 40 CFR 63 Subpart CC since they are petroleum refinery units in organic HAP service as identified in 40 CFR 63.640(a) and located at a source that is major for HAPs. See Section 7.10.

There are compliance standards for both organic HAP emissions and inorganic HAP emissions (40 CFR 63.1566 - 1567). The organic HAP emission standard is similar to 35 IAC 215.444 [Condition 5.2.3(d)] in that it requires the unit to be depressurized to a flare. Many of the rules for compliance in 40 CFR 63.6, general provisions for NESHAP, are also applicable to this process.

- ii. Startup, Shutdown and Malfunction (SSM) Plan

The Permittee is required to have a written Startup, Shutdown and Malfunction (SSM) Plan for the equipment subject to the Petroleum Refinery rule as described in Condition 7.3.3(b)(i). The SSM plan is not required until the date that compliance is required, April 11, 2005. [40 CFR 63.6(e)(3)]

- iii. Operation, Maintenance and Monitoring (OM & M) Plan

The Permittee is required to have a written operation, maintenance and monitoring plan for any control system and any continuous monitoring system employed for achieving and determining compliance with the NESHAP listed above.

This OM & M plan must be submitted to the Illinois EPA with the notification of compliance status for review and approval. The contents of the OM & M plan and dates for submittal are listed in 40 CFR 63.1574(f).

- c. Both Catalytic Reforming Units (Plants 3 and 16) are subject to the equipment leaks provisions of 35 IAC 215 Subpart R (Section 215.445-463). See Section 7.10 on Fugitive Emissions.
- d. Both Catalytic Reforming Units are subject to the emission limits in Conditions 5.2.2 to 5.2.4.

7.4.4 Non-Applicability of Regulations of Concern

This permit is issued based on the affected catalytic reforming units not being subject to the New Source Performance Standards (NSPS), 40 CFR Part 60, Subpart J, GGG or QQQ for the following reasons:

- a. The affected catalytic reforming units are not subject to Subpart J, because the units are not Claus sulfur recovery units or fluid catalytic cracking units. Applicability or non-applicability of the rule to fuel combustion devices is addressed in Section 7.1 of this permit.
- b. The affected catalytic reforming unit vents are exempted from 40 CFR 63 Subpart CC pursuant to 40 CFR 63.640(d)(4).

7.4.5 Control Requirements

There are no current control requirements but when the date for compliance with NESHAP is reached, control equipment or operating changes may be required. Although not currently required, any existing scrubber used during catalyst reactivation shall be operated properly to reduce emissions of chlorine/chlorides.

7.4.6 Emission Limitations

In addition to Condition 5.2.2 and the source wide emission limitations in Condition 5.5, the affected catalytic reforming units are subject to the following:

N/A

7.4.7 Testing Requirements

- a. These units may be required to conduct performance tests to demonstrate compliance with the applicable standards within 150 days of the compliance date specified in 40 CFR 63.1563. See § 63.1571 for performance testing requirements.
- b. Upon request by the Illinois EPA and/or USEPA, pursuant to Section 39.5(7)(b) of the Act and 40 CFR 63.571 the Permittee shall conduct testing of the

affected catalytic cracking operations for purposes of demonstrating compliance to conditions of this permit according to USEPA approved methods of 40 CFR 60 Appendix A or other appropriate methods approved by the Illinois EPA or USEPA, at such reasonable times as may be specified by the Illinois EPA and/or USEPA. This test shall meet the following requirements:

- i. The test shall be conducted by an approved independent testing service.
- ii. The test shall be conducted during conditions which are representative of maximum emissions.

7.4.8 Monitoring Requirements

- a. The Permittee shall comply with the monitoring requirements of 40 CFR 63.1572 or alternatives in § 63.1573 after the dates specified by Subpart UUU.
- b. The Permittee shall comply with the equipment leaks monitoring requirements of 35 IAC 215 Subpart R. Further details are given in Section 7.10 of this permit.

7.4.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain the following records for the affected catalytic reforming units to demonstrate compliance with Condition 7.4.3(b), pursuant to Section 39.5(7)(b) of the Act:

- a. The Permittee shall keep records of those items specified in the NESHAP, 40 CFR 63.1576.

7.4.10 Reporting Requirements

The Permittee shall submit all notifications and reports required by the NESHAP, 40 CFR 63.1574 and 63.1575.

7.4.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.4.12 Compliance Procedures

- a. Since at the current time there is no emission standard for regeneration, compliance is assumed by following standard regeneration procedure. Emissions may be calculated from previous tests, engineering judgment or design standards and after performance testing using the results of the test.

- b. After implementation of the NESHAP Subpart UUU, compliance is met by conducting an initial performance test and then following the monitoring, recordkeeping and reporting requirements of Condition 7.4.8, 7.4.9 and 7.4.10.

7.5 Unit: Petroleum Processing Units with MACT Group 1 Process Vents
Control: Flare or Process Heater

7.5.1 Description

Refinery processes listed in this section contain process vents which are considered to be 40 CFR 63, Subpart CC Group 1 process vents. In addition to the vents that go to the Refinery Flare system, process heaters, fuel gas system, or plant hydrogen, these processes may also have safety relief valves that vent to either a flare, the fuel gas system, or directly to atmosphere.

This CAAPP permit includes the entire process listed in the Permittee Unit Number, e.g., Plant 1 is the Crude Unit. In many cases the description lists a knock out drum. This vessel does not actually generate the emissions, but is simply a vessel for removing some liquids that may remain in the vapor stream from the main process equipment before the vapor stream vents to the flare system.

7.5.2 List of Emission Units and Air Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description	Emission Control Equipment
44	Plant 1	Crude Unit, 1C-17 Blow Down Drum Overhead	Refinery Flare System
45	Plant 1	Crude Unit, 1C-18, Fuel gas Knock Out Drum Bottoms	Refinery Flare System
46	Plant 1	Crude Unit, 1C-33, Off-Gas Knock Out Drum Vacuum Off Gas	1F-1 Heater
47	Plant 2	Ultrafiner, 2C-14, Blow Down Drum	Refinery Flare System
48	Plant 2	Ultrafiner, 2C-18, Oxygen Stripper Knock Out Drum	Refinery Flare System
49	Plant 3	Ultraformer, 3C-25, Fuel Gas Knock Out Drum	Refinery Flare System
50	Plant 4	Unicracker, 4C-30, Fuel Gas Knock Out Drum	Refinery Flare System
51	Plant 8	#1 Sat Gas Plant, 8C-11, Fuel Gas Knock Out Drum	Refinery Flare System
52	Plant 8	#1 Sat Gas Plant, 8C-12, Blow Down Drum	Refinery Flare System

Permit Emission Unit Number	Permittee Unit Number	Description	Emission Control Equipment
53	Plant 16	Platformer, 16C-43, Fuel Gas Knock Out Drum	Refinery Flare System
54	Plant 23	#2 Sat Gas Plant, 23C-12, Fuel Gas Knock Out Drum	Refinery Flare System
55	Plant 77	Penex, 77C-26, Flare Knock Out Drum	Refinery Flare System
56	Plant 82	FCCU, 82C-103, Flare Knock Out Drum	Refinery Flare System
57	Plant 90	Regular Coker, 90C-20, Fuel Gas Knock Out Drum	Refinery Flare System

7.5.3 Applicability Provisions and Applicable Regulations

- a. An "affected petroleum processing unit" for the purpose of these unit-specific conditions, is a petroleum processing unit that contains 40 CFR 63, Subpart CC Group I process vents that vent to the Refinery Flare System or a process heater.
- b. Each affected petroleum processing unit is subject to the emission limits identified in Conditions 5.2.2, 5.2.3, and 5.2.4 and the LDAR requirements in Section 7.10.
- c. Each affected petroleum processing unit is subject to the miscellaneous process vent provisions of 40 CFR 63.643 (Refinery MACT). This requirement has two options for compliance:
 - i.
 - A. Reduce emissions of organic HAPs using a flare that meets the requirements of § 63.11(b) of 40 CFR 63 Subpart A.
 - B. Reduce emissions of organic HAPs, using a control device by 98 weight-percent or to a concentration of 20 parts per million by volume, on a dry basis, corrected to a 3 percent oxygen, whichever is less stringent. Compliance can be determined by measuring either organic HAPs or TOCs using the procedures in § 63.645.
 - ii. If a boiler or process heater is used to comply with the percentage of reduction requirement or concentration limit specified in Condition 7.5.3(c) (i) (B) of this section, then the vent stream shall be introduced into the flame zone of such a device or in a

location such that the required percent reduction or concentration is achieved. Testing and monitoring is required as only specified in § 63.644(a) and § 63.645 of this subpart.

d. Malfunction and Breakdown Provisions

Unit-specific malfunction and breakdown provisions for the affected petroleum processing units are discussed in Section 7.13.

e. Startup and Shutdown Provisions

All of these units are subject to the process turnaround requirement in Condition 5.2.3(d), that is, before any unit is opened it must be vented to a flare down to 5 psig. Unit-specific startup and shutdown provisions for the affected petroleum processing units are discussed in Section 7.13.

7.5.4 Non-Applicability of Regulations of Concern

- a. This permit is issued based on the affected petroleum process vents not being subject to 40 CFR 60 Subpart J because that subpart applies to only specific processes and these process vents are not among them. The fuel combustion units within these processes that are subject to Subpart J have applicability discussed in Section 7.1.
- b. Pursuant to 40 CFR 63.641 (definition of miscellaneous process vents), gaseous streams that are routed to a fuel gas system do not qualify as miscellaneous process vents.

7.5.5 Control Requirements

The flares and process heater that these affected units are vented to shall be operated to comply with Condition 7.5.3(c). The flare requirements are listed in Condition 7.7.3(d).

7.5.6 Emission Limitations

There are no specific emission limitations for these units.

7.5.7 Testing Requirements

- a. Upon request by the Illinois EPA and/or USEPA, pursuant to Section 39.5(7)(b) of the Act and 40 CFR 63.571, the Permittee shall conduct testing of the affected petroleum processing operations for purposes of demonstrating compliance to conditions of this permit according to USEPA approved methods approved

by the Illinois EPA or USEPA, at such reasonable times as may be specified by the Illinois EPA and/or USEPA. This test shall meet the following requirements:

- i. The test shall be conducted by an approved independent testing service.
 - ii. The test shall be conducted during conditions which are representative of maximum emissions.
- b. Any testing of the flares, specified as control equipment in Condition 7.5.2, is discussed in Section 7.7.

7.5.8 Monitoring Requirements

- a. Any monitoring for the flares which act as control equipment for process vents as specified in Condition 7.5.2 is discussed in Section 7.7 of this permit.
- b. Pursuant to 40 CFR 63.644(a)(3), any process heater with a design heat input capacity of greater than 44 megawatts is exempt from monitoring. The 1F-1 process heater used as control device for one of the affected petroleum processing units has a heat input capacity greater than 44 megawatts.

7.5.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected petroleum process unit to demonstrate compliance with Conditions 5.5.1 and 5.2.4, pursuant to Section 39.5(7)(b) of the Act:

- a. Any records required by the NESHAP, 40 CFR 63.654; and
- b. VOM are considered part of flare emissions for any process vents ducted to a flare. See Section 7.7.

7.5.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of an affected petroleum processing unit with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

Any reports required by the NESHAP, 40 CFR 63.654.

7.5.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.5.12 Compliance Procedures

- a. Compliance with the requirements of Conditions in 7.5.3 is determined by meeting the operating requirements of Condition 7.5.5, the testing requirements of Condition 7.5.7, the monitoring requirements of Condition 7.5.8, the recordkeeping requirements of 7.5.9 and the reporting requirements of Condition 7.5.10.
- b. Since the process vents are ducted to the Refinery Flare System in Section 7.7 of this permit, emissions are included in the calculations presented there.
- c. Emissions from the vent stream to the 1F-1 process heater shall be included with emissions from the 1F-1 process heater as required by Section 7.1.

7.6 Unit: Closed-Vent or Closed Purge System Petroleum Processes
Control: None

7.6.1 Description

This section identifies petroleum process units which contain closed vent or closed purge systems which are not subject to the requirements in 40 CFR 63, Subpart CC. Some of these units may have been listed in Section 7.5. That is, they have a Subpart CC Group I vent but also have closed purge systems.

Almost all of these processes have process heaters that are included in Section 7.1. The process heaters are fuel combustion devices that vent through their own stacks.

Although there are no MACT Group I process vents in these units, these units are subject to the leak detection and repair program covered in Section 7.10 and also the rules in Section 5.2.2 to 5.2.4. For instance, if a vessel is pressurized and is to be shut down, it must be vented to a flare.

7.6.2 List of Emission Units and Air Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Emission Control Equipment
58	Plant 1	Crude Unit	None
59	Plant 2	Ultrafiner	None
60	Plant 4	Unicracker	None
61	Plant 7	HF Alkylation	None
62	Plant 8	#1 Sat Gas Plant	None
63	Plant 9	Sulfur and Amine Treating	None
64	Plant 11	LPG Mercox Treaters	None
65	Plant 17	Desalter Water Stripper	None
66	Plant 23	#2 Sat Gas Plant	None
87	Plant 63	No. 2 Sulfur Recovery Unit	None
67	Plant 64	Sour Water Stripper	None
68	Plant 69	Distillate Hydrotreater Unit	None
69	Plant 71	MTBE/ETBE/Iso-Octene Unit	None
70	Plant 73	Sulfur and Amine Treating	None
71	Plant 76	Penex Feed Splitter	None
72	Plant 77	Penex/Naphtha Isomerization Unit	None
73	Plant 83	Light Ends Plant	None
74	Plant 87	Special Coker	None

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Emission Control Equipment
75	Plant 90	Regular Coker	None
76	Plant 74	Gasoline Desulfurization Unit	None
77	Plant 5	Hydrogen Plant	None
41	Plant 82	Fluid Catalytic Cracking Unit	None
42	Plant 3	Ultraformer	None
43	Plant 16	Naphtha Hydrotreater/Platformer	None
85	Plant 62	No. 1 Sulfur Recovery Unit	None
86	Plant 66	No. 1 Tail Gas Treatment Unit	None
87	Plant 63	No. 2 Sulfur Recovery Unit	None
88	Plant 67	No. 2 Tail Gas Treatment Unit	None

7.6.3 Applicability Provisions and Applicable Regulations

- a. The "affected closed-vent or closed purge system petroleum process units" for the purpose of these unit-specific conditions, are processes identified in Condition 7.6.2 and which do not vent to the atmosphere.
- b. Each affected closed-vent or closed purge system petroleum process unit is subject to the emission limits identified in Condition 5.2.2 to 5.2.4.
- c. Each affected closed-vent or closed purge system petroleum process unit is subject to the leak detection and repair (LDAR) requirements in Section 7.10.
- d. Each affected closed-vent or closed purge system petroleum process unit constructed after January 4, 1983 is subject to equipment leaks of VOM in petroleum refineries (40 CFR 60 Subpart GGG).

7.6.4 Non-Applicability of Regulations of Concern

This permit is issued based on the affected closed-vent petroleum process units not being subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected closed-vent petroleum process units are not subject to an emission limitation or standard for the applicable regulated air pollutant.

7.6.5 Control Requirements

None.

7.6.6 Emission Limitations

In addition to Condition 5.2.2 and the source wide emission limitations in Condition 5.5, the affected closed-vent petroleum process units are subject to the following:

N/A.

There are no specific emission limitations for this unit, however, there are source wide emission limitations in Condition 5.5 that include these units.

7.6.7 Operating Requirements

None.

7.6.8 Monitoring Requirements

See LDAR requirements in Section 7.10.

7.6.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected closed-vent petroleum process unit to demonstrate compliance with Condition 5.5.1, pursuant to Section 39.5(7)(b) of the Act:

Any process upset that vents directly to the atmosphere.

7.6.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of an affected closed-vent petroleum process unit with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

None

7.6.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.6.12 Compliance Procedures

None

7.7 Unit: Refinery Flare System (84F-1 - 84F-6 Flares) and 84F-7 Flare
Control: Flare

7.7.1 Description

There are seven flares at the Robinson Refinery. Six of the flares (84F-1 through 84F-6) are large, interconnected flares which serve the refinery process areas and certain pressurized storage tanks containing propane, butane, and isobutene. Collectively, these six flares are referred to as the Refinery Flare System. Flare 84F-2 also has a flare gas recovery compressor (84K-1) which is capable of recovering vent streams as refinery fuel. The seventh flare (84F-7) is significantly smaller than the other flares and is used to control emissions from wastewater treatment plant facilities and slop oil tanks. Flare 84F-7 has a separate system of collection headers and associated equipment and is not connected to the main flare system. The following table lists the primary flare for each refinery process:

Flare	Primary Process Area Served
Flares 84F-1, 84F-5, and 84F-6	Crude Unit, Ultrafiner, Ultraformer, Unicracker, HF Alkylation, No. 1 Sat Gas, No. 2 Sat Gas, Platformer, MTBE, FCCU, Tanks 783-785, LPG Railcars Closed Loop Sampling
Flare 84F-2	Penex, Special Coker, Regular Coker
Flare 84F-3	No. 1 Sulfur Recovery Unit, No. 1 Tail Gas Unit, No. 2 Sulfur Recovery Unit, No. 2 Tail Gas Unit, Sour Water Stripper, Amine Regeneration, Penex Feed Splitter, FCCU, Butane Spheres, Isobutene Spheres, Propane Bullet Tanks, LPG Pumps
Flare 84F-4	No. 1 Sulfur Recovery Unit, No. 1 Tail Gas Unit, No. 2 Sulfur Recovery Unit, No. 2 Tail Gas Unit, Sour Water Stripper, Amine Regeneration, Distillate Hydrotreater
Flare 84F-7	Wastewater Treatment Plant and Associated Tanks, Slop Oil Tanks

The Refinery Flare System is used for the following:

- Instances where flaring is necessary to prevent or minimize hazards to refinery personnel and/or individuals in the community;

- Instances of malfunction or breakdown of process equipment, including unit instrumentation systems;
- Instances where flaring is necessary to prevent or minimize damage to refinery process equipment.

Flare loads are variable. Exact accounting of flows or sources is not possible because flows are not metered. The Refinery Flare System is designed to assure adequate emergency relief capacity for process equipment. In the case of a major process upset, instantaneous high flare flow may occur briefly, but the system is linked so that a high load can be shared by more than one flare if needed. There is also a potential for any number of controlled releases to the Refinery Flare System to maintain pressure control of refinery gas systems. The nature of a complex refinery results in typically low flow rates of hydrocarbon gas streams that must be vented at low pressure. Examples include gas analyzer samples streams or purges, pump seals, or intermittent process vents.

For identification purposes the flares are identified as emission units but they also serve as control devices for other equipment in this permit, and therefore are also listed as control equipment.

Both NSPS (40 CFR 60.11) and NESHAP (40 CFR 63.11) have been cited as applicable rules but the requirements are essentially identical.

7.7.2 List of Emission Units and Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description	Emission Control Equipment
78	84F-1 Flare	Refinery Flare System	Flare
79	84F-2 Flare	Refinery Flare System	Flare
80	84F-3 Flare	Refinery Flare System	Flare
81	84F-4 Flare	Refinery Flare System	Flare
82	84F-5 Flare	Refinery Flare System	Flare
83	84F-6 Flare	Refinery Flare System	Flare
84	84F-7 Flare	Control Device for Certain Storage Tanks and Wastewater Treatment Facilities	Flare

7.7.3 Applicability Provisions and Applicable Regulations

- An "affected flare" for the purposes of these unit-specific conditions, is a smokeless flare identified in Condition 7.7.2 that is used as a control device or to safely destruct releases from

safety relief valves, vapor blowdown systems, process vents, etc.

- b. Pursuant to 35 IAC 215.143, each affected flare operated as a control device for the purposes of controlling emissions from safety relief valves and vapor blowdown systems shall be smokeless. Pursuant to the definition of a smokeless flare in 35 IAC 211.6050, the PM emitted to the atmosphere shall not have an appearance density or shade darker than No. 1 on the Ringlemann Chart, that is equivalent to an opacity of 20%. 35 IAC 237.120(f) also requires that flares for burning of waste gases at refineries be equipped with a smokeless tip.
- c. The affected flare systems are subject to the emission limits and requirements identified in Section 5 of this permit.
- d. To assure compliance with the smokeless flare requirement cited above, the Permittee has agreed to operate all of the flares in accordance with 40 CFR 60.18 and 40 CFR 63.11, as follows:
 - i. Flares shall be designed for and operated with no visible emissions as determined by the methods specified in Condition 7.7.7(b) (i) (40 CFR 60.18(f), 40 CFR 63.11(b)), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours [40 CFR 60.18(c) (1), 40 CFR 63.11(b) (4)].
 - ii. Flares shall be operated with a flame present at all times, as determined by the methods specified in Condition 7.7.8(a) (40 CFR 60.18(f), 40 CFR 63.11(b)) [40 CFR 60.18(c) (2), 40 CFR 63.11(b) (5)].
 - iii. An owner/operator has the choice of adhering to either the heat content specifications in Condition 7.7.3(d) (iii) (B) (40 CFR 60.18(c) (3) (ii), 40 CFR 63.11(b) (6) (ii)) and the maximum tip velocity specifications in Condition 7.7.3(d) (iv) (40 CFR 60.18(c) (4), 40 CFR 63.11(b) (7) or (b) (8)), or adhering to the requirements in Condition 7.7.3(d) (iii) (A) (40 CFR 60.18(c) (3) (i), 40 CFR 63.11(b) (6) (i)). [40 CFR 60.18(c) (3), 40 CFR 63.11(b) (6)]
 - A. 1. Pursuant to 40 CFR 60.18(c) (3) (i) (A) and 40 CFR 63.11(b) (6) (i) (A), flares shall be used that have a diameter of 3 inches or greater, are nonassisted, have a hydrogen content of 8.0 percent

(by volume or greater, or 6.0 percent (by volume) or greater for flares subject to 40 CFR 63.11, and are designed for and operated with an exit velocity less than 37.2 m/sec (122 ft/sec) and less than the velocity, V_{max} , as determined by the following equation:

$$V_{max} = (XH_2 - K_1) \times K_2$$

Where:

- V_{max} = Maximum permitted velocity, m/sec.
- K_1 = Constant, 6.0 volume-percent hydrogen.
- K_2 = Constant, 3.9 (m/sec)/volume-percent hydrogen.
- XH_2 = The volume-percent of hydrogen, on a wet basis, as calculated by using the American Society for Testing and Materials (ASTM) Method D1946-77. (Incorporated by reference as specified in 40 CFR 60.17 or 40 CFR 63.14).

2. The actual exit velocity of a flare shall be determined by the method specified in Condition 7.7.7(b)(iii) (40 CFR 60.18(f)(4), 40 CFR 63.11(b)(7)(i)). [40 CFR 60.18(c)(3)(i)(B), 40 CFR 63.11(b)(6)(i)(B)]

B. Flares shall be used only with the net heating value of the gas being combusted being 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted being 7.45 MJ/scm (200 Btu/scf) or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be determined by the methods specified in Condition 7.7.7(b)(ii) (40

CFR 60.18(f) (3), 40 CFR 63.11(b) (6) (ii)).
[40 CFR 60.18(c) (3) (ii), 40 CFR
63.11(b) (6) (ii)]

- iv. A. Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in Condition 7.7.7(b) (iii) (40 CFR 60.18(f) (4), 40 CFR 63.11(b) (7) (i)), less than 18.3 m/sec (60 ft/sec), except as provided in Conditions 7.7.3(d) (iv) (B) and (C) (40 CFR 60.18(c) (4) (ii) and (iii), 40 CFR 63.11(b) (7) (ii) and (iii)) below. [40 CFR 60.18(c) (4) (i), 40 CFR 63.11(b) (7) (i)]
- B. Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in Condition 7.7.7(b) (iii) (40 CFR 60.18(f) (4), 40 CFR 63.11(b) (7) (i)), equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec) are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf). [40 CFR 60.18(c) (4) (ii), 40 CFR 63.11(b) (7) (ii)]
- C. Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in Condition 7.7.7(b) (iii) (40 CFR 60.18(f) (4), 40 CFR 63.11(b) (7) (i)), less than the velocity, V_{max} , as determined by the method specified in Condition 7.7.7(b) (iv) (40 CFR 60.18(f) (5), 40 CFR 63.11(b) (7) (iii)), and less than 122 m/sec (400 ft/sec) are allowed. [40 CFR 60.18(c) (4) (iii), 40 CFR 63.11(b) (7) (iii)]
- v. Air-assisted flares shall be designed and operated with an exit velocity less than the velocity, V_{max} , as determined by the method specified in Condition 7.7.7(b) (v) (40 CFR 60.18(f) (6), 40 CFR 63.11(b) (8)). [40 CFR 60.18(c) (5), 40 CFR 63.11(b) (8)]
- vi. Flares used to comply with this section shall be steam-assisted, air-assisted, or nonassisted. [40 CFR 60.18(c) (6), 40 CFR 63.11(b) (2)]

- e. Owners or operators of flares used to comply with the provisions of 40 CFR 60.18 and 40 CFR 63.11 shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs. Applicable subparts will provide provisions stating how owners or operators of flares shall monitor these control devices [40 CFR 60.18(d), 40 CFR 63.11(b) (1)].
- f. Flares used to comply with provisions of 40 CFR 60.18 and 40 CFR 63.11 shall be operated at all times when emissions may be vented to them [40 CFR 60.18(e), 40 CFR 63.11(b) (3)].
- g. No person shall cause or allow the emission of sulfur dioxide into the atmosphere from any affected flare to exceed 2000 ppm [35 IAC 214.301].

7.7.4 Non-Applicability of Regulations of Concern

None

7.7.5 Operational and Production Limits and Work Practices

- a. Except during startup, shutdown, or malfunction, the Permittee shall not vent any gas stream to an affected flare containing greater than 2000 ppm of reduced sulfur compounds. This limit ensures that the affected flares meet the emission limits in Condition 7.7.3(h) (35 IAC 214.301).
- b. The 84F-6 Flare can be operated interchangeably or in conjunction with the 84F-1 and 84F-5 Flares.

7.7.6 Emission Limitations

In addition to Condition 5.2.2 and the source wide emission limitations in Condition 5.5, the affected flare 84F-6 is subject to the following:

Emissions from the affected flare 84F-6 pilot flame shall not exceed the following limits:

<u>Pollutant</u>	<u>Emissions (Ton/Year)</u>
NO _x	12.1
CO	5.3

These limits are based on the maximum firing rate of the pilot flame.

The above limitations were established in Permit 91110003, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21 [T1].

7.7.7 Testing Requirements

- a. Upon request by the Illinois EPA and/or USEPA, pursuant to Section 39.5(7)(b) of the Act, the Permittee shall conduct testing of the affected flare for purposes of demonstrating compliance to conditions of this permit according to USEPA approved methods of 40 CFR 60 Appendix A or other appropriate methods approved by the Illinois EPA or USEPA, at such reasonable times as may be specified by the Illinois EPA and/or USEPA. This test shall meet the following requirements:
 - i. The test shall be conducted by an approved independent testing service.
 - ii. The test shall be conducted during conditions which are representative of maximum emissions.
- b.
 - i. USEPA Reference Method 22 shall be used to determine the compliance of flares with the visible emission provisions of Condition 7.7.3(d)(i) (40 CFR 60.18, 40 CFR 63.11). The observation period is 2 hours and shall be used according to Method 22 [40 CFR 60.18(f)(1), 40 CFR 63.11(b)(4)].
 - ii. Pursuant to 40 CFR 60.18(f)(3) and 40 CFR 63.11(b)(7)(ii), the net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \sum_{i=1}^n C_i H_i$$

Where:

H_T = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25°C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20°C;

- K = Constant = 1.740×10^{-7}
(1/ppm) (gmole/scm) (MJ/kcal) where
the standard temperature for
(gmole/scm) is 20°C.
- C_i = Concentration of sample component i
in ppm on a wet basis, as measured
for organics by Reference Method 18
and measured for hydrogen and
carbon monoxide by ASTM D1946-77
(Incorporated by reference as
specified in 40 CFR 60.17 and 40
CFR 63.14); and
- H_i = Net heat of combustion of sample
component i, kcal/g mole at 25°C
and 760 mm Hg. The heats of
combustion may be determined using
ASTM D2382-76 (incorporated by
reference as specified in 40 CFR
60.17 and 40 CFR 63.14) if
published values are not available
or cannot be calculated.

- iii. The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by USEPA Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip [40 CFR 60.18(f) (4), 40 CFR 63.11(b) (7) (i)].
- iv. Pursuant to 40 CFR 60.18(f) (5) and 40 CFR 63.11(b) (7) (iii), the maximum permitted velocity, V_{max} , for flares complying with Condition 7.7.3(d) (iv) (C) (40 CFR 60.18(c) (4) (iii), 40 CFR 63.11(b) (7) (iii)) shall be determined by the following equation:

$$\text{Log}_{10}(V_{max}) = \frac{(H_T + 28.8)}{31.7}$$

Where:

V_{max} = Maximum permitted velocity, M/sec

28.8 = Constant

31.7 = Constant

H_T = The net heating value as determined
in Condition 7.7.7(b) (ii) (40 CFR

60.18(f)(3), 40 CFR
63.11(b)(6)(ii)).

- v. Pursuant to 40 CFR 60.18(f)(6) and 40 CFR 63.11(b)(8), the maximum permitted velocity, V_{max} , for air-assisted flares shall be determined by the following equation:

$$V_{max} = 8.704 + 0.7084 H_T$$

Where:

V_{max}	=	Maximum permitted velocity, m/sec
8.706	=	Constant
0.7084	=	Constant
H_T	=	The net heating value as determined in Condition 7.7.7(b)(ii) (40 CFR 60.18(f)(3), 40 CFR 63.11(b)(6)(ii)).

7.7.8 Monitoring Requirements

The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame. [40 CFR 60.18(f)(2), 40 CFR 63.11(b)(5)] In the absence of a thermocouple or any other equivalent device, visual readings may be used to confirm the presence of a flare pilot flame.

7.7.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected flares to demonstrate compliance with Conditions 5.5.1, 7.7.3, 7.7.5, and 7.7.6, pursuant to Section 39.5(7)(b) of the Act:

- Date and duration of any time when the pilot flame monitoring equipment of an affected flare was not in operation, with explanation.
- Date and duration of any time when there was no pilot flame present at an affected flare, with explanation.
- The Permittee shall maintain records of the following items for each exceedance of the limits in Conditions 7.7.3, 7.7.5, or 7.7.6, which shall include:

- i. Identification of the limit that may have been exceeded.
 - ii. Duration of the possible exceedance.
 - iii. An estimate of the amount of emissions in excess of the applicable standard.
 - iv. A description of the cause of the possible exceedance.
 - v. When compliance was reestablished.
- d. The Permittee shall maintain records of the most recent tests required in Condition 7.7.7(a), which include the following pursuant to Section 39.5(7)(e) of the Act:
- i. The date, place and time of sampling or measurements.
 - ii. The date(s) analyses were performed.
 - iii. The company or entity that performed the analyses.
 - iv. The analytical techniques or methods used.
 - v. The results of such analyses.
 - vi. The operating conditions as existing at the time of sampling or measurement.
- e. VOM, NO_x, SO₂, and CO emissions from the affected flares (ton/yr).

7.7.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of the affected flares with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. Within 30 days of exceedance of the limits in Conditions 7.7.3, 7.7.5, or 7.7.6, the notification shall include:
 - i. Identification of the limit that may have been exceeded.
 - ii. Duration of the possible exceedance.

- iii. An estimate of the amount of emissions in excess of the applicable standard.
 - iv. A description of the cause of the possible exceedance.
 - v. When compliance was reestablished.
- b. The Permittee shall fulfill the following reporting requirements for each test performed pursuant to Condition 7.7.7(a):
- i. At least 30 days prior to the expected date of testing, a written test plan shall be submitted to the Illinois EPA for review. This plan shall describe the specific procedures for testing, including:
 - A. The expected date and time of the test.
 - B. The person(s) who will be performing the sampling and analysis and their experience with similar tests.
 - C. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for the emission unit will be determined.
 - D. The specific determinations of emissions and operation which are intended to be made, including sampling and monitoring locations.
 - E. The specific sampling, analytical, and quality control procedures which will be used, with an identification of the standard methods upon which they are based.
 - F. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification.
 - G. Any proposed use of an alternative test method, with detailed justification.
 - ii. Notification of the actual date and time of the testing shall be submitted to the Illinois EPA at least 5 working days prior to the

actual date of the test, so the Illinois EPA can arrange to have an observer present.

- iii. The results of the test shall be submitted to the Illinois EPA within 90 days after the testing is complete. These results shall be included in a final report, which shall include the following:
 - A. A summary of results.
 - B. A description of the test methods used, including a description of sampling points, sampling train, analysis equipment, and test schedule.
 - C. A detailed description of test conditions, including:
 - 1. Process information including the mode(s) of operation.
 - 2. A discussion of any preparatory actions taken, i.e., inspections, maintenance, and repair.
 - D. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.
 - E. An explanation of any discrepancies among individual tests or anomalous data.
 - F. The results of all quality control evaluations, including a copy of all quality control data.

7.7.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to an affected flare without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

None

7.7.12 Compliance Procedures

- a. Compliance with the operating requirements of Condition 7.7.3(d), (e), and (f) is assured through

proper operation of each affected flare, i.e., the presence of a flame, as demonstrated by the testing, monitoring, and recordkeeping requirements of Conditions 7.7.7(b), 7.7.8, and 7.7.9(a) and (b).

- b. Compliance with the SO₂ requirements of Condition 7.7.3(g) shall be demonstrated by the operating requirements in Condition 7.7.5(b) and the monitoring requirements in Condition 7.7.8(b). SO₂ emissions are calculated using best engineering judgment.
- c. VOM, NO_x and CO emissions shall be calculated using the emission factors in AP-42 Section 13.5.
- d. In accordance with the requirements of a Consent Decree with USEPA, effective January 1, 2006 or some later date mutually agreed upon by both parties, all flares will be subject to 40 CFR 60.18 requirements and will also be considered to be fuel gas combustion devices subject to 40 CFR 60 Subpart J requirements.

7.8 Unit: Sulfur Recovery Units (SRU)
Control: Offgas Treatment and Thermal Oxidizers

7.8.1 Description

There are two Sulfur Recovery Units (SRUs), Plants 62 and 63, and two Tail Gas Treatment Units (TGTUs), Plants 66 and 67, at the Robinson Refinery. Each Thermal Oxidizer is sized to handle all of the gas from both TGTUs, but during normal operation each TGTU is routed to a separate Thermal Oxidizer.

Feed to the SRUs consists of Sour Water Stripper off-gas from the Sour Water Stripper (Plant 64), acid gas from various refinery processes, and recycle gas from the TGTUs. During normal operation, acid gas and TGTU recycle gas are distributed to both SRUs while the Sour Water Stripper gas is routed to one SRU. After liquid knockout, SRU feed gas is heated in an acid gas burner/thermal reactor. A portion of the SRU acid gas feed is combusted in the reactor burner. The reaction to convert hydrogen sulfide to elemental sulfur is based on controlled combustion with air in which a third of the hydrogen sulfide is converted to sulfur dioxide. The sulfur dioxide reacts with the remaining hydrogen sulfide to form sulfur and water vapor. Excess heat in the thermal reactor combustion gas is recovered in a waste heat boiler and used to generate 600 psig saturated steam.

Each SRU train consists of a three-stage Claus reactor, three reheat exchangers using 600 psig steam, and four sulfur condensers. Effluent gas from the thermal reactor goes to the first sulfur condenser prior to the first stage of the Claus reactor. The reactors convert hydrogen sulfide to molten sulfur. The sulfur drops out as a liquid from each of the four condensers and is collected in a heated sulfur pit. Vent gas from the sulfur pit is routed to the Thermal Oxidizers. Sulfur is removed between reaction stages to lower the sulfur dew point so that the subsequent reactor stages can operate at lower temperatures to provide better equilibrium sulfur recovery. Elemental sulfur is loaded via a single loading station into either rail cars or tank trucks.

From the fourth and final sulfur condenser, gas is routed to the TGTU. Each TGTU is comprised of three sections: a SCOT Hydrogenation section which converts any sulfur present to hydrogen sulfide followed by an amine absorber section which removes hydrogen sulfide into an aqueous amine solution. A third section of the TGTUs contains common equipment including amine storage and the amine regenerator system, which strips hydrogen sulfide from the rich amine and recycles the hydrogen sulfide to the SRUs. Excess heat from the SCOT Hydrogenation section is used to

generate 50 psig steam. The TGTU vent gas from the amine absorber is directed to the Thermal Oxidizers to combust any remaining hydrogen sulfide in the TGTU gas to sulfur dioxide.

7.8.2 List of Emission Units and Pollution Control Equipment

Permittee Emission Unit No.	Unit Number	Description	Emission Control Equipment
85	Sulfur Recovery Unit No. 1, Plant 62, including 62F-1	Recovery of Sulfur from Various Streams	SCOT Unit
86	Tail Gas Treatment Unit No. 1, Plant 66, including 66F-1 and 66F-2	SCOT Process	Thermal Oxidizer (66F-3)
87	Sulfur Recovery Unit No. 2, Plant 63, including 63F-1	Recovery of Sulfur from Various Streams	SCOT Unit
88	Tail Gas Treatment Unit No. 2, Plant 67, including 67F-1 and 67F-2	SCOT Process	Thermal Oxidizer (66F-5)
89	Sulfur Loading	Loading of Sulfur Into Rail Cars or Tank Trucks	None

7.8.3 Applicability Provisions and Applicable Regulations

- a. The "affected sulfur recovery units" for the purpose of these unit-specific conditions, are the sulfur recovery units and associated equipment described in Conditions 7.8.1 and 7.8.2.
- b. The affected sulfur recovery units are subject to the emission limits and requirements identified in Section 5 of this permit.
- c. Components associated with the affected sulfur recovery units are subject to the fugitive emission regulations as addressed by Section 7.10, which includes inspection, recordkeeping, reporting requirements, and compliance procedures for fugitive emissions.
- d. i. The affected sulfur recovery units shall comply with the requirements for Claus sulfur recovery plants in NSPS for Petroleum Refineries, 40 CFR 60 Subparts A and J. The requirements for the system used by the

Permittee are as follows: For an oxidation control system or a reduction control system followed by incineration, 250 ppm by volume (dry basis) of sulfur dioxide (SO₂) at zero percent excess air. This limit is based on twelve-hour rolling average. [40 CFR 60.104(a) (2) (i)].

- ii. The Permittee shall operate the affected sulfur recovery units and associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions set forth in 40 CFR 60.11(d).
- iii. The SCOT Units will be operated at all times that the affected sulfur recovery unit or any individual Claus train is operating, except during maintenance turnaround periods of the SCOT Units.
- iv. The thermal oxidizers burn refinery fuel gas as supplemental fuel; the fuel gas must meet the requirement of 40 CFR 60.104(a) (1) that it not contain more than 0.1 grains H₂S/dscf or 160 ppmv.
- e.
 - i. Each sulfur recovery unit is subject to 40 CFR 63 Subpart UUU, but with a future compliance date of April 11, 2005. The compliance standards are discussed in 40 CFR 63.1567, which reference HAP emission limits in Table 29 of Subpart UUU and operating limits in Table 30.
 - ii. Startup, Shutdown and Malfunction (SSM) Plan

The Permittee is required to have a written Startup, Shutdown and Malfunction (SSM) Plan for equipment subject to the Petroleum Refinery rule as described in Condition 7.8.3(f) (i). The SSM plan is not required until the date that compliance is required, April 11, 2005 [40 CFR 63.6(e) (3)].
 - iii. Operation, Maintenance and Monitoring (OM & M) Plan

The Permittee is required to have a written operation, maintenance and monitoring plan for any control system and any continuous monitoring system employed for achieving and determining compliance with the NESHAP listed above.

This OM & M plan must be submitted to the Illinois EPA with the notification of compliance status for review and approval. The contents of the OM & M plan and dates for submittal are listed in 40 CFR 63.1574(f).

f. Malfunction and Breakdown Provisions

In the event of a malfunction or breakdown of the affected sulfur recovery units, the Permittee is authorized to continue operation of the affected sulfur recovery units (SRUs) in violation of the applicable requirement of 35 IAC 212.122, as necessary to prevent risk of injury to personnel or severe damage to equipment. This authorization is subject to the following requirements:

- i. The Permittee shall repair the damaged feature(s) of the affected SRU or remove the affected SRU from active service as soon as practicable. This shall be accomplished within three hours unless the feature(s) can not be repaired within eight hours and the affected SRU can not be removed from active service, and the Permittee obtains an extension, for up to three days, from the Illinois EPA. The request for such an extension must document that the affected SRU is unavailable and specify a schedule of actions the Permittee will take that will assure the feature(s) will be repaired or the affected SRU shutdown as soon as possible.
- ii. The Permittee shall fulfill the applicable recordkeeping and reporting requirements of Conditions 7.8.9(f).
- iii. The Permittee shall follow its "Preventative Maintenance and Operability Plan for the Sulfur Recovery Complex" and the SS&M Plan and OM&M Plan [See Condition 7.8.3(e) (ii) and (iii)] after the date when they are required if those plans are different or an addition to the above plan.

g. Startup Provisions

The Permittee is authorized to operate an affected sulfur recovery units in violation of the applicable limit of 35 IAC 212.122 during startup pursuant to 35 IAC 201.262, as the Permittee has affirmatively demonstrated that all reasonable efforts have been made to minimize startup emissions, duration of

individual starts, and frequency of startups. This authorization is subject to the following:

- i. This authorization only extends for a period of up to 72 hours following initial firing of fuel during each startup event.
- ii. The Permittee shall implement established startup procedures in its operability plan to minimize startup emissions, the duration of startups, and minimize the frequency of startups.
- iii. The Permittee shall fulfill the applicable recordkeeping requirements of Condition 7.8.9(e).

7.8.4 Non-Applicability of Regulations of Concern

- a. 35 IAC 214.301 shall not apply to an affected sulfur recovery unit designed to remove sulfur compounds from the flue gases of petroleum and petrochemical processes [35 IAC 214.382(a)].
- b. The provisions of 35 IAC 215.301 and 302, Use of Organic Material, shall not apply to fuel combustion emission sources [35 IAC 215.303]. Furthermore, the provisions of 35 IAC 215.301 and 302 does not apply to petroleum or petrochemical manufacturing processes pursuant to 35 IAC 215.441.
- c. The affected sulfur recovery units are not subject to the NESHAP for Petroleum Refineries, 40 CFR 63 Subpart CC because sulfur plant vents are specifically exempted from applicability by 40 CFR 63.640(d)(4).

7.8.5 Operational and Production Limits and Work Practices

- a. The Permittee shall route and combust all waste gas streams generated by the affected sulfur recovery unit in a direct flame afterburner (thermal oxidizer).
- b. Beginning April 11, 2005, the Permittee shall comply with the operating limits in Table 30 of 40 CFR 63 Subpart UUU.

7.8.6 Emission Limitations

In addition to Condition 5.2.2 and the source wide emission limitations in Condition 5.5, the affected thermal oxidizers are subject to the following:

Emissions from the Thermal Oxidizers 66F-3 and 66F-5 combined shall not exceed the following limits:

<u>Pollutant</u>	<u>Emissions</u>	
	<u>(Tons/Month)</u>	<u>(Tons/Year)</u>
NO _x	2.6	15.1
SO ₂	12.5	74.6
CO	2.0	11.5
PM	0.2	0.8
VOM	0.2	1.1

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total) [T1].

The above limitations were established in Permit 03030085, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21 [T1].

7.8.7 Testing Requirements

- a. Upon request by the Illinois EPA and/or USEPA, pursuant to Section 39.5(7)(b) of the Act and 35 IAC 219.105, the Permittee shall conduct testing of the affected sulfur recovery units for purposes of demonstrating compliance to conditions of this permit according to USEPA approved methods of 40 CFR 60 Appendix A or other appropriate methods approved by the Illinois EPA or USEPA, at such reasonable times as may be specified by the Illinois EPA and/or USEPA. This test shall meet the following requirements:
 - i. The test shall be conducted by an approved independent testing service.
 - ii. The test shall be conducted during conditions which are representative of maximum emissions.
- b. The Permittee shall comply with the following testing requirements for the affected sulfur recovery units in accordance with 40 CFR 60 Subpart J:
 - i. The owner or operator shall determine compliance with the SO₂ and the H₂S and reduced sulfur standards in Condition 7.8.3(d)(i) (40 CFR 60.104(a)(2)) as follows [40 CFR 60.106(f)]:
 - A. USEPA Method 6 shall be used to determine the SO₂ concentration. The concentration in

mg/dscm obtained by Method 6 or 6C is multiplied by 0.3754 to obtain the concentration in ppm. The sampling point in the duct shall be the centroid of the cross section if the cross-sectional area is less than 5.00 m² (53.8 ft²) or at a point no closer to the walls than 1.00 m (39.4 in.) if the cross-sectional area is 5.00 m² or more and the centroid is more than 1 m from the wall. The sampling time and sample volume shall be at least 10 minutes and 0.010 dscm (0.35 dscf) for each sample. Eight samples of equal sampling times shall be taken at about 30-minute intervals. The arithmetic average of these eight samples shall constitute a run. For Method 6C, a run shall consist of the arithmetic average of four 1-hour samples. Method 4 shall be used to determine the moisture content of the gases. The sampling point for USEPA Method 4 shall be adjacent to the sampling point for Method 6 or 6C. The sampling time for each sample shall be equal to the time it takes for two Method 6 samples. The moisture content from this sample shall be used to correct the corresponding Method 6 samples for moisture. For documenting the oxidation efficiency of the control device for reduced sulfur compounds, USEPA Method 15 shall be used following the procedures of the paragraph below [40 CFR 60.106(f)(1)].

- B. USEPA Method 15 shall be used to determine the reduced sulfur and H₂S concentrations. Each run shall consist of 16 samples taken over a minimum of 3 hours. The sampling point shall be the same as that described for Method 6 in the paragraph above. To ensure minimum residence time for the sample inside the sample lines, the sampling rate shall be at least 3.0 lpm (0.10 cfm). The SO₂ equivalent for each run shall be calculated after being corrected for moisture and oxygen as the arithmetic average of the SO₂ equivalent for each sample during the run. USEPA Method 4 shall be used to determine the moisture content of the gases as in the paragraph above. The sampling time for each sample shall be equal to the time it takes for four Method 15 samples [40 CFR 60.106(f)(2)].
- C. The oxygen concentration used to correct the emission rate for excess air shall be

obtained by the integrated sampling and analysis procedure of USEPA Method 3 or 3A. The samples shall be taken simultaneously with the SO₂, reduced sulfur and H₂S, or moisture samples. The SO₂, reduced sulfur, and H₂S samples shall be corrected to zero percent excess air using the following equation [40 CFR 60.106(f) (3)]

$$C_{adj} = C_{meas} [20.9_c / (20.9 - \%O_2)]$$

Where:

C_{adj} = Pollutant concentration adjusted to zero percent oxygen, ppm or g/dscm.

C_{meas} = Pollutant concentration measured on a dry basis, ppm or g/dscm.

20.9_c = 20.9 percent oxygen-0.0 percent oxygen (defined oxygen correction basis), percent.

20.9 = Oxygen concentration in air, percent.

%O₂ = Oxygen concentration measured on a dry basis, percent.

- c. The Permittee shall comply with any performance test requirements of the NESHAP, 40 CFR 63 Subpart UUU, 63.1571. This subpart includes dates by which testing must be completed.

7.8.8 Monitoring Requirements

The Permittee shall install, calibrate, maintain and operate a continuous monitoring system for the affected sulfur recovery units that meets the following requirements in accordance with 40 CFR 60.105(a) (5) through (a) (7):

- a. Pursuant to 40 CFR 60.105(a) (5), for Claus sulfur recovery plants with oxidation control systems or reduction control systems followed by incineration subject to Condition 7.8.3(d) (i) (A) (40 CFR 60.104(a) (2) (i)), an instrument for continuously monitoring and recording the concentration (dry basis, zero percent excess air) of SO₂ emissions into

the atmosphere. The monitor shall include an oxygen monitor for correcting the data for excess air.

- i. The span values for this monitor are 500 ppm SO₂ and 25 percent O₂ [40 CFR 60.105(a)(5)(i)].
 - ii. The performance evaluations for this SO₂ monitor under 40 CFR 60.13(c) shall use Performance Specification 2. Methods 6 or 6C and 3 or 3A shall be used for conducting the relative accuracy evaluations [40 CFR 60.105(a)(5)(ii)].
- b. The Permittee shall comply with the monitoring requirements of the NESHAP, 40 CFR 63 Subpart UUU, 63.1572. These requirements may include dates by which testing must be done as part of a compliance demonstration. The test methods may be the same or similar to the NSPS requirements specified in Condition 7.8.7(a), (b) or (c) above.

7.8.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected sulfur recovery units to demonstrate compliance with Conditions 5.5.1, 7.8.3, and 7.8.5, pursuant to Section 39.5(7)(b) of the Act:

- a. The Permittee shall maintain records of all data generated by the monitoring requirements in Condition 7.8.8 to demonstrate compliance with Conditions 7.8.3(d).
- b. The Permittee shall maintain the following records to determine emissions of SO₂ from the affected sulfur recovery units:
 - i. Thermal oxidizer natural or refinery fuel gas flows (mscf/hr).
 - ii. SO₂ emissions in ppm as determined by the monitoring equipment required by Condition 7.8.8.
 - iii. Emissions of SO₂ (tons/mo).
- c. The Permittee shall maintain records of the following items for each exceedance of the limits in Conditions 7.8.3, 7.8.5, or 7.8.6, which shall include:
 - i. Identification of the limit that may have been exceeded.

- ii. Duration of the possible exceedance.
 - iii. An estimate of the amount of emissions in excess of the applicable standard.
 - iv. A description of the cause of the possible exceedance.
 - v. When compliance was reestablished.
- d. The Permittee shall maintain records of the most recent tests required in Condition 7.8.7, which include the following pursuant to Section 39.5(7) (e) of the Act:
- i. The date, place and time of sampling or measurements.
 - ii. The date(s) analyses were performed.
 - iii. The company or entity that performed the analyses.
 - iv. The analytical techniques or methods used.
 - v. The results of such analyses.
 - vi. The operating conditions as existing at the time of sampling or measurement.
- e. Records for Startup

The Permittee shall maintain the following records, pursuant to Section 39.5(7) (b) of the Act, for each affected sulfur recovery unit (SRU) subject to Condition 7.8.3(g), which at a minimum shall include:

- i. The following information for each startup of an affected SRU:
 - A. Date and duration of the startup, i.e., start time and time normal operation achieved, i.e., tail gas is routed to TGTU;
 - B. If normal operation was not achieved within three days, an explanation why startup could not be achieved in three days;
 - C. A detailed description of the startup, including reason for operation and whether the startup plan was followed;

- D. An explanation why the startup plan and other established startup procedures could not be performed, if not performed;
 - E. The nature of opacity, i.e., severity and duration, during the startup and the nature of opacity at the conclusion of startup, if above normal; and
 - F. Whether exceedance of Condition 5.2.2 may have occurred during startup, with explanation and estimated duration (minutes).
- ii. A maintenance and repair log for each affected SRU, listing each activity performed with date.
- f. Records for Malfunctions and Breakdowns the Sulfur Recovery Units (SRUs)

The Permittee shall maintain records, pursuant to 35 IAC 201.263, of continued operation of an affected SRU subject to 35 IAC 212.122 during malfunctions and breakdown, which as a minimum, shall include:

- i. Date and duration of malfunction or breakdown;
 - ii. A detailed explanation of the malfunction or breakdown;
 - iii. An explanation why the damaged feature(s) could not be immediately repaired or the affected SRU removed from service without risk of injury to personnel or severe damage to equipment;
 - iv. The measures used to reduce the quantity of emissions and the duration of the event;
 - v. The steps taken to prevent similar malfunctions or breakdowns or reduce their frequency and severity; and
 - vi. The amount of release above typical emissions during malfunction/breakdown.
- g. i. The Permittee shall comply with the recordkeeping requirements of the NSPS, 40 CFR 60.7 and 60.107.
- ii. The Permittee shall comply with the recordkeeping requirements of the NESHAP, 40 CFR 63 Subpart UUU, 63.1576 beginning April

11, 2005 or any records prior to that date as part of performance testing or other aspects of a compliance demonstration.

7.8.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of the affected sulfur recovery units with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. Pursuant to 40 CFR 60.105(e), for the purpose of reports under 40 CFR 60.7(c), periods of excess emissions from the affected sulfur recovery units that shall be determined and reported are defined as follows:

NOTE: All averages, except for opacity, shall be determined as the arithmetic average of the applicable 1-hour averages, e.g., the rolling 3-hour average shall be determined as the arithmetic average of three contiguous 1-hour averages.

- i. All 12-hour periods during which the average concentration of SO₂ as measured by the SO₂ continuous monitoring system under Condition 7.8.8(a) (40 CFR 60.105(a)(5)) exceeds 250 ppm (dry basis, zero percent excess air) [40 CFR 60.105(e)(4)(i)]; or
 - ii. All 12-hour periods during which the average concentration of reduced sulfur (as SO₂) as measured by the reduced sulfur continuous monitoring system under 40 CFR 60.105(a)(6) exceeds 300 ppm [40 CFR 60.105(e)(4)(ii)]; or
 - iii. All 12-hour periods during which the average concentration of SO₂ as measured by the SO₂ continuous monitoring system under 40 CFR 60.105(a)(7) exceeds 250 ppm (dry basis, zero percent excess air) [40 CFR 60.105(e)(4)(iii)].
- b. Within 30 days of exceedance of the limits in Conditions 7.8.3, 7.8.5, or 7.8.6, the notification shall include:
 - i. Identification of the limit that may have been exceeded.
 - ii. Duration of the possible exceedance.

- iii. An estimate of the amount of emissions in excess of the applicable standard.
 - iv. A description of the cause of the possible exceedance.
 - v. When compliance was reestablished.
- c. The Permittee shall fulfill the following reporting requirements for each test performed pursuant to Condition 7.8.7(a):
- i. At least 30 days prior to the expected date of testing, a written test plan shall be submitted to the Illinois EPA for review. This plan shall describe the specific procedures for testing, including:
 - A. The expected date and time of the test.
 - B. The person(s) who will be performing the sampling and analysis and their experience with similar tests.
 - C. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for the emission unit will be determined.
 - D. The specific determinations of emissions and operation which are intended to be made, including sampling and monitoring locations.
 - E. The specific sampling, analytical, and quality control procedures which will be used, with an identification of the standard methods upon which they are based.
 - F. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification.
 - G. Any proposed use of an alternative test method, with detailed justification.
 - ii. Notification of the actual date and time of the testing shall be submitted to the Illinois EPA at least 5 working days prior to the

actual date of the test, so the Illinois EPA can arrange to have an observer present.

iii. The results of the test shall be submitted to the Illinois EPA within 90 days after the testing is complete. These results shall be included in a final report, which shall include the following:

- A. A summary of results.
- B. A description of the test methods used, including a description of sampling points, sampling train, analysis equipment, and test schedule.
- C. A detailed description of test conditions, including:
 - 1. Process information including the mode(s) of operation.
 - 2. A discussion of any preparatory actions taken, i.e., inspections, maintenance, and repair.
- D. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.
- E. An explanation of any discrepancies among individual tests or anomalous data.
- F. The results of all quality control evaluations, including a copy of all quality control data.

d. Reporting of Malfunctions and Breakdowns for SRU

The Permittee shall provide the following notification and reports to the Illinois EPA, Compliance Section and Regional Field Office, pursuant to 35 IAC 201.263, concerning continued operation of an affected SRU subject to Condition 7.8.3(f) during malfunction or breakdown of the SRU.

i. The Permittee shall notify the Illinois EPA's regional office by telephone as soon as possible during normal working hours, but no later than three (3) days, upon the occurrence of noncompliance due to malfunction or breakdown.

- ii. Upon achievement of compliance, the Permittee shall give a written follow-up notice to the Illinois EPA, Compliance Section and Regional Field Office, providing a detailed explanation of the event, an explanation why continued operation of the SRU was necessary, the length of time during which operation continued under such conditions, the measures taken by the Permittee to minimize and correct deficiencies with chronology, and when the repairs were completed or when the SRU was taken out of service.
 - iii. If compliance is not achieved within 5 working days of the occurrence, the Permittee shall submit interim status reports to the Illinois EPA, Compliance Section and Regional Field Office, within 5 days of the occurrence and every 14 days thereafter, until compliance is achieved. These interim reports shall provide a brief explanation of the nature of the malfunction or breakdown, corrective actions accomplished to date, actions anticipated to occur with schedule, and the expected date on which repairs will be complete or the affected SRU will be taken out of service.
- f. i. The Permittee shall comply with the notification reporting requirements of the NSPS, 40 CFR 60.7 and 60.107.
- ii. The Permittee shall comply with the notification and reporting requirements of the NESHAP, 40 CFR 63 Subpart UUU, 63.1574 and 63.1575. Some of the notifications may have to be done prior to the actual compliance date for the emission and operating standards, April 11, 2005.

7.8.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to an affected sulfur recovery unit without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

None

7.8.12 Compliance Procedures

- a. Compliance with the NSPS SO₂ and reduced sulfur requirements in Condition 7.8.3(d) is demonstrated by the testing requirements in Condition 7.8.7(b) and the monitoring requirements in Condition 7.8.8(a).
- b. Compliance with the SO₂ requirement in Condition 7.8.3(e) is assured as long as the affected sulfur recovery units meet NSPS H₂S requirements in Condition 7.8.3(d).
- c. Compliance with the NESHAP, which becomes effective April 11, 2005 is assured by complying with the NSPS SO₂ requirement above.

7.9 Unit: Loading Operations
Control: Flare

7.9.1 Description

A majority of the refinery products are shipped out by pipeline or from the Marathon Ashland Petroleum LLC Robinson Terminal, which has a separate ID Number 033808AAL, and has been issued its own CAAPP permit (No. 95060014, issued August 15, 2003). However, there is one operation, propylene loading into rail cars, that is done as part of refinery operations. Propylene is a vapor at room temperature but stored and shipped as a liquid under pressure. Although storage is listed here as it is an integral part of this operation, the storage is actually an insignificant activity and included in Section 3.1.4.

7.9.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Permittee Emission Unit Number	Description	Emission Control Equipment
90	21	Propylene Drying, Storage and Loadout	Flare

7.9.3 Applicability Provisions and Applicable Regulations

- a. The "affected propylene loadout operation" for the purpose of these unit-specific conditions, is a process for drying, storage and loadout of propylene into rail cars and listed in Condition 7.9.2.
- b. The affected propylene loadout operation is subject to the emission limits identified in Condition 5.2.2.
- c. The affected propylene operation is subject to the NSPS for Equipment Leaks of VOC in Petroleum Refineries, 40 CFR 60 Subpart GGG. See Section 7.10 which has all LDAR requirements.

7.9.4 Non-Applicability of Regulations of Concern

- a. This permit is issued based on the affected propylene loading operation not being subject to 35 IAC 215.122(a), because the affected propylene loading operation is a pressurized system and submerged loading pipe is not an effective device for reducing VOM emissions in such a system.
- b. This permit is issued based on the affected propylene operation not being subject to the New Source Performance Standards (NSPS) for VOC Emissions from Petroleum Refinery Wastewater Systems, 40 CFR Part 60, Subpart QQQ, because the affected propylene

operation does not contain a new individual drain system, oil-water separator, or aggregate facility, as defined in 40 CFR 60.691.

- c. This permit is issued based on the affected propylene loading operation not being subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected propylene loading operation is not subject to an emission limitation or standard for the applicable regulated air pollutant.

7.9.5 Control Requirements

The loadout rack shall depressurize to an existing flare at the refinery unless the vessel being depressurized has been pressurized with nitrogen. Nitrogen-pressurized vessels are allowed to be vented to the atmosphere.

7.9.6 Emission Limitations

In addition to Condition 5.2.2 and the source wide emission limitations in Condition 5.5, the affected propylene loadout operation is subject to the following:

VOM emissions from the propylene unit shall not exceed 0.5 tons/year. These emissions actually occur at the flare that this unit depressurizes to [T1].

The above limitations were established in Permit 01030009, pursuant to 35 IAC Part 203. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically 35 IAC Part 203 [T1].

7.9.7 Testing Requirements

None

7.9.8 Monitoring Requirements

The flare is required to be monitored. See Section 7.7.

7.9.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected propylene loading operation to demonstrate compliance with Condition 5.5.1, pursuant to Section 39.5(7)(b) of the Act:

No specific recordkeeping is required for this unit as the emissions vented to the flare are accounted for in Section 7.7 of this permit, and the emissions from component leaks are accounted for in Section 7.10 of this permit.

7.9.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of the affected propylene loading operation with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

Depressurization of a non-nitrogen pressurized vessel occurs without being vented to a flare.

7.9.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.9.12 Compliance Procedures

Compliance is assured by meeting the control requirements of Condition 7.9.5.

7.10 Unit: Fugitive Emissions
Control: LDAR Program

7.10.1 Description

The Permittee operates petroleum refining process units that include components that are considered equipment in organic HAP service. LDAR is short for leak detection and repair.

7.10.2 List of Emission Units and Pollution Control Equipment

The Permittee has prepared two tables listing the equipment in organic HAP service by unit and by component type.

These two tables are in Attachment 2. Table 1 is a list of the Permittee's emission unit numbers with columns indicating applicability of the various rules listed in Condition 7.10.3(a) through (c). Table 2 lists the leak standard for various pieces of equipment (pumps, valves, compressors, etc.) and frequency of monitoring, with a final column listing the most stringent standard.

7.10.3 Applicability Provisions and Applicable Regulations

- a. An "affected petroleum refining process unit," for the purposes of these unit specific conditions is a petroleum refining process unit as identified in 40 CFR 63.640(a) located at a source that has the potential to emit 10 tons/year or more of any HAP or 25 tons/year or more of any combination of HAPs. Except as provided in the Refinery NESHAP, each unit in organic HAP service is subject to the equipment leak requirements of 40 CFR 63 Subpart CC. The specific requirement with this subpart (Section 63.648(a)) references the provisions of 40 CFR 60 Subpart VV).
- b. Each affected petroleum refining process unit is also subject to 35 IAC 215.445-452 (Subpart R), except as noted in Table 1 of Attachment 2.

7.10.4 Non-Applicability of Regulations of Concern

- a. Pursuant to 40 CFR 63.640(p), equipment leaks that are also subject to the provisions of 40 CFR Parts 60 and 61 are required only to comply with the provisions of 40 CFR 63 Subpart CC.
- b. None of the processes at the refinery are subject to the HON (Hazardous Organic NESHAP), 40 CFR Subparts F, G or H) because the refinery does not produce any of the chemicals listed in Table 1 of Subpart F.

7.10.5 Control Requirements

a. Compressors

- i. Each compressor, except compressors meeting the criteria specified in 40 CFR 60.482-3(h) or (i) and except as provided in 40 CFR 60.482-1(c), shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere [40 CFR 60.482-3(a)]. This requirement does not apply if the seals are equipped with a closed vent system which vents to a control device that meets the requirements of 40 CFR 60.482-10. [40 CFR 60.482-3(h)] These requirements also do not apply if the compressor is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background and tested annually as provided for in 40 CFR 60.482-3(i).
- ii. The seal system shall be [40 CFR 60.482-3(b)]:
 - A. Operated with barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or
 - B. Equipped with a barrier fluid system that is connected by a closed vent system to a control device that complies with 40 CFR 60.482-10 (Condition 7.10.5(c)); or
 - C. Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.
- iii. The barrier fluid system shall be [40 CFR 60.482-3(c), (d), and (e)]:
 - A. In heavy liquid service or shall not be in VOC service; and
 - B. Equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both so as to allow detection of a leak. This sensor shall be checked daily or be equipped with an audible alarm. [40 CFR 60.482-3(g)]
 - C. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after the

leak is detected, with the first attempt at repair being made no later than 5 days after detection, except as provided in Condition 7.10.8(f).

b. Sampling Connection Systems

Except for in-situ sampling systems and sampling systems without purges, each sampling connection system in greater than 5% organic HAP service shall be equipped with a closed-purge, closed-loop, or closed-vent system that meets one of the following requirements [40 CFR 60.482-5]:

- i. Returns the purged process fluid directly to the process line;
- ii. Collects and recycles the purged process fluid to the process line; or
- iii. Designed and operated to capture and transport all the purged process fluid to a control device that complies with the requirements of 40 CFR 60.482-10 (Condition 7.10.5(c)).

c. Closed Vent Systems and Control Devices

Pursuant to 40 CFR 60.482-10(d) and (m) flares used to comply with the requirements of 40 CFR 60 Subpart VV shall comply with the requirements of 40 CFR 60.18 and shall be operated at all times when emissions may be vented to it unless there is a recovery device prior to the flare.

7.10.6 Emission Limitations

Specific emission limitations for leaking components that were included in construction permits have not been included in this permit because they represent the natural potential to emit of the components and maintaining separate records for new components represents an unnecessary burden.

7.10.7 Operating Requirements

a. Pressure Relief Devices in Gas/Vapor Service

- i. Except during pressure releases, each pressure relief device in gas/vapor service, except for pressure relief devices meeting the criteria specified in 40 CFR 60.482-4(c), shall be operated with no detectable emissions, as indicated by an instrument reading of less

than 500 ppm above background. [40 CFR 60.482-4(a)]

- ii. After each pressure release, each pressure relief device subject to (i) shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as allowed by Condition 7.10.8(f). [40 CFR 60.482-4(b)]

b. Open-ended Valves or Lines

- i. Except as provided for in 40 CFR 60.482-1(c), each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve that shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line [40 CFR 60.482-6(a)];
- ii. Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed [40 CFR 60.482-6(b)]; and
- iii. When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that required venting the line between the block valves but shall comply with (i) at all other times [40 CFR 60.482-6(c)].

7.10.8 Inspection and Monitoring Requirements

a. Pumps in Light Liquid Service

- i. Except pumps meeting the criteria specified in 40 CFR 60.482-2(d), (e), or (f) and as provided for in 40 CFR 64.482-1(c), each pump in light liquid service shall be monitored monthly to detect leaks (an instrument reading of 10,000 ppm or greater) by the methods specified in 40 CFR 60.485(b), Method 21. [40 CFR 60.482-2(a)(1)]
- ii. Each pump in light liquid service shall be visually inspected each calendar week for indication of liquid dripping from the pump seal. [40 CFR 60.482-2(a)(2)]

iii. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after the leak is detected, with the first attempt at repair being made no later than 5 days after detection, except as provided in Condition 7.10.8(f). [40 CFR 60.482-2(c)]

b. Pressure Relief Devices in Gas/Vapor Service

Pressure relief devices subject to the requirements of Condition 7.10.7(a) shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in 40 CFR 60.485(c), Method 21, no later than 5 calendar days after a pressure release. [40 CFR 60.482-4(b)(2)]

c. Valves in Gas/Vapor Service and in Light Liquid Service Skip Period Leak Detection and Repair

Based on actual leak rates, the Permittee may select either of the following alternative monitoring frequencies.

i. Review of prior monitoring data for valves and pumps show the equivalent of five consecutive quarterly leak detection periods with less than 2% of the valves leaking. Therefore, the Illinois EPA has determined that the Permittee qualifies for less frequent monitoring of valves and pumps as allowed by 40 CFR 63.648(b). The Permittee shall monitor for leaks at valves as follows:

Each valve, except valves meeting the criteria specified in 40 CFR 60.482-7(f), (g), or (h) shall be monitored annually (skip three quarterly leak detection periods) to detect leaks (an instrument reading of 10,000 ppm or greater) by the methods specified in 40 CFR 60.485(b) (Method 21).

ii. In the event that the percent valves leaking during any annual leak monitoring period is greater than 2.0%, the Permittee shall fulfill the following leak monitoring and repair requirements in lieu of Condition 7.10.8(c)(i) [40 CFR 60.483-2(a)(4)]:

A. Each valve, except valves meeting the criteria specified in 40 CFR 60.482-7(f), (g), or (h) shall be monitored monthly to detect leaks (an instrument reading of

10,000 ppm or greater) by the methods specified in 40 CFR 60.485(b) (Method 21) [40 CFR 60.482-7(a)];

- B. Monitoring for any valve for which a leak is not detected for 2 successive months may be reduced to monitoring in only the first month of every quarter, beginning with the next quarter. If a leak in that valve is subsequently detected, the valve shall be monitored monthly until a leak is not detected for two consecutive months [40 CFR 60.482-7(c)];
 - C. After two consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, the Permittee may begin to skip one of the quarterly leak detection periods for valves in gas/vapor and light liquid service [40 CFR 60.483-2(a)(2)];
 - D. After five consecutive quarterly leak detection periods with the percent valves leaking equal to or less than 2.0%, the Permittee may begin to skip 3 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service (Condition 7.10.8(c)(i)) [40 CFR 60.483-2(a)(3)];
 - E. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after the leak is detected, with the first attempt at repair being made no later than 5 days after detection, except as provided in Condition 7.10.8(f).
- d. Pumps and Valves in Heavy Liquid Service, Pressure Relief Devices in Light Liquid Service or Heavy Liquid Service, and Flanges and Other Connectors
- i. Pumps and valves in heavy liquid service, pressure relief devices in light liquid service, and flanges and other connectors shall be monitored within five days by the methods specified in 40 CFR 60.485(b) (Method 21) if evidence of a potential leak (an instrument reading of 10,000 ppm or greater) is found by visual, audible, olfactory, or any other detection method [40 CFR 60.482-8(a)]; and

- ii. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after the leak is detected, with the first attempt at repair being made no later than 5 days after detection, except as provided in Condition 7.10.8(f).
- e. Closed Vent Systems and Control Devices
- i. The Permittee shall monitor the flare(s) used to comply with 40 CFR 60 Subpart VV to ensure that they are operated and maintained in conformance with their designs [40 CFR 60.482-10(e)];
 - ii. Each closed vent system, except closed vent systems meeting the criteria specified in 40 CFR 60.482-10(i), (j), or (k), that is constructed of hard-piping shall be visually inspected annually for visible, audible, or olfactory indications of leaks [40 CFR 60.482-10(f)];
 - iii. When a leak (an instrument reading greater than 500 ppm by volume above background or by visual inspection) is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after the leak is detected, with the first attempt at repair being made no later than 5 days after detection, except as provided in Condition 7.10.8(f).
- f. Delay of Repairs
- i. Delay of repair of equipment for which leaks have been detected will be allowed for the following [40 CFR 60.482-9(a) and (b)]:
 - A. If the repair is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown; or
 - B. For equipment which is isolated from the process and which does not remain in VOC service.
 - ii. Delay of repair for valves will be allowed if [40 CFR 60.482-9(c) and (e)]:
 - A. The Permittee demonstrates that emissions of purged material resulting from immediate repair are greater than the

fugitive emissions likely to result from delay of repair;

- B. When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with 40 CFR 60.482-10 (Condition 7.10.5(c));
 - C. Delay of a repair beyond a unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown. [40 CFR 60.482-9(e)]
- iii. Delay of repair for pumps will be allowed if [40 CFR 60.482-9(d)]:
- A. Repair requires the use of a dual mechanical seal system that includes a barrier fluid; and
 - B. Repair is completed as soon as practicable, but not later than 6 months after the leak is detected.

7.10.9 Recordkeeping Requirements

- a. For each leak detected from pumps, compressors, or valves, the Permittee shall [40 CFR 60.486(b)]:
 - i. Attach a weatherproof and readily visible identification to the leaking equipment, marked with an equipment identification number;
 - ii. The identification on a valve may be removed after the valve has been monitored for two successive months as specified in Condition 7.10.8(c)(ii)(B) and no leak has been detected during those two months;
 - iii. The identification on equipment other than a valve may be removed after the leak has been repaired.

- b. For each leak detected from pumps, compressors, or valves, the Permittee shall record the following information in a log that is kept in a readily accessible location [40 CFR 60.486(c)]:
 - i. The instrument and operator identification numbers and the equipment identification numbers;
 - ii. The date the leak was detected and the dates of each attempt to repair the leak;
 - iii. Repair methods applied in each attempt to repair the leak;
 - iv. "Above 10,000" if the maximum instrument reading measured by the methods specified in 40 CFR 60.485(a) (Method 21) after each repair attempt is equal to or greater than 10,000 ppm;
 - v. "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak; if only subject to 35 IAC 219.445, 22 days is allowed for repairs;
 - vi. The signature of the owner or operator (or designate) whose decision it was that repair could not be affected without a process shutdown;
 - vii. The expected date of successful repair of the leak if a leak is not repaired within 15 days;
 - viii. Dates of process unit shutdown that occur while the equipment is unrepaired; and
 - ix. The date of successful repair of the leak.
- c. For each closed vent system and control device used to comply with the requirements of 40 CFR 60 Subpart VV, the Permittee shall maintain the following information in a readily accessible location [40 CFR 60.486(d)]:
 - i. Detailed schematics, design specifications, and piping and instrumentation diagrams;
 - ii. The dates and descriptions of any changes in the design specifications;
 - iii. A description of the parameter or parameters monitored, as required by Condition

- 7.10.8(e)(i), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for monitoring;
- iv. Periods when the closed vent system and control device required to comply with 40 CFR 60 Subpart VV are not operated as designed, including periods when a flare pilot light does not have a flame; and
 - v. Dates of startups and shutdowns of closed vent systems and control devices used to comply with the requirements of 40 CFR 60 Subpart VV.
- d. The Permittee shall maintain the following information regarding all equipment subject to the requirements of 40 CFR 60 Subpart VV. This information shall be recorded in a log and kept in a readily accessible location [40 CFR 60.486(e)]:
- i. A list of identification numbers for equipment subject 40 CFR 60 Subpart VV;
 - ii. A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of 40 CFR 60.482-2(e), 482-3(i), and 482-7(f), signed by the owner or operator;
 - iii. A list of equipment identification numbers for pressure relief devices required to comply with 40 CFR 60.482-4 (Condition 7.10.7(a));
 - iv. The dates of each compliance test as required by 40 CFR 60.482-2(e), 482-3(i), 482-4, and 482-7(f), including the background level measured during each compliance test, and the maximum instrument reading measured during each compliance test; and
 - v. A list of identification numbers for equipment in vacuum service.
- e. The Permittee shall maintain a log at a readily accessible location that includes the following information pertaining to all valves subject to the requirements of 40 CFR 60.482-7(g) and (h) [40 CFR 60.486(f)]:
- i. A list of identification numbers for valves that are designated as unsafe-to-monitor, an explanation for each valve stating why the

valve is unsafe-to-monitor, and the plan for monitoring each valve; and

- ii. A list of identification numbers for valves that are designated as difficult-to-monitor, an explanation for each valve stating why the valve is difficult-to-monitor, and the plan for monitoring each valve.
- f. The Permittee shall maintain the following records if choosing to use the skip period leak detection and repair method of monitoring [40 CFR 60.486(g)]:
 - i. A schedule of monitoring; and
 - ii. The percent of valves found leaking each monitoring period.
- g. The Permittee shall maintain a log at a readily accessible location that includes the following information [40 CFR 60.486(h)]:

Design criterion for pumps and compressors that indicates failure of the seal, barrier fluid system, or both, as required pursuant to 40 CFR 60.482-2(d)(5) and 60.482-3(e)(2) and explanation of the design criterion and any changes to this criterion and the reason for the change.

- h. The Permittee shall maintain information and data used to demonstrate that a piece of equipment is not in VOC service [40 CFR 60.486(j)].
- i. i. The Permittee shall maintain the following records pursuant to 35 IAC 215 Subpart R. If identical information is contained in any of the records required by 40 CFR programs, a separate record is not required.
 - A. A monitoring program including identification of all components, a format for the monitoring log, a description of the monitoring equipment and a method to identify all leaking components. [35 IAC 215.446]
 - B. A leaking components monitoring log that contains, as a minimum, the following information:
 - 1. The name of the process unit where the component is located;

2. The type of component (e.g., valve, seal);
3. The identification number of the component;
4. The date on which a leaking component is discovered;
5. The date on which a leaking component is repaired;
6. The date and instrument reading of the recheck procedure after a leaking component is repaired;
7. A record of the calibration of the monitoring instrument;
8. The identification number of leaking components which cannot be repaired until turnaround; and
9. The total number of components inspected and the total number of components found leaking during that monitoring period. [35 IAC 215.448]

k. VOM Emissions (tons/yr).

7.10.10 Reporting Requirements

The Permittee shall submit semiannual reports to the USEPA and the Illinois EPA Compliance Section. The initial semi-annual report shall include the following information [40 CFR 60.487]:

- a. Process unit identification.
- b. Number of valves subject to the requirements of 40 CFR 60.482-7, excluding those valves designated for no detectable emissions under the provisions of 40 CFR 60.482-7(f).
- c. Number of pumps subject to the requirements of 40 CFR 60.482-2, excluding those pumps designated for no detectable emissions under the provisions of 40 CFR 60.482-2(e) and those pumps complying with 40 CFR 60.482-2(f).
- d. Number of compressors subject to the requirements of 40 CFR 60.482-3, excluding those compressors designated for no detectable emissions under the

provisions of 40 CFR 60.482-3(i) and those compressors complying with 40 CFR 60.482-3(h).

- e. All subsequent semiannual reports shall include the process unit identification and for each month during the semi-annual reporting period:
 - i. Number of valves for which leaks were detected as described in 40 CFR 60.482(7)(b) or 60.483-2;
 - ii. Number of valves for which leaks were not repaired as required in 40 CFR 60.482-7(d)(1);
 - iii. Number of pumps for which leaks were detected as described in 40 CFR 60.482-2(b) and (d)(6)(i);
 - iv. Number of pumps for which leaks were not repaired as described in 40 CFR 60.482-2(c) and (d)(6)(ii);
 - v. Number of compressors for which leaks were detected as described in 40 CFR 60.482-3(f);
 - vi. Number of compressors for which leaks were not repaired as required in 40 CFR 60.482-3(g)(1);
 - vii. The facts that explain each delay of repair, and where appropriate, why a process unit shutdown was technically infeasible; and
 - viii. Dates of process unit shutdowns which occurred within the semi-annual reporting period.
- f. The reporting requirements of Condition 7.10.10(a) through (e) are for equipment subject to 40 CFR 63 Subpart CC (60 Subpart VV).
- g. The Permittee shall submit reports to the Illinois EPA Compliance Section twice per year prior to the first day of both July and September. The reports shall include the following information required by 35 IAC 215.449:
 - i. A list of all leaking components identified pursuant to 35 IAC 215.447 but not repaired within twenty-two (22) days;
 - ii. A list of all leaking components awaiting unit turnaround;
 - iii. The total number of components inspected;

- iv. The total number of components found leaking;
and
- v. A signed statement attesting that all
monitoring and repairs were performed as
required under 35 IAC 215.445 through 215.448.

7.10.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.10.12 Compliance Procedures

Compliance with the control, operating, and inspection and monitoring requirements of Condition 7.10.5, 7.10.7, and 7.10.8 shall be demonstrated by the recordkeeping and reporting requirements of Condition 7.10.9 and 7.10.10.

When an open-ended line is identified, the Permittee has a program to notify Operations or contractor personnel to install plugs, close additional block valves, or complete other necessary actions to correct open-ended line issues. Compliance is demonstrated by maintaining a written policy to comply with these requirements. A deviation is determined if an open-ended line is found and is not corrected to meet these work practice standards as soon as practicable (due to needed maintenance, etc.).

7.11 Unit: Cooling Water Systems (CWT)
Control: None

7.11.1 Description

The Robinson refinery circulates approximately 130,000 gallons per minute of cooling water for removal of waste heat from the various heat exchangers and condensers located throughout the refinery. Approximately 174 million gallons each day is chemically treated to limit corrosion and fouling in the refinery's piping and equipment. Cooling water is re-circulated in one of four separate closed cooling water systems to conserve fresh water and reduce chemical cost. Each cooling tower system consists of a holding basin or reservoir, chemical treating facilities, pumps and piping to distribute and return the cooling water and tower or spray pond to remove waste heat from the returned water. Approximately 1500 gallons per minute of fresh water make up is added to the cooling towers due to wind loss, blowdown and evaporation. The fresh pit water supply system is the normal source of make-up for the three cooling towers while reverse osmosis reject water is used for the Spray Pond make-up. In the event of an emergency, there are four additional sources to supplement this normal source: Palestine well water, York Pond water, fire line water, and city water. Each individual cooling water system can supplement the other cooling water systems and the Fire Water System through various jumper line-ups.

The Seasonal Stripped Wastewater Cooling system is used to provide supplemental cooling to prevent a possible exceedance of the temperature limit in the Robinson refinery's NPDES permit. The stream cooled consists of water from Plants 17 and 64 that has been treated in stripping towers.

Chromium compounds are not used in any of the cooling water systems.

7.11.2 List of Emission Units and Emission Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description	Emission Control Equipment
91	#1 Cooling Tower	Non-Contact Process Water Cooling System	None
92	#2 Cooling Tower	Non-Contact Process Water Cooling Tower	None
93	#3 Cooling Tower	Non-Contact Process Water Cooling System	None
94	Spray Pond	Non-Contact Process Water Cooling System	None

Permit Emission Unit Number	Permittee Unit Number	Description	Emission Control Equipment
95	Stripped Wastewater Cooling System	Non-Contact Process Water Cooling System	None

7.11.3 Applicability Provisions and Applicable Regulations

- a. The "affected cooling water systems" for the purpose of these unit-specific conditions, are the cooling water systems described in Conditions 7.11.1 and 7.11.2.
- b. The affected cooling water systems are subject to the emission limits and requirements identified in Section 5 of this permit.
- c. Pursuant to 40 CFR 63.402, the Permittee shall not use chromium-based water treatment chemicals in any affected cooling water systems.

7.11.4 Non-Applicability of Regulations of Concern

- a. This permit is issued based on the affected cooling water systems not being subject to 40 CFR 63 Subpart Q (Industrial Process Cooling Towers) because the affected cooling water systems were not using chromium-based water treatment chemicals on or after September 8, 1994.
- b. This permit is issued based on the affected cooling water systems not being subject to 40 CFR 63.104 (heat exchanger requirements) because there are no HON emission units at this source.
- c. The fugitive emissions monitoring program (LDAR) of Section 7.10 does not apply to these cooling water systems as the towers and piping contain mostly water.
- d. This permit is issued based on the affected cooling water systems not being subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected cooling water systems are not subject to an emission limitation or standard for the applicable regulated air pollutant and do not use an add-on control device.

7.11.5 Operational and Production Limits and Work Practices

- a. Chromium compounds shall not be used in any of the cooling water systems.

- b. For the Stripped Wastewater Cooling System, the Permittee may install this type of system each summer provided it is installed by June 30 of each year. If the Permittee chooses not to install the cooling system for a particular summer, then a new construction permit will be required to install a system for a following summer. The wastewater stream that is cooled by this cooling system shall have been processed in stripping towers to remove contaminants prior to cooling unless the solids content of the wastewater would potentially foul the stripper. The circulating rate of any cooling system installed shall not exceed 1,500 gallons per minute [T1].

7.11.6 Emission Limitations

In addition to Condition 5.2.2 and the source wide emission limitations in Condition 5.5, one affected cooling water system is subject to the following:

Emissions from the affected cooling water system shall not exceed the following limits:

<u>Unit</u>	<u>Pollutant</u>	<u>Emissions</u>	
		<u>(Lb/Hour)</u>	<u>(Tons/Year)</u>
#3 Cooling Tower	VOM	7.6	33.4
Stripped Wastewater Cooling System	VOM	0.1	0.44
Stripped Wastewater Cooling System	PM	0.3	1.4

These limits are based on maximum circulation rate.

The above limitations were established in Permit 81000084 and 03050074, pursuant to 35 IAC Part 203. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically 35 IAC Part 203 [T1].

7.11.7 Testing Requirements

- a. Upon request by the Illinois EPA and/or USEPA, pursuant to Section 39.5(7)(b) of the Act, the Permittee shall conduct testing of the affected cooling water systems for purposes of demonstrating compliance to conditions of this permit according to USEPA approved methods of 40 CFR 60 Appendix A or other appropriate methods approved by the Illinois EPA or USEPA, at such reasonable times as may be

specified by the Illinois EPA and/or USEPA. This test shall meet the following requirements:

- i. The test shall be conducted by an approved independent testing service.
- ii. The test shall be conducted during conditions which are representative of maximum emissions.

7.11.8 Monitoring Requirements

- a. To qualify for the "controlled" emission factor in Table 5.1-2 of AP-42, as specified in Condition 7.11.12, the Permittee has agreed to implement the following program to minimize leaks of VOM in the cooling water.
 - i. Collect residual chlorine samples from the cooling tower every four hours.
 - ii. If a low chlorine level indicates hydrocarbons may be present, the Permittee shall use an analyzer to sniff for hydrocarbons. If those results are positive, samples shall be taken to identify the specific leaking exchanger. The leaking exchanger shall be either removed from service or repaired within 30 days unless it cannot be repaired until the next maintenance shutdown.

7.11.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected cooling water systems to demonstrate compliance with Conditions 5.5.1 and 7.11.3, pursuant to Section 39.5(7)(b) of the Act:

- a. Circulation rate (gallon/month);
- b. The types of chemicals used for treating the water; and
- c. VOM and PM Emissions (ton/yr).

7.11.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of the affected cooling water systems with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

Reporting any use of chromium compounds.

7.11.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to an affected cooling water system without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

None.

7.11.12 Compliance Procedures

- a. VOM emissions shall be calculated using the emission factor in AP-42, Table 5.1-2 (January 1995). The controlled emission factor is 0.7 lb/10⁶ gallons of cooling water. [See Condition 7.11.8]
- b. PM-10 emissions shall be calculated using the appropriate emission factor in AP-42, Table 13.4-1 (January 1995). The total liquid drift factor for the natural draft system (i.e., the Spray Pond) is 0.073 lb/10³ gallons. The total liquid drift factor for the induced draft systems is 1.7 lb/10³ gallons.

7.12 Unit: Wastewater Treatment Plant (WWTP)
 Control: Flare/External Floating Roof/Carbon Canister/None

7.12.1 Description

Oily wastewater from refinery processes is directed to the Main Lift Station. Storm water can also be directed to the Main Life Station in the event of an overflow of storm water facilities or should it need to be processed in the primary wastewater treatment facilities. From the Main Lift Station, oily wastewater/storm water is pumped to the inlet of two parallel API Separators, which are covered, nitrogen-blanketed, and vented to the 84F0-7 Flare. Oil is skimmed off the top of the API Separators and sent to a series of slop oil tanks; recovered slop oil is returned to refinery processes. Solids from the bottom of the API Separators are pumped to storage tanks.

After the API Separators, wastewater is directed to two parallel Dissolved Nitrogen Flootation (DNF) units, which are also covered, nitrogen-blanketed and vented to the 84F-7 Flare. DNF solids and DNF float are pumped to storage tanks. From the DNF units, waste water is pumped to the DNF Effluent Tank, 79D-125, and then to Tank 79D-63, which serves as a equalization tank for the secondary treatment facilities. Secondary treatment includes two activated sludge tanks for biological treatment, clarification, and filtering.

API or DNF solids can be further processed to recover oil. The solids are sent through a centrifuge, where oil is recovered, and then through a low temperature thermal desorption unit to reduce the sludge volume.

7.12.2 List of Emission Units and Air Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description	Emission Control Equipment
96	None	LNAPL System	Carbon Canister

Permit Emission Unit Number	Permittee Unit Number	Description	Emission Control Equipment
97	WWTP	Units to Flare ^a : Slop Oil Tanks 21D-14 through 18, 21D-20, 21D-21, 21D-22; MOSC Tank 21D-091; API/DNF Solids Tanks 79D-047, 79D-057, 79D-120, 79D-121; Caustic Storage Tank 79D-073; API Separators 79D-119A and B; DNF Units 79D-122A and B; DNF Float Storage Tanks 79D-124A and B; DNF Effluent Tank 79D-125; DNF Float Pump Tanks 79D-130A and B; and API Skim Oil Tanks 79D-131A and B	Flare 84F-7
98	WWTP	Equalization Tank 79D-63; Stormwater Tank 21D-809; Stormwater Tanks 79D-74A, 79D-74B and 79D-74C	External Floating Roof
99	WWTP	Main Lift Station 79D-118, Tank Water Draw Collection Sump 21D-6, Tank 21D-809 Sump, Stormwater Collection Sump 79D-73	Carbon Canister
100		DNF Sat Tanks 79C-123A and 79D-123B (Pressurized)	Pressurized Tanks
101	WWTP	Activated Sludge Tanks 79D-64A and 79D-64B/ Clarifier 79D-71/Sand Filters 79D-42, 79D-43, and 79D-44/Stormwater Tanks 21D-806, 21D-807, and 79D-75	None
102	LTTD	Low Temperature Thermal Desorption System Consisting of the Following: Mix Tank (Process Unit #1)	Carbon Canister (Control Unit [CU] #1)

Permit Emission Unit Number	Permittee Unit Number	Description	Emission Control Equipment
102 (Cont.)	LTTD	Two Phase Centrifuge (Process Unit #2)	Carbon Canister (CU #2)
		Centrifuge Cake Collection Box (Process Unit #3)	Carbon Canister (CU #3)
		Centrate Holding Tank (Process Unit #4)	Carbon Canister (CU #4)
		Separation Tank (Process Unit #5)	Carbon Canister (CU #5)
		Frac Tanks	Carbon Canister (CU #9)
		Thermal Dryer (Process Unit #6)	Scrubber (CU #6) Carbon Canister (CU #8)

^a Many units vent to the flare through a header.

^b Several other WWTP facilities are identified as Insignificant Activities in Section 3.0 or as Storage Tanks in Section 7.2.

7.12.3 Applicability Provisions and Applicable Regulations

- a. The "affected wastewater treatment plant (WWTP) facilities" for the purpose of these unit-specific conditions, includes those facilities used to treat waste water prior to discharge from the facility. The applicable facilities in the system are listed in Condition 7.12.2.
- b. The affected WWTP facilities are subject to the emission limits identified in Condition 5.2.
- c. Certain affected WWTP facilities that were constructed after May 4, 1987 are subject to NSPS, 40 CFR 60 Subparts A and QQQ for petroleum refineries wastewater systems. However, 40 CFR 63.640(o)(1) allows the Permittee to follow 40 CFR 61 Subpart FF requirements when both NSPS QQQ and NESHAP FF requirements apply. The Permittee has elected to comply with NESHAP FF requirements.
- d. Affected WWTP facilities in Emission Units 97, 98 and 99 are subject to a NESHAP, 40 CFR 61 Subpart A and FF for benzene waste operations. For Emission Unit

105, the LTTD system, the thermal dryer unit (Process Unit #6 and CU #6 and #8) and the centrifuge dewatering system (Process Units #2 and #3 and CU #2 and #3) are also subject to 40 CFR 61 Subpart A and FF.

- e. Certain storage tanks included in the affected WWTP facilities must comply with the requirements of 40 CFR 60 Subpart Kb. These tanks include the following: 79D-047, 79D-057, 79D-63, 79D-073, 79D-74A, 79D-74B, 79D-74C, 79D-120, 79D-121, 79D-124A and B, 79D-125, LTTD Frac Tanks, LTTD Mix Tank, and LTTD Separation Tank. This is due to the capacity and construction date of the tank, or a result of the tank having to comply with 40 CFR 60 Subpart QQQ or 40 CFR 61 Subpart FF which reference Subpart Kb as a compliance method. These tanks typically comply using the compliance method in 40 CFR 60.112b(a)(3), that is, a closed vent system and control device. The closed vent system must meet the leak detection requirements of 40 CFR 60, Subpart VV (See Section 7.10) and the flare meet the requirement of 40 CFR 60.18 (See Section 7.7). Use of the closed vent/control device does not preclude the use of an alternate method of § 60.112b, that is an internal or external floating roof.
- f. Any Group 1 wastewater stream pursuant to the definition in 40 CFR 63.641 (Subpart CC NESHAP for Petroleum Refineries) shall comply with 40 CFR 61 Subpart FF which has already been cited in Condition 7.12.3(d) above, and Condition 5.2.7.
- g. The leak monitoring requirements of the affected WWTP facilities pursuant to 40 CFR 60, 61 and 63 and 35 IAC Subpart R are described in Section 7.10 of this permit.

7.12.4 Non-Applicability of Regulations of Concern

- a. This permit is issued based on the affected WWTP facilities not being subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected WWTP facilities are subject to a NSPS proposed after November 15, 1990, pursuant to 40 CFR 64.2(b)(1)(i) or does not use an add-on control device to achieve compliance with an emission limitation or standard (e.g., clarifiers and aeration basins).
- b. Oily waste water sewers in the following process units are not subject to the individual drain system requirements of the Benzene NESHAP:

HF Alkylation Unit, Sulfur and Amine Treating Units, Laboratory, Steam Generation/Cooling Tower, Sulfur Recovery and Tail Gas Treatment Units, Sour Water Stripper, Distillate Hydrotreater Unit, and MTBE Unit.

7.12.5 Control or Operational Requirements

- a. Oily waste water sewers in the following process units shall be operated in accordance with the Individual Drain System requirements of the NESHAP, 40 CFR 61.346(b):

Crude Unit, Ultrafiner, Ultraformer, Unicracker, Saturate Gas Plant No. 1, Naphtha Hydrotreater/Platformer, Desalter Water Stripper, Tank Farm Water Draws, Saturate Gas Plant No. 2, Penex Feed Splitter, Penex, Waste Water Treatment Plant, FCCU, Light Ends Plant, Flares, Special Coker, Coker Naphtha Splitter, and Regular Coker.

- b. The vent control system shall meet the closed-vent systems requirements of the NESHAP, 40 CFR 61.349(a) (1) including as a minimum:
 - i. Installation of a flow indicator at the entrance to any bypass lines that could divert the stream away from the flare, pursuant to 40 CFR 61.349(a) (1) (ii).
 - ii. All gauging and sampling devices shall be gas-tight except when gauging or sampling, pursuant to 40 CFR 61.349(a) (1) (iii).
 - iii. For each closed-vent system complying with paragraph (a) of this section, one or more devices which vent directly to the atmosphere may be used on the closed-vent system provided each device remains in a closed, sealed position during normal operations except when the device needs to open to prevent physical damage or permanent deformation of the closed-vent system resulting from malfunction of the unit in accordance with good engineering and safety practices for handling flammable, explosive, or other hazardous materials [40 CFR 61.349(a) (1) (iv)].
- c. For units cited above as subject to 40 CFR 61 Subpart FF, the control devices shall comply with the requirements of 40 CFR 61.349.

- i. The flare shall comply with the requirements of 40 CFR 60.18. The details of this requirement are in Section 7.7.5 of this permit. [40 CFR 61.349(a)(2)(iii)]
- ii. The units in the LTTD process that are vented to carbon canisters shall comply with the requirements for a vapor recovery system [40 CFR 61.349(a)(2)(ii)] which require an organic material reduction of 95% or benzene reduction of 98%. During the effective period of the Consent Decree between the Permittee and USEPA (Civil Action No. 99-4023-JPG), the carbon canister systems shall consist of two carbon canisters in series.
 - A. VOM in the exhaust from each carbon canister system shall be monitored at least daily.
 - B. For dual carbon canister systems, "breakthrough" between the primary and secondary canister is defined as any reading equal to or greater than 200 ppm volatile organic compounds. Upon breakthrough, the first of the two canisters in series shall be replaced. The secondary canister shall become the primary canister, and a fresh canister will be the secondary canister. The spent canister shall be replaced within twenty-four hours.
- d. Any other applicable requirements of 40 CFR 61 Subpart FF.
- e. The maximum amount of material processed in the LTTD system shall not exceed 7,200 tons/month and 86,300 tons/year [T1].
- f. Each roll-off container shall be closed except when filling or emptying [T1].
- g. The LNAPL System is subject to the following operational requirements [T1]:
 - i. Each recovery trench shall be equipped with one or more sump pumps and each sump shall pump to a single frac tank.
 - ii. Each sump pump and recovery shall be sealed.
 - iii. The sum of the capacities for all sump pumps combined shall not exceed 100 gallons/minute.

- iv. The frac tank shall be controlled by a carbon canister system that reduces VOM in the exhaust by at least 99 percent.
- v. During the effective period of the Consent Decree (Civil Action No. 99-44023-JPG), the carbon canister systems shall be designed to comply.

7.12.6 Emission Limitations

In addition to Condition 5.2.2, unit is subject to the following:

Emissions of VOM from the affected LTTD system after control shall not exceed the following limits:

<u>Specific Unit</u>	<u>Emissions</u>	
	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>
Frac Tanks, Two Phase Centrifuge and Centrifuge Cake Collection Box (Process Unit #2 and #3) and Dryer (Process Unit #6)	0.3	3.0
Roll Off Boxes for Dryer Cake	1.4	14.0

These limits are based on the maximum rate.

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total) [T1].

The above limitations were established in Permit 03010010, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21. [T1]

7.12.7 Testing Requirements

Upon request by the Illinois EPA and pursuant to Section 39.5(7)(b) of the Act, the Permittee shall conduct testing of the affected flare. Details of testing requirements are the same as in Condition 7.7.7 of this permit.

7.12.8 Inspection and Monitoring Requirements

- a. Owners or operators using a closed-vent system that contains any bypass line that could divert a vent stream from a control device used to comply with 40 CFR 61 Subpart FF shall:
 - i. Visually inspect the bypass line valve at least once every month, checking the position of the valve and the condition of the car-seal or closure mechanism required under 40 CFR 61.349(a)(1)(ii) (Condition 7.12.5(e)(iii) [40 CFR 61.354(f)(1)]).
 - ii. Visually inspect the reading from each flow monitoring device required by 40 CFR 61.349(a)(1)(ii) (Condition 7.12.5(e)(iii) at least once each operating date to check that vapors are being routed to the control device as required [40 CFR 61.354(f)(2)].
- b. Pursuant to 40 CFR 60.355(h) the owner or operator shall test equipment for compliance with no detectable emissions as required by Condition 7.12.5(d) in accordance with the following requirements:
 - i. Monitoring shall comply with Method 21 from Appendix A of 40 CFR Part 60 [40 CFR 61.355(h)(1)].
 - ii. The detection instrument shall meet the performance criteria of Method 21 [40 CFR 61.355(h)(2)].
 - iii. The instruments shall be calibrated before use on each day of its use by the procedures specified in Method 21 [40 CFR 61.355(h)(3)].
 - iv. Calibration gases shall be:
 - A. Zero air (less than 10 ppm of hydrocarbon in air); and [40 CFR 61.355(h)(4)(i)]
 - B. A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane [40 CFR 61.355(h)(4)(ii)].
 - v. The background level shall be determined as set forth in Method 21 [40 CFR 61.355(h)(5)].
 - vi. The instrument probe shall be traversed around all potential leak interfaces as close as

possible to the interface as described in Method 21 [40 CFR 61.355(h)(6)].

- vii. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared to 500 ppm for determining compliance [40 CFR 61.355 (h)(7)].
- c. The monitoring requirements for the carbon are described in Condition 7.12.5(c)(ii).

7.12.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected WWTP facilities to demonstrate compliance with Conditions 5.5.1, 7.12.3, 7.12.5, and 7.12.6, pursuant to Section 39.5(7)(b) of the Act:

- a. Date and duration of any time when the pilot flame monitoring equipment of the affected flare was not in operation, with explanation.
- b. Any records required by a NSPS or NESHAP rule, as follows:
 - i. 40 CFR 60.115b for NSPS Subpart Kb.
 - ii. 40 CFR 61.356 for NESHAP, Subpart FF.
 - iii. 40 CFR 63.654 for NESHAP, Subpart CC
- c. The Permittee shall maintain records of the most recent tests required in Condition 7.12.7, which include the following pursuant to Section 39.5(7)(e) of the Act:
 - i. The date, place and time of sampling or measurements.
 - ii. The date(s) analyses were performed.
 - iii. The company or entity that performed the analyses.
 - iv. The analytical techniques or methods used.
 - v. The results of such analyses.
 - vi. The operating conditions as existing at the time of sampling or measurement.
- d. i. Daily monitoring data from each carbon canister system.

- ii. Dates and location of replacement of carbon canisters.
- e. Amount of material processed in the LTTD system (tons/month and tons/year).
- f. VOM emissions (ton/year).

Note that units that vent to the flare are accounted for in Section 7.7.

7.12.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of an affected WWTP with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. Any notification or reports required by a NSPS or NESHAP, as follows:
 - i. 40 CFR 60.115b for NSPS, Subpart Kb.
 - ii. 40 CFR 61.397 for NESHAP, Subpart FF and 40 CFR 63.654 for NESHAP, Subpart CC.
- b. Any exceedance of the limits in Condition 7.12.6.

7.12.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to an affected WWTP without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

None

7.12.12 Compliance Procedures

- a. Compliance with the requirements of Condition 7.12.3 is based on meeting the control requirements of Condition 7.12.5, the monitoring requirements of Condition 7.12.8, the recordkeeping requirements of Condition 7.12.9 and the reporting requirements of Condition 7.12.10.

- b. Emissions from the uncontrolled units (clarifiers, aeration basins, etc.) shall be calculated using WATER9 or equivalent.

7.13 Unit: Startup, Shutdown, and Malfunction Scenarios
Control: Flare

7.13.1 Description

This section identifies startup, shutdown, and malfunction/breakdown scenarios for certain refinery processes which may cause excess emissions. Refer to the table in Section 7.13.2 for identification of the specific process/equipment. Additional scenarios are identified in Sections 7.3, Fluid Catalytic Cracking Unit, Section 7.4 for Catalytic Reforming Units, and Section 7.8, Sulfur Recovery Units.

The two primary rules that may be violated are emissions from a flare when significant amounts of vapor that contain sulfur compounds are sent to the flare. The sulfur compounds are converted to SO₂ in the flare. The large amount of vapors can cause the flare to "smoke" for a period of time, resulting in a violation of the opacity standards.

Exceedances of 40 CFR 60.104(a)(1) do not occur from the activity listed in the description. The hours of operation of an amine scrubber or regenerator results in burning of fuel gas in the process heaters or boilers listed in Section 7.1 of this permit that do not meet the specifications for H₂S content. Thus the excess emissions may not occur in the Unit I.D. No. listed. For example the amine scrubber in the Crude Unit may scrub H₂S from fuel gas that is used in process heaters not necessarily in the Crude Unit.

7.13.2 List of Emission Units and Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description	Emission Control Equipment
58	1	Crude Unit	Refinery Flare System
60	4	Unicracker	Refinery Flare System
62	8	No.1 Sat Gas Plant	Refinery Flare System
63	9	Sulfur and Amine Treating	Refinery Flare System
66	23	No. 2 Sat Gas Plant	Refinery Flare System
68	69	Distillate Hydrotreater Unit	Refinery Flare System
70	73	Sulfur and Amine Treating	Refinery Flare System

Permit Emission Unit Number	Permittee Unit Number	Description	Emission Control Equipment
41	82	Fluid Catalytic Cracking Unit	Refinery Flare System
73	83	Light Ends Plant	Refinery Flare System
74	87	Special Coker	Refinery Flare System
75	90	Regular Coker	Refinery Flare System

The specific times and rules for the above units are listed below.

Startup/Shutdown/Malfunction Events with the Potential for Excess Emissions

Marathon Ashland Petroleum LLC Robinson Refinery

Unit ID	Startup/Malfunction	Description	Duration	Potential for Excess Emissions under the Following Rules
1	Startup	Crude Unit - Startup from Emergency Shutdown	36 hours	35 IAC 212.122 35 IAC 212.123 35 IAC 214.301 40 CFR 60.104(a) (1)
1	Malfunction	Crude Unit - Emergency Shutdown	36 hours	35 IAC 212.122 35 IAC 212.123 35 IAC 214.301 40 CFR 60.104(a) (1)
1	Malfunction	Crude Unit - Loss of 1K-1	72 hours	35 IAC 212.122 35 IAC 212.123 35 IAC 214.301 40 CFR 60.104(a) (1)
1	Malfunction	Crude Unit - Loss of Amine Scrubber	24 hours	35 IAC 212.122 35 IAC 212.123 35 IAC 214.301 40 CFR 60.104(a) (1)
4	Startup	Unicracker - Startup during pre-sulfiding of catalyst	48 hours	35 IAC 214.301 40 CFR 60.104(a) (1)
4	Malfunction	Unicracker Emergency Shutdown Resulting in Unit Depressuring	24 hours	35 IAC 212.123 35 IAC 214.301 40 CFR 60.104(a) (1)
8	Malfunction	#1 Sat Gas Plant - Emergency Shutdown	24 hours	35 IAC 212.123 35 IAC 214.301 40 CFR 60.104(a) (1)
9	Malfunction	Sulfur and Amine Treating - Loss of Amine Regenerator	8 hours	35 IAC 212.123 35 IAC 214.301 40 CFR 60.104(a) (1)

Unit ID	Startup/ Malfunction	Description	Duration	Potential for Excess Emissions under the Following Rules
23	Malfunction	#2 Sat Gas Plant - Emergency Shutdown	24 hours	35 IAC 212.123 35 IAC 214.301 40 CFR 60.104(a) (1)
69	Malfunction	Distillate Hydrotreater Unit - Loss of 69 K- 2A/2B Compressors	8 hours	35 IAC 212.123 35 IAC 214.301 40 CFR 60.104(a) (1)
69	Malfunction	Distillate Hydrotreater Unit - Loss of 69 K-1 Compressor	24 hours	35 IAC 212.123 35 IAC 214.301 40 CFR 60.104(a) (1)
73	Malfunction	Sulfur and Amine Treating - Loss of Amine Regenerator	48 hours	35 IAC 212.123 35 IAC 214.301 40 CFR 60.104(a) (1)
82	Malfunction	Fluid Catalytic Cracking Unit - Loss of Wet Gas Compressor	8 hours	35 IAC 212.123 35 IAC 214.301 40 CFR 60.102(a) 40 CFR 60.103(a) 40 CFR 60.104(a) (1) 40 CFR 60.104(b) (1) 40 CFR 60.105(e) (2)
83	Malfunction	Light Ends Plant - Emergency Shutdown	24 hours	35 IAC 212.123 35 IAC 214.301 40 CFR 60.104(a) (1)
87, 90	Malfunction	Regular and Special Cokers - Loss of 90K-101 Compressor	8 hours	35 IAC 212.123 35 IAC 214.301 40 CFR 60.104(a) (1)

7.13.3 Applicability Provisions and Applicable Regulations

- a. The "affected process" for the purpose of these unit-specific conditions, is the process described in Conditions 7.13.1 and 7.13.2.
- b. The affected process is subject to the emission limits and requirements identified in Section 5 of this permit.
- c. Components associated with the affected process are subject to the fugitive emission regulations as addressed by Section 7.10, which includes inspection, recordkeeping, reporting requirements, and compliance procedures for fugitive emissions.
- d. Malfunction and Breakdown Provisions
 - i. 35 IAC Requirements

Pursuant to 35 IAC 201.262, the Permittee is authorized to continue operation of the

affected process in excess of the applicable board emission limits identified in Section 7.13.2 as a result of a malfunction or breakdown the equipment described in Section 7.13.2 as necessary to prevent injury to persons or severe damage to equipment. This authorization is subject to the following:

- A. This authorization only extends for a certain period following the initial malfunction or breakdown event. Specific periods for each event are identified in Section 7.13.2. If continued operation to prevent injury to persons or severe damage to equipment in excess of board limits is expected to exceed this period for a specific malfunction or breakdown, the Illinois EPA's regional office shall be notified of the expected additional length of time operation will continue. The length of time may be extended if the Permittee can demonstrate that the emissions will be less during the extended period than if the unit is shutdown and restarted.
- B. The Permittee shall take the following measures to minimize emissions resulting from malfunctions or breakdowns, the frequency of malfunctions or breakdowns, and the duration of operation in excess of board limits as a result of a malfunction or breakdown:
 1. Implementation of established written malfunction or breakdown procedures, so as to minimize the duration of continued operation resulting from malfunctions or breakdowns and the emissions associated with malfunctions or breakdowns.
 2. Implementation of established maintenance practices so as to minimize the duration of continued operation resulting from malfunctions or breakdowns and the frequency of malfunctions or breakdowns. These maintenance practices shall include maintenance activities before the unit is started up, when the unit is in

operation, and when the unit is shut down.

- C. The Permittee shall fulfill the applicable recordkeeping requirements of Condition 7.13.9(b).
- D. The Permittee shall fulfill the applicable reporting requirements of Condition 7.13.10(b).
- E. Any excess emissions resulting from malfunction or breakdown which do not meet the requirements of this Condition 7.13.3(d) shall be considered an exceedance of the requirements of this permit and subject to the reporting requirements for exceedances in Condition 7.13.10.

ii. 40 CFR 60 Requirements

This permit cannot give prior approval to continue to operate during malfunction for equipment subject to 40 CFR 60, e.g. 40 CFR 60.104(a)(1) or 60.104(b)(1). IF there are excess emissions for equipment subject to those rules, the owner or operator must comply with the requirements of 40 CFR 60.7(c).

e. Startup Provisions

Pursuant to 35 IAC 201.262, the Permittee is authorized to operate the affected process in violation of the applicable board emission limits identified in Section 7.13.2 to conduct a normal startup of the affected process. The Permittee has affirmatively demonstrated that all reasonable efforts have been made to minimize startup emissions, duration of individual starts, and frequency of startups. This authorization is subject to the following:

- i. Startup shall be conducted in accordance with a startup plan or procedure that includes all reasonable measures to be taken to minimize the quantity of emissions, the length of each startup, and the number of startups.
- ii. If startup of the affected process results in operation in excess of applicable emission standards for the period identified in Section 7.13.2 or more, the Permittee shall immediately notify the Illinois EPA's regional field office

by telephone of the additional length of time required to complete the startup, if any.

- iii. The Permittee shall fulfill the applicable recordkeeping requirements of Condition 7.13.9(a).
- iv. Any startup which exceeds applicable board limits more than the extent necessary to conduct a normal startup, or any startup which does not meet the requirements of this Condition 7.13.3(e) shall be considered an exceedance of the requirements of this permit and subject to the reporting requirements for exceedances in Condition 7.13.10.

7.13.4 Non-Applicability of Regulations of Concern

None.

7.13.5 Operational and Production Limits and Work Practices

None.

7.13.6 Emission Limitations

None.

7.13.7 Testing Requirements

None.

7.13.8 Monitoring Requirements

Refer to LDAR requirements in Section 7.10.

7.13.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected process to demonstrate compliance with Condition 7.13.3 pursuant to Section 39.5(7) (b) of the Act:

- a. The Permittee shall maintain records of the following items for each Startup to demonstrate compliance with Condition 7.13.3(e) :
 - i. Date and duration of the startup, i.e., start time and time normal operation was achieved.
 - ii. Verification that the startup procedures, including a pre-check, were performed and met the requirements of Condition 7.13.3(e).

- iii. Records of maintenance activities performed.
 - iv. If normal operation was not achieved within the authorized times of Condition 7.13.3(j), an explanation of why startup could not be achieved within the authorized time with the date and time the Illinois EPA's regional office was contacted, the person spoken to, items discussed, and follow-up instructions.
- b. The Permittee shall maintain the following records for each occurrence of malfunction or breakdown that results in excess emissions and submit a summary of the information to the Illinois EPA's Compliance Section and Regional Office within 5 working days following the end of such occurrence:
- i. Date and duration of the malfunction or breakdown, i.e., start time and time normal operation was achieved or time operation was shutdown.
 - ii. A detailed description of the occurrence, including its nature, cause for significant events during the occurrence, and the date, time and means by which the occurrence was terminated including:
 - iii. The contaminants emitted and an estimate of the quantity of emissions.
 - iv. Verification that the malfunction and breakdown procedures were performed and met the requirements of Condition 7.13.3(d).
 - v. The steps taken to prevent similar malfunctions or breakdowns or reduce their frequency and severity.
 - vi. Records of maintenance activities performed.
 - vii. If normal operation or shutdown was not achieved within the authorized time of Condition 7.13.3(d), an explanation of why normal operation or shutdown could not be achieved within the authorized time with the date and time the Illinois EPA's regional office was contacted, the person spoken to, items discussed, and follow-up instructions.
- c. The Permittee shall maintain records of the following items for each exceedance of the limits in Condition 7.13.3 which shall include:

- i. Identification of the limit that may have been exceeded.
- ii. Duration of the possible exceedance.
- iii. An estimate of the amount of emissions in excess of the applicable standard.
- iv. A description of the cause of the possible exceedance.
- v. When compliance was reestablished.

7.13.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of the affected catalytic cracking operations with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. Within 30 days of exceedance of the limits in Condition 7.13.3 the notification shall include:
 - i. Identification of the limit that may have been exceeded.
 - ii. Duration of the possible exceedance.
 - iii. An estimate of the amount of emissions in excess of the applicable standard.
 - iv. A description of the cause of the possible exceedance.
 - v. When compliance was reestablished.
- b. Reporting of Malfunctions and Breakdowns
 - i. Pursuant to 35 IAC 201.263, the Permittee shall immediately report to the Illinois EPA, Compliance Section and Regional Field Office by telephone or fax concerning continued operation of an emission source during a malfunction or breakdown of the emission source or related pollution control equipment when such continued operation would cause a violation of the standards or limitations of this Permit, the Act, or regulations promulgated thereunder.

- ii. Pursuant to 35 IAC 201.302, upon achievement of compliance, the Permittee shall give a written follow-up report within five (5) business days to the Illinois EPA, Compliance Section and Regional Field Office, providing a detailed explanation of the event and explanation why continued operation of the emission source was necessary, the length of time during which operation continued under such conditions, the measures by the Permittee to minimize and correct deficiencies with chronology, and when the repairs were completed or when the emission source was taken out of service.
- c. Submit any reports required by NSPS Subparts A or J.
- i. Excess emission reports required by 40 CFR 60.7(c), as a minimum, semiannually.
 - ii. Quarterly reports required by 40 CFR 60.107(c). Note that if the semiannual report duplicates information in the quarterly report, it is not necessary to submit the same information twice.

7.13.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to an affected catalytic cracking operation without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

None.

7.13.12 Compliance Procedures

None.

8.0 GENERAL PERMIT CONDITIONS

8.1 Permit Shield

Pursuant to Section 39.5(7)(j) of the Act, the Permittee has requested and has been granted a permit shield. This permit shield provides that compliance with the conditions of this permit shall be deemed compliance with applicable requirements which were applicable as of the date the proposed permit for this source was issued, provided that either the applicable requirements are specifically identified within this permit, or the Illinois EPA, in acting on this permit application, has determined that other requirements specifically identified are not applicable to this source and this determination (or a concise summary thereof) is included in this permit.

This permit shield does not extend to applicable requirements which are promulgated after October 8, 2003 (the date of issuance of the draft permit) unless this permit has been modified to reflect such new requirements.

8.2 Applicability of Title IV Requirements (Acid Deposition Control)

This source is not an affected source under Title IV of the CAA and is not subject to requirements pursuant to Title IV of the CAA.

8.3 Emissions Trading Programs

No permit revision shall be required for increases in emissions allowed under any USEPA approved economic incentives, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for elsewhere in this permit and that are authorized by the applicable requirement [Section 39.5(7)(o)(vii) of the Act].

8.4 Operational Flexibility/Anticipated Operating Scenarios

8.4.1 Changes Specifically Addressed by Permit

Physical or operational changes specifically addressed by the Conditions of this permit that have been identified as not requiring Illinois EPA notification may be implemented without prior notice to the Illinois EPA.

8.4.2 Changes Requiring Prior Notification

The Permittee is authorized to make physical or operational changes that contravene express permit terms without applying for or obtaining an amendment to this permit, provided that [Section 39.5(12)(a)(i) of the Act]:

- a. The changes do not violate applicable requirements;

- b. The changes do not contravene federally enforceable permit terms or conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements;
- c. The changes do not constitute a modification under Title I of the CAA;
- d. Emissions will not exceed the emissions allowed under this permit following implementation of the physical or operational change; and
- e. The Permittee provides written notice to the Illinois EPA, Division of Air Pollution Control, Permit Section, at least 7 days before commencement of the change. This notice shall:
 - i. Describe the physical or operational change;
 - ii. Identify the schedule for implementing the physical or operational change;
 - iii. Provide a statement of whether or not any New Source Performance Standard (NSPS) is applicable to the physical or operational change and the reason why the NSPS does or does not apply;
 - iv. Provide emission calculations which demonstrate that the physical or operational change will not result in a modification; and
 - v. Provide a certification that the physical or operational change will not result in emissions greater than authorized under the Conditions of this permit.

8.5 Testing Procedures

Tests conducted to measure composition of materials, efficiency of pollution control devices, emissions from process or control equipment, or other parameters shall be conducted using standard test methods. Documentation of the test date, conditions, methodologies, calculations, and test results shall be retained pursuant to the recordkeeping procedures of this permit. Reports of any tests conducted as required by this permit or as the result of a request by the Illinois EPA shall be submitted as specified in Condition 8.6.

8.6 Reporting Requirements

8.6.1 Monitoring Reports

Unless otherwise specified elsewhere in this permit, if monitoring is required by any applicable requirements or conditions of this permit, a report summarizing the required monitoring results, as specified in the conditions of this permit, shall be submitted to the Air Compliance Section of the Illinois EPA every six months as follows [Section 39.5(7)(f) of the Act]:

<u>Monitoring Period</u>	<u>Report Due Date</u>
January - June	September 1
July - December	March 1

All instances of deviations from permit requirements must be clearly identified in such reports. All such reports shall be certified in accordance with Condition 9.9.

8.6.2 Test Notifications

Unless otherwise specified elsewhere in this permit, a written test plan for any test required by this permit shall be submitted to the Illinois EPA for review at least 60 days prior to the testing pursuant to Section 39.5(7)(a) of the Act. The Illinois EPA may reduce this notification period if the request is accompanied by sufficient justification. The notification shall include at a minimum:

- a. The name and identification of the affected unit(s);
- b. The person(s) who will be performing sampling and analysis and their experience with similar tests;
- c. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for the source and any control equipment will be determined;
- d. The specific determination of emissions and operation which are intended to be made, including sampling and monitoring locations;
- e. The test method(s) which will be used, with the specific analysis method, if the method can be used with different analysis methods;

- f. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification; and
- g. Any proposed use of an alternative test method, with detailed justification.

8.6.3 Test Reports

Unless otherwise specified elsewhere in this permit, the results of any test required by this permit shall be submitted to the Illinois EPA within 60 days of completion of the testing. The test report shall include at a minimum [Section 39.5(7) (e) (i) of the Act]:

- a. The name and identification of the affected unit(s);
- b. The date and time of the sampling or measurements;
- c. The date any analyses were performed;
- d. The name of the company that performed the tests and/or analyses;
- e. The test and analytical methodologies used;
- f. The results of the tests including raw data, and/or analyses including sample calculations;
- g. The operating conditions at the time of the sampling or measurements; and
- h. The name of any relevant observers present including the testing company's representatives, any Illinois EPA or USEPA representatives, and the representatives of the source.

8.6.4 Reporting Addresses

- a. The following addresses should be utilized for the submittal of reports, notifications, and renewals:
 - i. Illinois EPA - Air Compliance Section

Illinois Environmental Protection Agency
Bureau of Air
Compliance Section (MC 40)
P.O. Box 19276
Springfield, Illinois 62794-9276

ii. Illinois EPA - Air Regional Field Office

Illinois Environmental Protection Agency
Division of Air Pollution Control
2009 Mall Street
Collinsville, Illinois 62234

iii. Illinois EPA - Air Permit Section

Illinois Environmental Protection Agency
Division of Air Pollution Control
Permit Section (MC 11)
P.O. Box 19506
Springfield, Illinois 62794-9506

iv. USEPA Region 5 - Air Branch

USEPA (AE - 17J)
Air & Radiation Division
77 West Jackson Boulevard
Chicago, Illinois 60604

- b. Unless otherwise specified in the particular provision of this permit, reports shall be sent to the Illinois EPA - Air Compliance Section with a copy sent to the Illinois EPA - Air Regional Field Office.

8.7 Obligation to Comply with Title I Requirements

Any term, condition, or requirement identified in this permit by T1, T1R, or T1N is established or revised pursuant to 35 IAC Part 203 or 40 CFR 52.21 ("Title I provisions") and incorporated into this permit pursuant to both Section 39.5 and Title I provisions. Notwithstanding the expiration date on the first page of this permit, the Title I conditions remain in effect pursuant to Title I provisions until the Illinois EPA deletes or revises them in accordance with Title I procedures.

9.0 STANDARD PERMIT CONDITIONS

9.1 Effect of Permit

9.1.1 The issuance of this permit does not release the Permittee from compliance with State and Federal regulations which are part of the Illinois State Implementation Plan, as well as with other applicable statutes and regulations of the United States or the State of Illinois or applicable ordinances, except as specifically stated in this permit and as allowed by law and rule [Section 39.5(7)(j)(iv) of the Act].

9.1.2 In particular, this permit does not alter or affect the following:

- a. The provisions of Section 303 (emergency powers) of the CAA, including USEPA's authority under that Section;
- b. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;
- c. The applicable requirements of the acid rain program consistent with Section 408(a) of the CAA; and
- d. The ability of USEPA to obtain information from a source pursuant to Section 114 (inspections, monitoring, and entry) of the CAA.

9.1.3 Notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

9.2 General Obligations of Permittee

9.2.1 Duty to Comply

The Permittee must comply with all terms and conditions of this permit. Any permit noncompliance constitutes a violation of the CAA and the Act and is grounds for any or all of the following: enforcement action, permit termination, revocation and reissuance, modification, or denial of a permit renewal application [Section 39.5(7)(o)(i) of the Act].

The Permittee shall meet applicable requirements that become effective during the permit term in a timely manner unless an alternate schedule for compliance with the applicable requirement is established.

9.2.2 Duty to Maintain Equipment

The Permittee shall maintain all equipment covered under this permit in such a manner that the performance or operation of such equipment shall not cause a violation of applicable requirements.

9.2.3 Duty to Cease Operation

No person shall cause, threaten or allow the continued operation of any emission unit during malfunction or breakdown of the emission unit or related air pollution control equipment if such operation would cause a violation of an applicable emission standard, regulatory requirement, ambient air quality standard or permit limitation unless such malfunction or breakdown is allowed by a permit condition [Section 39.5(6)(c) of the Act].

9.2.4 Disposal Operations

The source shall be operated in such a manner that the disposal of air contaminants collected by the equipment, operations, or activities shall not cause a violation of the Act or regulations promulgated thereunder.

9.2.5 Duty to Pay Fees

The Permittee must pay fees to the Illinois EPA consistent with the fee schedule approved pursuant to Section 39.5(18) of the Act, and submit any information relevant thereto [Section 39.5(7)(o)(vi) of the Act]. The check should be payable to "Treasurer, State of Illinois" and sent to: Fiscal Services Section, Illinois Environmental Protection Agency, P.O. Box 19276, Springfield, Illinois 62794-9276.

9.3 Obligation to Allow Illinois EPA Surveillance

Upon presentation of proper credentials and other documents, the Permittee shall allow the Illinois EPA, or an authorized representative to perform the following [Section 39.5(7)(a) and (p)(ii) of the Act and 415 ILCS 5/4]:

- a. Enter upon the Permittee's premises where an actual or potential emission unit is located; where any regulated equipment, operation, or activity is located or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect during hours of operation any sources, equipment (including monitoring and air pollution control

equipment), practices, or operations regulated or required under this permit;

- d. Sample or monitor any substances or parameters at any location:
 - i. At reasonable times, for the purposes of assuring permit compliance; or
 - ii. As otherwise authorized by the CAA or the Act.
- e. Obtain and remove samples of any discharge or emission of pollutants authorized by this permit; and
- f. Enter and utilize any photographic, recording, testing, monitoring, or other equipment for the purposes of preserving, testing, monitoring, or recording any activity, discharge or emission at the source authorized by this permit.

9.4 Obligation to Comply with Other Requirements

The issuance of this permit does not release the Permittee from applicable State and Federal laws and regulations and applicable local ordinances addressing subjects other than air pollution control.

9.5 Liability

9.5.1 Title

This permit shall not be considered as in any manner affecting the title of the premises upon which the permitted source is located.

9.5.2 Liability of Permittee

This permit does not release the Permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the sources.

9.5.3 Structural Stability

This permit does not take into consideration or attest to the structural stability of any unit or part of the source.

9.5.4 Illinois EPA Liability

This permit in no manner implies or suggests that the Illinois EPA (or its officers, agents or employees) assumes any liability, directly or indirectly, for any

loss due to damage, installation, maintenance, or operation of the source.

9.5.5 Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege [Section 39.5(7) (o) (iv) of the Act].

9.6 Recordkeeping

9.6.1 Control Equipment Maintenance Records

A maintenance record shall be kept on the premises for each item of air pollution control equipment. As a minimum, this record shall show the dates of performance and nature of preventative maintenance activities.

9.6.2 Records of Changes in Operation

A record shall be kept describing changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under this permit, and the emissions resulting from those changes [Section 39.5(12) (b) (iv) of the Act].

9.6.3 Retention of Records

- a. Records of all monitoring data and support information shall be retained for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records, original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit [Section 39.5(7) (e) (ii) of the Act].
- b. Other records required by this permit shall be retained for a period of at least 5 years from the date of entry unless a longer period is specified by a particular permit provision.

9.7 Annual Emissions Report

The Permittee shall submit an annual emissions report to the Illinois EPA, Compliance Section no later than May 1 of the following year, as required by 35 IAC Part 254.

9.8 Requirements for Compliance Certification

Pursuant to Section 39.5(7) (p) (v) of the Act, the Permittee shall submit annual compliance certifications. The compliance

certifications shall be submitted no later than May 1 or more frequently as specified in the applicable requirements or by permit condition. The compliance certifications shall be submitted to the Air Compliance Section, Air Regional Field Office, and USEPA Region 5 - Air Branch. The addresses for the submittal of the compliance certifications are provided in Condition 8.6.4 of this permit.

- a. The certification shall include the identification of each term or condition of this permit that is the basis of the certification; the compliance status; whether compliance was continuous or intermittent; the method(s) used for determining the compliance status of the source, both currently and over the reporting period consistent with the conditions of this permit.
- b. All compliance certifications shall be submitted to USEPA Region 5 in Chicago as well as to the Illinois EPA.
- c. All compliance reports required to be submitted shall include a certification in accordance with Condition 9.9.

9.9 Certification

Any document (including reports) required to be submitted by this permit shall contain a certification by a responsible official of the Permittee that meets the requirements of Section 39.5(5) of the Act [Section 39.5(7)(p)(i) of the Act]. An example Certification by a Responsible Official is included as an attachment to this permit.

9.10 Defense to Enforcement Actions

9.10.1 Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit [Section 39.5(7)(o)(ii) of the Act].

9.10.2 Emergency Provision

- a. An emergency shall be an affirmative defense to an action brought for noncompliance with the technology-based emission limitations under this permit if the following conditions are met through properly signed, contemporaneous operating logs, or other relevant evidence:
 - i. An emergency occurred as provided in Section 39.5(7)(k) of the Act and the Permittee can identify the cause(s) of the emergency.

Normally, an act of God such as lightning or flood is considered an emergency;

- ii. The permitted source was at the time being properly operated;
 - iii. The Permittee submitted notice of the emergency to the Illinois EPA within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a detailed description of the emergency, any steps taken to mitigate emissions, and corrective actions taken; and
 - iv. During the period of the emergency the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission limitations, standards, or regulations in this permit.
- b. This provision is in addition to any emergency or upset provision contained in any applicable requirement. This provision does not relieve a Permittee of any reporting obligations under existing federal or state laws or regulations.

9.11 Permanent Shutdown

This permit only covers emission units and control equipment while physically present at the indicated source location(s). Unless this permit specifically provides for equipment relocation, this permit is void for the operation or activity of any item of equipment on the date it is removed from the permitted location(s) or permanently shut down. This permit expires if all equipment is removed from the permitted location(s), notwithstanding the expiration date specified on this permit.

9.12 Reopening and Reissuing Permit for Cause

9.12.1 Permit Actions

This permit may be modified, reopened, and reissued, for cause pursuant to Section 39.5(15) of the Act. The filing of a request by the Permittee for a permit modification, revocation, and reissuance, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition [Section 39.5(7) (o) (iii) of the Act].

9.12.2 Reopening and Revision

This permit must be reopened and revised if any of the following occur [Section 39.5(15) (a) of the Act]:

- a. Additional requirements become applicable to the equipment covered by this permit and three or more years remain before expiration of this permit;
- b. Additional requirements become applicable to an affected source for acid deposition under the acid rain program;
- c. The Illinois EPA or USEPA determines that this permit contains a material mistake or inaccurate statement when establishing the emission standards or limitations or other terms or conditions of this permit; and
- d. The Illinois EPA or USEPA determines that this permit must be revised to ensure compliance with the applicable requirements of the Act.

9.12.3 Inaccurate Application

The Illinois EPA has issued this permit based upon the information submitted by the Permittee in the permit application. Any misinformation, false statement or misrepresentation in the application shall be grounds for revocation under Section 39.5(15) (b) of the Act.

9.12.4 Duty to Provide Information

The Permittee shall furnish to the Illinois EPA, within a reasonable time specified by the Illinois EPA, any information that the Illinois EPA may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to the Illinois EPA copies of records required to be kept by this permit, or for information claimed to be confidential, the Permittee may furnish such records directly to USEPA along with a claim of confidentiality [Section 39.5(7) (o) (v) of the Act].

9.13 Severability Clause

The provisions of this permit are severable, and should any one or more be determined to be illegal or unenforceable, the validity of the other provisions shall not be affected. The rights and obligations of the Permittee shall be construed and enforced as if this permit did not contain the particular provisions held to be invalid and the applicable requirements

underlying these provisions shall remain in force [Section 39.5(7) (i) of the Act].

9.14 Permit Expiration and Renewal

The right to operate terminates on the expiration date unless the Permittee has submitted a timely and complete renewal application. For a renewal to be timely it must be submitted no later than 9 and no sooner than 12 months prior to expiration. The equipment may continue to operate during the renewal period until final action is taken by the Illinois EPA, in accordance with the original permit conditions [Section 39.5(5) (1), (n), and (o) of the Act].

10.0 ATTACHMENTS

10.1 Attachment 1 - List and Details of Storage Tanks

This attachment consists of three tables of significant emission unit tanks by various types, as follows:

Table 1 Internal Floating Roof Tanks

Table 2 External Floating Roof Tanks

Table 3 Fixed Roof Tanks

Note that there are many tanks that are considered insignificant emission unit and therefore included in Section 3 of this permit.

Table 1 - Internal Floating Roof Tanks^a

Tank No.	Regulatory Applicability ^b					Capacity (Gallons)	Material Stored	Year Built ^c
21D-68	Kb			1	S	3,832,794	Sour Water with Hydrocarbon	1993
21D-792				1	S	3,236,562	Petroleum Hydrocarbons	1968
21D-1016				1	S	5,040,000	Petroleum Hydrocarbons	1966
21D-1018				1	S	4,182,570	Petroleum Hydrocarbons	1968
21D-1022				1	S	4,836,888	Petroleum Hydrocarbons	1970
21D-1023				1	S	4,762,338	Petroleum Hydrocarbons	1970
21D-1027	Kb			2	S	5,063,394	Petroleum Hydrocarbons	1992 M-2002
21D-1030	Kb			1	S	12,600,000	Petroleum Hydrocarbons	1992 M-2002

^a These tanks may store any volatile petroleum liquid or volatile organic liquid with a vapor pressure up to 12.5 psia or a Group 1 material pursuant to 40 CFR 63 Subpart CC. The primary seal on each tank is vapor-mounted. All floating roof tanks have no vapor space and meet the requirements for submerged loading.

^b Regulatory applicability codes are: "K", "Ka", "Kb", "QQQ" indicating the 40 CFR Part 60 Subpart, "FF" indicating the 40 CFR Part 61 subpart, "1", "2" indicating the 40 CFR Part 63 MACT group classification, and "S" indicating Illinois Title 35, Part 215, Subpart B.

^c M followed by a date is the date modified.

Table 2 - Internal Floating Roof Tanks^a

Tank No.	Regulatory Applicability ^b				Capacity (Gallons)	Primary Seal Type ^c	Year Constructed ^d	
21D-790			1	S	1,134,756	Mechanical Shoe	1954	
21D-791			1	S	1,134,924	Mechanical Shoe	1954	
21D-809		QQQ	FF	1	S	4,254,600	Mechanical Shoe M-1997	
21D-903			1	S	2,312,268	Mechanical Shoe	1948	
21D-904			1	S	2,312,982	Mechanical Shoe	1948	
21D-905			1	S	2,311,260	Mechanical Shoe	1948	
21D-907			1	S	2,312,856	Mechanical Shoe	1948	
21D-908			1	S	2,311,680	Mechanical Shoe	1948	
21D-909			2	S	2,314,494	Mechanical Shoe	1948	
21D-910			1	S	2,313,990	Mechanical Shoe	1947	
21D-911			1	S	2,311,974	Mechanical Shoe	1947	
21D-912			1	S	2,309,496	Mechanical Shoe	1947	
21D-913			1	S	2,313,990	Mechanical Shoe	1947	
21D-950			1	S	3,125,094	Mechanical Shoe	1947	
21D-951			2	S	3,125,598	Mechanical Shoe	1947	
21D-952			1	S	3,338,958	Mechanical Shoe	1947	
21D-954			1	S	3,313,380	Mechanical Shoe	1947	
21D-955			1	S	3,313,380	Mechanical Shoe	1947	
21D-1000			1	S	4,997,034	Mechanical Shoe	1953	
21D-1001			1	S	4,996,866	Mechanical Shoe	1953	
21D-1002			1	S	5,002,074	Mechanical Shoe	1958	
21D-1003			1	S	4,996,194	Mechanical Shoe	1958	
21D-1004			1	S	4,995,732	Mechanical Shoe	1958	
21D-1005			1	S	4,991,322	Mechanical Shoe	1961	
21D-1008			1	S	4,992,750	Mechanical Shoe	1958	
21D-1009			1	S	4,997,328	Mechanical Shoe	1953	
21D-1011			1	S	4,999,680	Mechanical Shoe	1953	
21D-1012			1	S	4,997,118	Mechanical Shoe	1953	
21D-1013			1	S	5,001,780	Mechanical Shoe	1953	
21D-1014			2	S	4,993,044	Mechanical Shoe	1960	
21D-1031	K		1	S	10,668,286	Mechanical Shoe	1974	
21D-1032	K		1	S	10,659,684	Mechanical Shoe	1975	
21D-2001			1	S	6,701,772	Mechanical Shoe	1956	
21D-2002			1	S	6,704,712	Mechanical Shoe	1956	
21D-2003			1	S	6,703,620	Mechanical Shoe	1956	
21D-2004			1	S	11,107,740	Mechanical Shoe	1968	
21D-2005	K		1	S	8,641,374	Mechanical Shoe	1975	
21D-2006	K		1	S	10,530,450	Mechanical Shoe	1977	
79D-63		QQQ	FF	1	S	4,913,370	Mechanical Shoe	1992
79D-74A		QQQ	FF	2	S	5,128,914	Mechanical Shoe	1994
79D-74B		QQQ	FF	2	S	5,128,914	Mechanical Shoe	1994
79D-74C		QQQ	FF	2	S	8,922,228	Mechanical Shoe	1996

^a These tanks may store any petroleum product with a vapor pressure up to 12.5 psia or a Group 1 material pursuant to 40 CFR 63 Subpart CC. All floating roof tanks have no vapor space and meet the requirements for submerged loading.

- b Regulatory applicability codes are: "K", "Ka", "Kb", "QQQ" indicating the 40 CFR Part 60 subpart, "FF" indicating the 40 CFR Part 61 subpart, "1", "2" indicating the 40 CFR Part 63 MACT group classification, and "S" indicating Illinois Title 35, Part 215, Subpart B.
- c All secondary seals are rim-mounted.
- d M followed by a date is the date modified.

Table 3 - Fixed Roof Tanks

Tank No.	Regulatory Applicability ^a					Capacity (Gallons)	Material Stored	Maximum Vapor Pressure ^b (psia)	Year Built
9D-1				2		25,200	Petroleum Hydrocarbons	1.5	1969
21D-1				2	S	23,814	Petroleum Hydrocarbons	1.5	1948
21D-14		QQQ	FF	2	S	21,420	Petroleum Hydrocarbons	None - CD	1952
21D-15		QQQ	FF	2	S	21,420	Petroleum Hydrocarbons	None - CD	1952
21D-16		QQQ	FF	1	S	86,268	Petroleum Hydrocarbons	None - CD	1948
21D-17		QQQ	FF	1	S	86,268	Petroleum Hydrocarbons	None - CD	1949
21D-18		QQQ	FF	1	S	285,600	Petroleum Hydrocarbons	None - CD	1980
21D-20		QQQ	FF	1	S	488,040	Petroleum Hydrocarbons	None - CD	1968
21D-21		QQQ	FF	1	S	488,040	Petroleum Hydrocarbons	None - CD	1968
21D-22		QQQ	FF	1	S	125,244	Petroleum Hydrocarbons	None - CD	1952
21D-34				2	S	10,500	Chemical Additive	1.5	1998
21D-73	Kb		FF	1	S	42,420	Chemical Additive with Hydrocarbon	None - CD	1987
21D-74				2	S	42,420	Chemical Additive	1.5	1954
21D-91		QQQ	FF	2	S	13,986	Petroleum Hydrocarbons	None - CD	1992
21D-800	Kb			2	S	1,605,492	Petroleum Hydrocarbons	1.5	1985
21D-801	Ka			2	S	1,806,000	Petroleum Hydrocarbons	1.5	1982
21D-805				2	S	1,532,118	Petroleum Hydrocarbons	1.5	1929
21D-806				2		1,574,034	Water/Wastewater		1929
21D-807				2		1,578,108	Water/Wastewater		1929
21D-808	Ka			2	S	2,268,000	Petroleum Hydrocarbons	1.5	1982
21D-810	Kb			2	S	4,406,178	Petroleum Hydrocarbons	1.5	1999
21D-814	Ka			2	S	1,575,000	Petroleum Hydrocarbons	1.5	1981
21D-815	Ka			2	S	1,688,190	Petroleum Hydrocarbons	1.5	1981
21D-817	Ka			2	S	829,500	Petroleum Hydrocarbons	1.5	1981
21D-818	Ka			2	S	4,388,580	Petroleum Hydrocarbons	1.5	1982
21D-825	K			2	S	1,764,882	Petroleum Hydrocarbons	1.5	1978
21D-1006	Kb			2	S	5,057,094	Petroleum Hydrocarbons	1.5	1950
21D-1007	Kb			2	S	5,052,768	Petroleum Hydrocarbons	1.5	1950
21D-1015				2	S	5,044,368	Petroleum Hydrocarbons	1.5	1962
21D-1017				2	S	6,304,746	Petroleum Hydrocarbons	1.5	1968
21D-1019	Ka			2	S	4,115,580	Petroleum Hydrocarbons	1.5	1982
21D-1020				2	S	6,738,312	Petroleum Hydrocarbons	1.5	1970
21D-1021				2	S	6,740,202	Petroleum Hydrocarbons	1.5	1970
21D-1025				2	S	6,652,086	Petroleum Hydrocarbons	1.5	1971
21D-1026				2	S	6,652,506	Petroleum Hydrocarbons	1.5	1971
21D-1033	Kb			2	S	7,350,000	Petroleum Hydrocarbons	1.5	1985
25D-1					S	299	Petroleum Hydrocarbons - gasoline dispensing	NA	1988
31D-2					S	966	Petroleum Hydrocarbons - gasoline dispensing	NA	1988
59D-48	Kb			2	S	42,000	Petroleum Hydrocarbons	1.5	1999
71D-2	Kb					5,880	Petroleum Hydrocarbons		1991
79D-47	Kb	QQQ	FF	1	S	88,200	Petroleum Hydrocarbons	None - CD	1989
79D-57	Kb	QQQ	FF	1	S	88,200	Petroleum Hydrocarbons	None - CD	1989

Tank No.	Regulatory Applicability ^a					Capacity (Gallons)	Material Stored	Maximum Vapor Pressure ^b (psia)	Year Built
79D-75				2	S	500,000	Water/Wastewater		1994
79D-120	Kb	QQQ	FF	1	S	60,000	WWTP Materials	None - CD	2002
79D-121	Kb	QQQ	FF	1	S	60,000	WWTP Materials	None - CD	2002
79D-124A	Kb		FF	1	S	26,648	WWTP Materials	None - CD	2002
79D-124B	Kb		FF	1	S	26,648	WWTP Materials	None - CD	2002
79D-125	Kb		FF	2	S	31,595	WWTP Materials	None - CD	2002
82D-5				2	S	23,730	Petroleum Hydrocarbons	1.5	1947
LNAPL Frac Tank	Kb		FF	1	S	21,000	Petroleum Hydrocarbons	None - CD	2003
LTTD #1	Kb		FF	2	S	16,800	Petroleum Hydrocarbons	None - CD	2002
LTTD #3			FF		S		Petroleum Hydrocarbons	None - CD	2002
LTTD #4			FF		S	1,200	Petroleum Hydrocarbons	None - CD	2002
LTTD #5	Kb		FF	1	S	21,000	Petroleum Hydrocarbons	None - CD	2002
LTTD #7			FF				Petroleum Hydrocarbons	None - CD	2003
LTTD #9	Kb		FF	1	S	21,000	Petroleum Hydrocarbons	None - CD	2003

^a Regulatory applicability codes are: "K", "Ka", "Kb", "QQQ" indicating the 40 CFR Part 60 subpart, "FF" indicating the 40 CFR Part 61 subpart, "1", "2" indicating the 40 CFR Part 63 MACT group classification, and "S" indicating Illinois Title 35, Part 215, Subpart B.

^b For the tanks indicated as "None - CD, the CD is for Consent Decree, a legal settlement that is currently being negotiated between the Illinois Attorney General, representing the Illinois EPA and Marathon Ashland Petroleum. Although annual limits for some tanks are the primary item being discussed in the settlement, these tanks are vented to control equipment that meet the requirements for 40 CFR 60 Subpart QQQ (Refinery Wastewater Systems) and 40 CFR 6i Subpart FF (Benzene Waste Operations) and thus also comply with 35 IAC 215.121 and 215.122. See also Conditions 7.12.3(c) and 7.12.5.

10.2 Attachment 2 - LDAR Program

Table 1 LDAR Regulatory Applicability By Unit				
Permit Emission Unit Number	Permittee Unit Number	35 IAC 215.447	Refinery MACT (Via 40 CFR 60, VV)	Other LDAR Rules
	01 - Crude Unit	Applicable	Applicable	None
	02 - Ultrafiner	Applicable	Applicable	None
	03 - Ultraformer	Applicable	Applicable	None
	04 - Unicracker	Applicable	Applicable	None
	07 - HF Alkylation	Applicable	Applicable	None
	08 - Saturated Gas Plant #1	Applicable	Applicable	None
	09 - #2 Amine	Applicable	Applicable	None
	11 - LPG Merox Treaters	Applicable	Applicable	None
	16 - Naphtha Hydrotreater/Platformer	Applicable	Applicable	None
	17 - Desalter Water Stripper	Applicable	Applicable	None
	21 - Tank Farm	Applicable	Applicable	None
	21A - LPG Load Rack	Applicable	Not Applicable	40 CFR 60 Subpart GGG
	23 - Saturate Gas Plant #2	Applicable	Applicable	None
	59 - Boiler House	Applicable	Applicable	None
	62 & 63 - SRU #1 and #2	Applicable	Not Applicable	40 CFR 60 Subpart GGG
	64 - Sour Water	Applicable	Applicable	None
	66 & 67 - Tail Gas Treating #1 & #2	Applicable	Not Applicable	40 CFR 60 Subpart GGG
	69 - Distillate Hydrotreater	Applicable	Not Applicable	40 CFR 60 Subpart GGG
	71 - MTBE	Applicable	Not Applicable	40 CFR 60 Subpart GGG
	73 - Amine Regeneration	Applicable	Not Applicable	40 CFR 60 Subpart GGG
	76 - Penex Feed Splitter	Applicable	Applicable	None
	77 - Penex	Applicable	Applicable	None
	79 - Wastewater	Applicable	Applicable	None
	82 - FCCU/CO Boiler	Applicable	Applicable	None
	83 - Light Ends Plants	Applicable	Applicable	None
	84 - Flares	Applicable	Not Applicable	40 CFR 60 Subpart GGG
	87 - Special Coker	Applicable	Applicable	None
	88 - Coker Naphtha Splitter	Applicable	Applicable	None
	90 - Regular Coker	Applicable	Applicable	40 CFR 60 Subpart GGG

Table 2 Summary of Applicable Standards			
Component	Rule		"Most Stringent"
	35 IAC 215.445	40 CFR 63 CC and 40 CFR 60 GGG Both Use Standard in 40 CFR 60 VV	
Pump (LL)	Annual (between March 1 and June 1). 10,000 ppmv. Weekly AVO	If > 5% HAP, Monthly 10,000 ppmv. Weekly AVO.	Weekly AVO. Monthly 10,000 ppmv if > 5% HAP.
Pump (HL)		If > 5% HAP, as needed if leaking. If evidence of leak monitor w/in 5 days. Repair at 10,000 ppmv	As needed if leaking. 10,000 ppmv.
Valve (LL)	Annual (between March 1 and June 1). 10,000 ppmv	Monitor monthly. Monitor quarterly if no leaks for 2 months. Monitor annually if <2% leak rate for 5 quarters. 10,000 ppmv. *Permittee to chose implemented frequency based on historical leak rates	Monitor monthly. Monitor quarterly if no leaks for 2 months. Monitor annually if <2% leak rate for 5 quarters. 10,000 ppmv. *Permittee to chose implemented frequency based on historical leak rates
Valve (HL)		If > 5% HAP, as needed if leaking. If evidence of leak monitor within 5 days. Repair at 10,000 ppmv.	As needed if leaking. 10,000 ppmv.
Valve (G)	Annual (between March 1 and June 1). 10,000 ppmv.	Monitor monthly. Monitor quarterly if no leaks for 2 months. Monitor annually if <2% leak rate for 5 quarters. 10,000 ppmv. *Permittee to chose implemented frequency based on historical leak rates.	Monitor monthly. Monitor quarterly if no leaks for 2 months. Monitor annually if <2% leak rate for 5 quarters 10,000 ppmv. *Permittee to chose implemented frequency based on historical leak rates.
Compressor	Monitored Twice Per Year Between March 1 - June 1 and June 1 - August 1. 10,000 ppmv.	Inspect daily unless equipped with seal sensor alarm. Initial and annual NDE Monitoring (500 ppmv).	Monitored twice per year between March 1 - June 1 and June 1 - August 1. 10,000 ppmv.

Table 2 Summary of Applicable Standards			
Component	Rule		"Most Stringent"
	35 IAC 215.445	40 CFR 63 CC and 40 CFR 60 GGG Both Use Standard in 40 CFR 60 VV	
Fitting/ Connector (LL, G, HL)	Not regulated.	If >5% HAP, as needed if leaking. Monitor within 5 days if indicators suggest a leak. 10,000 ppmv.	If >5% HAP, as needed if leaking. Monitor within 5 days if indicators suggest a leak. 10,000 ppmv.
Drains	Monitor annually between March 1 and June 1. 10,000 ppmv.		Monitor annually between March 1 and June 1. 10,000 ppmv.
Pressure Relief Valves (G)	If not connected to an operating flare header or vapor recovery system, monitor twice per year between March 1 - June 1 and June 1 - August 1. Also, any vents to atmosphere are monitored within twenty-four hours. 10,000 ppmv.	Operate with No Detectable Emissions (500 ppmv). Also monitor within five days after release to atmosphere.	Monitored Twice Per Year Between March 1 - June 1 and June 1 - August 1. All pressure valves are monitored annually. Also, any vents to atmosphere are monitored within twenty-four hours. 10,000 ppmv. If NDE, 500 ppmv.
Pressure Relief Valves (L)	Exempt from monitoring if connected to an operating flare header or recovery device.	If > 5% HAP, as needed if leaking. Monitor w/in 5 days if indicators suggest a leak. Repair at 10,000 ppmv.	If >5% HAP, as needed if leaking. Monitor within 5 days if indicators suggest a leak. Repair at 10,000 ppmv.
Difficult to Monitor valves (LUG)		Annual monitoring at 10,000 ppmv.	Annual monitoring at 10,000 ppmv.
Closed Vent Systems		Monitor initially. Visual annually. 500 ppmv.	Monitor initially. Visual annually. 500 ppmv.

10.3 Attachment 3 - Netting Analysis

3A: PSD Applicability SO₂ Netting Analysis

Contemporaneous Time Period of August 1998 Through August 2003

Table I - Emissions Increases and Decreases Associated With the Modification Allowed by Permit Number 03030085

<u>Item of Equipment</u>	<u>Past Actual (Tons/Yr)</u>	<u>Future Potential* (Tons/Yr)</u>	<u>Emissions Change (Tons/Year)</u>	<u>Permit Number</u>
74F-1 GDU Feed Heater	0.0	3.6	3.6	03030085
74F-2 GDU Reboiler	0.0	12.2	12.2	03030085
GDU Catalyst Sulfiding Vent	0.0	5.8	5.8	03030085
GDU pressure relief devices	0.0	0.2	0.2	03030085
62F-1 & 63F-1 (SRU)	46.1	74.6	28.5	03030085
Boilers 59F-3 through 59F-6	99.3	99.3	<u>0.0</u>	03030085
		Total:	50.3	

* The listed value for the Boilers 59F-3 through 59F-6 represents projected actual emissions, not potential to emit.

Table II - Source-Wide Creditable Contemporaneous Emission Increases

<u>Item of Equipment</u>	<u>Commencement of Operation Date</u>	<u>Emissions Increase (Tons/Year)</u>	<u>Permit Number</u>
Thermal Oxidizer	July 2001	0.1	01050067
Crude Asset Reliability Proj.	February 2002	77.1	01090054
Platformer	September 2002	<u>32.0</u>	02090015
	Total:	109.2	

Table III - Source-Wide Creditable Contemporaneous Emission Decreases

<u>Item of Equipment</u>	<u>Commencement of Operational Change Date</u>	<u>Emissions Decrease (Tons/Year)</u>	<u>Permit Number</u>
Robinson Optimization Project	November 2001	3,359.3	99020080

Table IV - Net Emissions Change

	<u>(Tons/Year)</u>
Increases and Decreases Associated With The Proposed Modification	50.3
Creditable Contemporaneous Emission Increases	109.2
Creditable Contemporaneous Emission Decreases	<u>-3359.3</u>
	-3199.8

3B: PSD Applicability - NO_x Netting Analysis

Contemporaneous Time Period of August 1998 Through August 2003

Table I - Emissions Increases and Decreases Associated With the Modification Allowed by Permit Number 03030085

<u>Item of Equipment</u>	<u>Past Actual (Tons/Yr)</u>	<u>Future Potential* (Tons/Yr)</u>	<u>Emissions Change (Tons/Year)</u>	<u>Permit Number</u>
74F-1 GDU Feed Heater	0.0	5.4	5.4	03030085
74F-2 GDU Reboiler	0.0	18.0	18.0	03030085
Flares (flaring of GDU emergency releases)	0.0	0.1	0.1	03030085
62F-1 & 63F-1 (SRU)	14.8	15.1	0.3	03030085
Boilers 59F-3 through 59F-6	329.0	386.7	<u>57.7</u>	03030085
		Total:	81.5	

* The listed value for the Boilers 59F-3 through 59F-6 represents projected actual emissions, not potential to emit.

Table II - Source-Wide Creditable Contemporaneous Emission Increases

<u>Item of Equipment</u>	<u>Commencement of Operation Date</u>	<u>Emissions Increase (Tons/Year)</u>	<u>Permit Number</u>
Thermal Oxidizer	July 2001	7.1	01050067
Platformer	September 2002	<u>32.0</u>	02090015
	Total:	39.1	

Table III - Source-Wide Creditable Contemporaneous Emission Decreases

<u>Item of Equipment</u>	<u>Commencement of Operational Change Date</u>	<u>Emissions Decrease (Tons/Year)</u>	<u>Permit Number</u>
Robinson Optimization Project	November 2001	51.0	99020080
Crude Asset Reliability Proj.	February 2002	<u>89.8</u>	01090064
	Total:	140.8	

Table IV - Net Emissions Change

	<u>(Tons/Year)</u>
Increases and Decreases Associated With The Proposed Modification	81.5
Creditable Contemporaneous Emission Increases	39.1
Creditable Contemporaneous Emission Decreases	<u>-140.8</u>
	-20.2

10.4 Attachment 4 - Example Certification by a Responsible Official

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____

Name: _____

Official Title: _____

Telephone No.: _____

Date Signed: _____

10.5 Attachment 5 - Guidance on Revising This Permit

The Permittee must submit an application to the Illinois EPA using the appropriate revision classification in accordance with Sections 39.5(13) and (14) of the Act and 35 IAC 270.302. Specifically, there are currently three classifications for revisions to a CAAPP permit. These are:

1. Administrative Permit Amendment;
2. Minor Permit Modification; and
3. Significant Permit Modification.

The Permittee must determine, request, and submit the necessary information to allow the Illinois EPA to use the appropriate procedure to revise the CAAPP permit. A brief explanation of each of these classifications follows.

1. Administrative Permit Amendment
 - Corrects typographical errors;
 - Identifies a change in the name, address, or phone number of any person identified in the permit, or provides a similar minor administrative change at the source;
 - Requires more frequent monitoring or reporting by the Permittee;
 - Allows for a change in ownership or operational control of the source where no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new Permittees has been submitted to the Illinois EPA. This shall be handled by completing form 272-CAAPP, REQUEST FOR OWNERSHIP CHANGE FOR CAAPP PERMIT; or
 - Incorporates into the CAAPP permit a construction permit, provided the conditions of the construction permit meet the requirements for the issuance of CAAPP permits.
2. Minor Permit Modification
 - Do not violate any applicable requirement;
 - Do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit;

- Do not require a case-by-case determination of an emission limitation or other standard, or a source-specific determination of ambient impacts, or a visibility or increment analysis;
- Do not seek to establish or change a permit term or condition for which there is no corresponding underlying requirement and which avoids an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
 - A federally enforceable emissions cap assumed to avoid classification as a modification under any provision of Title I of the CAA; and
 - An alternative emissions limit approved pursuant to regulations promulgated under Section 112(i)(5) of the CAA.
- Are not modifications under any provision of Title I of the CAA;
- Are not required to be processed as a significant permit modification; and
- Modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches.

An application for a minor permit modification shall include the following:

- A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs;
- The source's suggested draft permit/conditions;
- Certification by a responsible official that the proposed modification meets the criteria for use of minor permit modification procedures and a request that such procedures be used; and
- Information as contained on form 271-CAAPP, MINOR PERMIT MODIFICATION FOR CAAPP PERMIT for the Illinois EPA to use to notify USEPA and affected States.

3. Significant Permit Modification

- Applications that do not qualify as either minor permit modifications or as administrative permit amendments;
- Applications requesting a significant change in existing monitoring permit terms or conditions;
- Applications requesting a relaxation of reporting or recordkeeping requirements; and
- Cases in which, in the judgment of the Illinois EPA, action on an application for modification would require decisions to be made on technically complex issues.

An application for a significant permit modification shall include the following:

- A detailed description of the proposed change(s), including all physical changes to equipment, changes in the method of operation, changes in emissions of each pollutant, and any new applicable requirements which will apply as a result of the proposed change. Note that the Permittee need only submit revised forms for equipment and operations that will be modified.

The Illinois EPA requires the information on the following appropriate forms to be submitted in accordance with the proper classification:

- Form 273-CAAPP, REQUEST FOR ADMINISTRATIVE PERMIT AMENDMENT FOR CAAPP PERMIT; or
- Form 271-CAAPP, MINOR PERMIT MODIFICATION FOR CAAPP PERMIT; or
- Form 200-CAAPP, APPLICATION FOR CAAPP PERMIT (for significant modification).

Application forms can be obtained from the Illinois EPA website at <http://www.epa.state.il.us/air/forms>.

Note that the request to revise the permit must be certified for truth, accuracy, and completeness by a responsible official.

Note that failure to submit the required information may require the Illinois EPA to deny the application. The Illinois EPA reserves the right to require that additional information be submitted as needed to evaluate or take final action on applications pursuant to Section 39.5(5)(g) of the Act and 35 IAC 270.305.



Illinois Environmental Protection Agency
Division Of Air Pollution Control -- Permit Section
P.O. Box 19506
Springfield, Illinois 62794-9506

Application For Construction Permit (For CAAPP Sources Only)	For Illinois EPA use only
	I.D. number:
	Permit number:
	Date received:

This form is to be used by CAAPP sources to supply information necessary to obtain a construction permit. Please attach other necessary information and completed CAAPP forms regarding this construction/modification project.

Source Information		
1. Source name:		
2. Source street address:		
3. City:	4. Zip code:	
5. Is the source located within city limits? <input type="checkbox"/> Yes <input type="checkbox"/> No		
6. Township name:	7. County:	8. I.D. number:

Owner Information		
9. Name:		
10. Address:		
11. City:	12. State:	13. Zip code:

Operator Information (if different from owner)		
14. Name		
15. Address:		
16. City:	17. State:	18. Zip code:

Applicant Information	
19. Who is the applicant? <input type="checkbox"/> Owner <input type="checkbox"/> Operator	20. All correspondence to: (check one) <input type="checkbox"/> Owner <input type="checkbox"/> Operator <input type="checkbox"/> Source
21. Attention name and/or title for written correspondence:	
22. Technical contact person for application:	23. Contact person's telephone number:

This Agency is authorized to require and you must disclose this information under 415 ILCS 5/39. Failure to do so could result in the application being denied and penalties under 415 ILCS 5 et seq. It is not necessary to use this form in providing this information. This form has been approved by the forms management center.

Summary Of Application Contents

24.	Does the application address whether the proposed project would constitute a new major source or major modification under each of the following programs: a) Non-attainment New Source Review – 35 IAC Part 203; b) Prevention of Significant Deterioration (PSD) – 40 CFR 52.21; c) Hazardous Air Pollutants: Regulations Governing Constructed or Reconstructed Major Sources – 40 CFR Part 63?	<input type="checkbox"/> Yes <input type="checkbox"/> No
25.	Does the application identify and address all applicable emissions standards, including those found in the following: a) Board Emission Standards – 35 IAC Chapter I, Subtitle B; b) Federal New Source Performance Standards – 40 CFR Part 60; c) Federal Standards for Hazardous Air Pollutants – 40 CFR Parts 61 and 63?	<input type="checkbox"/> Yes <input type="checkbox"/> No
26.	Does the application include a process flow diagram(s) showing all emission units and control equipment, and their relationship, for which a permit is being sought?	<input type="checkbox"/> Yes <input type="checkbox"/> No
27.	Does the application include a complete process description for the emission units and control equipment for which a permit is being sought?	<input type="checkbox"/> Yes <input type="checkbox"/> No
28.	Does the application include the information as contained in completed CAAPP forms for all appropriate emission units and air pollution control equipment, listing all applicable requirements and proposed exemptions from otherwise applicable requirements, and identifying and describing any outstanding legal actions by either the USEPA or the Illinois EPA? Note: The use of "APC" application forms is not appropriate for applications for CAAPP sources. CAAPP forms should be used to supply information.	<input type="checkbox"/> Yes <input type="checkbox"/> No
29.	If the application contains TRADE SECRET information, has such information been properly marked and claimed, and have two separate copies of the application suitable for public inspection and notice been submitted, in accordance with applicable rules and regulations?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable, No TRADE SECRET information in this application

Note 1: Answering "No" to any of the above may result in the application being deemed incomplete.

Signature Block

This certification must be signed by a responsible official. Applications without a signed certification will be returned as incomplete.	
30.	I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate and complete. Authorized Signature: BY: _____ <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="text-align: center; width: 45%;"> _____ <small>AUTHORIZED SIGNATURE</small> </div> <div style="text-align: center; width: 45%;"> _____ <small>TITLE OF SIGNATORY</small> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="text-align: center; width: 45%;"> _____ <small>TYPED OR PRINTED NAME OF SIGNATORY</small> </div> <div style="text-align: center; width: 45%;"> _____ / _____ / _____ <small>DATE</small> </div> </div>

Note 2: An operating permit for the construction/modification permitted in a construction permit must be obtained by applying for the appropriate revision to the source's CAAPP permit, if necessary.

10.7 Attachment 7 - Guidance on Renewing This Permit

Timeliness - Pursuant to Section 39.5(5)(n) of the Act and 35 IAC 270.301(d), a source must submit to the Illinois EPA a complete CAAPP application for the renewal of a CAAPP permit not later than 9 months before the date of permit expiration of the existing CAAPP permit in order for the submittal to be deemed timely. Note that the Illinois EPA typically sends out renewal notices approximately 18 months prior to the expiration of the CAAPP permit.

The CAAPP application must provide all of the following information in order for the renewal CAAPP application to be deemed complete by the Illinois EPA:

1. A completed renewal application form 200-CAAPP, APPLICATION FOR CAAPP PERMIT.
2. A completed compliance plan form 293-CAAPP, COMPLIANCE PLAN/SCHEDULE OF COMPLIANCE FOR CAAPP PERMIT.
3. A completed compliance certification form 296-CAAPP, COMPLIANCE CERTIFICATION, signed by the responsible official.
4. Any applicable requirements that became effective during the term of the permit and that were not included in the permit as a reopening or permit revision.
5. If this is the first time this permit is being renewed and this source has not yet addressed CAM, the application should contain the information on form 464-CAAPP, COMPLIANCE ASSURANCE MONITORING (CAM) PLAN.
6. Information addressing any outstanding transfer agreement pursuant to the ERMS.
7. a. If operations of an emission unit or group of emission units remain unchanged and are accurately depicted in previous submittals, the application may contain a letter signed by a responsible official that requests incorporation by reference of existing information previously submitted and on file with the Illinois EPA. This letter must also include a statement that information incorporated by reference is also being certified for truth and accuracy by the responsible official's signing of the form 200-CAAPP, APPLICATION FOR CAAPP PERMIT and the form 296-CAAPP, COMPLIANCE CERTIFICATION. The boxes should be marked yes on form 200-CAAPP, APPLICATION FOR CAAPP PERMIT,

as existing information is being incorporated by reference.

- b. If portions of current operations are not as described in previous submittals, then in addition to the information above for operations that remain unchanged, the application must contain the necessary information on all changes, e.g., discussion of changes, new or revised CAAPP forms, and a revised fee form 292-CAAPP, FEE DETERMINATION FOR CAAPP PERMIT, if necessary.
8. Information about all off-permit changes that were not prohibited or addressed by the permit to occur without a permit revision and the information must be sufficient to identify all applicable requirements, including monitoring, recordkeeping, and reporting requirements, for such changes.
9. Information about all changes made under 40 CFR 70.4(b)(12)(i) and (ii) that require a 7-day notification prior to the change without requiring a permit revision.

The Illinois EPA will review all applications for completeness and timeliness. If the renewal application is deemed both timely and complete, the source shall continue to operate in accordance with the terms and conditions of its CAAPP permit until final action is taken on the renewal application.

Notwithstanding the completeness determination, the Illinois EPA may request additional information necessary to evaluate or take final action on the CAAPP renewal application. If such additional information affects your allowable emission limits, a revised form 292-CAAPP, FEE DETERMINATION FOR CAAPP PERMIT must be submitted with the requested information. The failure to submit to the Illinois EPA the requested information within the time frame specified by the Illinois EPA, may force the Illinois EPA to deny your CAAPP renewal application pursuant to Section 39.5 of the Act.

Application forms may be obtained from the Illinois EPA website at <http://www.epa.state.il.us/air/forms.html>.

If you have any questions regarding this matter, please contact a permit analyst at 217/782-2113.

Mail renewal applications to:

Illinois Environmental Protection Agency
Division of Air Pollution Control

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Permit Section (MC 11)
P.O. Box 19506
Springfield, Illinois 62794-9506

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