217/782-2113

"REVISED"

TITLE V - CLEAN AIR ACT PERMIT PROGRAM (CAAPP) PERMIT
and
TITLE I PERMIT[1]

PERMITTEE

Citgo Petroleum Corporation
Attn: C. W. Harmon
135th Street and New Avenue
Lemont, Illinois 60439-3659

Application No.: 96030079 I.D. No.: 197090AAI
Source Location: 135th Street and New Avenue, Lemont
Operation of: Petroleum Refinery
Date Received: March 7, 1996
Date Issued: August 10, 2000 Expiration Date[2]: August 10, 2005
Responsible Official: Mark J. Smith, V.P. and General 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.

Revision Date Received: November 27, 2000
Revision Date Issued: July 17, 2001
Purpose of Revision: Minor Modification

This minor modification includes a number of small wording changes that would be classified as administrative amendments. The two changes that would be classified as minor modifications are no longer using the south plant separator as an oil water separator but instead is using two process water tanks as a separator and the conversion of contingent allotments into actual ATUs.

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:jar

cc: Illinois EPA, FOS, Region 1

[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

The Lemont Refinery
135th Street and New Avenue
Lemont, Illinois 60439-3659
630/257-4450

I.D. No.: 197090AAI
Standard Industrial Classification: 2911

1.2 Owner/Parent Company

PDV Midwest Refining, L.L.C.
750 Lexington Avenue, 10th Floor
New York, New York 10022

1.3 Operator

Citgo Petroleum Corporation
135th Street and New Avenue
Lemont, Illinois 60439-3659

Claude Harmon
630/257-4450

1.4 General Source Description

The Lemont Refinery is located at 135th Street and New Avenue in Lemont, Will County. The source produces petroleum distillates, petroleum coke and petrochemicals. In addition, petroleum refining requires a large amount of heat which Citgo generates with numerous process heaters and three boilers. This general source description, a program description in Section 6 and process description in Section 7 are included for informational purposes only and do not include, contain, or create any independent limits, conditions, or provisions applicable to the facility or its operations.

2.0 LIST OF ABBREVIATIONS/ACRONYMS AND CHEMICAL FORMULAS USED IN THIS PERMIT

ACMA	Alternative Compliance Market Account
Act	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
ATUs	Allotment Trading Units
BACT	Best Available Control Technology
BAT	Best Available Technology
bbl	Barrels
BSRP	Beavon Sulfur Recovery Plant
Btu	British thermal unit
°C	Degrees Celsius
CAA	Clean Air Act [42 U.S.C. Section 7401 et seq.]
CAAPP	Clean Air Act Permit Program
CFR	Code of Federal Regulations
cm	Centimeter
cm^2	square centimeter
CO	Carbon Monoxide
CO_2	Carbon Dioxide
COM	Continuous Opacity Monitor
CSRP	Claus Sulfur Recovery Plant
dscf	dry standard cubic foot
ERMS	Emission Reduction Market System
ESP	Electrostatic Precipitator
°F	degrees Fahrenheit
FCC(U)	Fluid Catalytic Cracking (Unit)
ft	feet
gal	gallon
gr	grains
HAP	Hazardous Air Pollutant
HF	Hydrofluoric Acid
HON	Hazardous Organic NESHAP
hr	hour
H_2S	Hydrogen Sulfide
IAC	Illinois Administrative Code
I.D. No.	Identification Number of Source, assigned by Illinois EPA
Illinois EPA	Illinois Environmental Protection Agency
EK	degrees Kelvin
kg	kilogram
KOH	Potassium Hydroxide
kPa	Kilopascals
kW	kilowatts
LAER	Lowest Achievable Emission Rate
lb	pound
LEL	Lower Explosive Limit
LDAR	Leak Detection and Repair
LPG	Liquefied propane gas

m	meter
MACT	Maximum Available Control Technology
mg	milligram
mmBtu	Million British thermal units
mmscf	million standard cubic feet
mo	month
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_x	Nitrogen Oxides
NSPS	New Source Performance Standards
OM	Organic Material
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
PSD	Prevention of Significant Deterioration
psi	pounds per square inch
psia	pounds per square inch absolute
RADI	Rapid Acid Deinventory (system)
RMP	Risk Management Plan
RVP	Reid Vapor Pressure
scf	standard cubic feet
sec	second
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SRU	Sulfur Recovery Unit
T	Ton
T1	Title I **B** identifies Title I conditions that have been carried over from an existing construction permit
T1N	Title I New **B** identifies Title I conditions that are being established in this permit
T1R	Title I Revised **B** identifies Title I conditions that have been carried over from an existing construction permit and subsequently revised in this permit
USEPA	United States Environmental Protection Agency
VOL	Volatile Organic Liquid
VOM	Volatile Organic Material
VPL	Volatile Petroleum Liquid
wt. %	weight percent
WWTP	Wastewater Treatment Plant
yr	year

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:

108	D-45A	Coke Drum
108	D-45B	Coke Drum
112	F-18	Corrosion Inhibitor Mix Drum
113	D-1	Coke Drum, Third from the West
113	D-10	Coke Drum, West Drum
113	D-11	Coke Drum, Second from West Drum
113	D-2	Coke Drum, Third from the East
113	D-3	Coke Drum, Second from the East
113	D-4	Coke Drum, East Drum
116	F-401	Chemical Injection Tank
116	F-403	Methanol Gauge Tank
120	F-541	Neutralization Sump
120	F-542	Acid Drain Neutralization Pit
120	F-543	Settling Vat
120	TK-514	Calcium Chloride Tank
120	TK-545	Caustic Storage
122	TKA-1	UDEX Charge Tank
122	TKA-2	Clay Tower Charge Tank
123	TK-401	Methanol Tank
123	TK-487	Antifoulant to Desulf Feed
123	TK-488	Corrosion Inhibitor
212	F-419	Glycol Storage
228	TK-1	Red Dye Storage for High Sulfur Diesel
228	TK-2	Diesel Stabilizer
228	TK-3	Anti-Oxidant, Gasoline
228	TK-4	Concentrated Corrosion Inhibitor
228	TK-5	Gasoline Sample Sump
228	TK-10	Proto Fuel Tank
228	TK-11	Proto Fuel Tank
228	TK-400	Diluted Corrosion Inhibitor
331	TK-720	Methanol Storage Tank
54	TK-410	In-Plant Gasoline Dispensing Tank

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:

108	TK-41	Decoking Waste Tank
113	TK-1	Decoking Water Tank
119		Molten Sulfur Truck Loading Racks
119	TK-001 & 401C	MEA Storage Tanks

119	TK-002	MEA Sump and Mix Pit
119	TK-003A & B	Two Sulfur Pits
119	TK-004 & 005	Two Sour Water Feed Tanks
121	TK-1C & D	Two Sulfur Pits
122	TKA-3 & 4	DPG & DEG Solvent Storage Tanks
122	TKA-5 & 6	Solvent Storage Tanks
339		Chemical Handling Rack (Molten Sulfur Railcar Loading)
410	TK-1	Lime Storage Bin
410	TK-11A, B & D	Lime Pit Suction Pots
410	TK-2	Coagulant Storage Bin

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:

Equipment used for filling drums, pails, or other packaging containers, excluding aerosol cans, with soaps, detergents, surfactants, lubricating oils, waxes, vegetable oils, greases, animal fats, glycerin, sweeteners, corn syrup, aqueous salt solutions, or aqueous caustic solutions [35 IAC 201.210(a)(8)].

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).

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, 218.182, or 219.182.

3.2.2 For each particulate matter process emission unit, the Permittee shall comply with the particulate matter emission limit of 35 IAC 212.321 or 212.322 as applicable. 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 VOM emission limit of 35 IAC 215.301, 218.301, or 219.301 as applicable, 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 the gasoline dispensing tank (54 TK-410), the Permittee shall comply with the applicable requirements of 35 IAC 218.583 and 218.586. These requirements shall include but are not limited to a submerged loading pipe, a vapor recovery system for filling of the tank and a vapor collection and control system for dispensing fuel into the vehicles.

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[a]	Description and Permittee Equipment Number	Date Constructed	Emission Control Equipment
01	103	Hydrotreater Feed Heater 103B-1	1988	None
02	104	Absorber Feed Heater 104B-20	1988	None
03	104	Hydrogen Recycle Heater 104B-21	1988	None
04	106	Vacuum Heater 106B-1	1985	Low NO_x Burners
05	107	Recycle Gas Heater 107B-21	1985	Low NO_x Burners
06	108	Process Heater 108B-41	1985	Low NO_x Burners
07	108	Steam Superheater 108B-42	1985	Low NO_x Burners
08	109	Steam HC Reformer Heater 109B-62	1985	Low NO_x Burners
09	113	Coker Charge Heater 113B-3	1985	Low NO_x Burners
10	111	Atmospheric Heater 111B-1A	Pre-1973	None
11	111	Atmospheric Heater 111B-1B	Pre-1973	None
12	111	Vacuum Heater 111B-2	Pre-1973	Ultra Low NO_x Burners
13	112	FCC Air Heater 112B-1	Pre-1973	None
14	112	CO Boiler 112B-2	Pre-1973	None
15	113	Coker Charge Heater 113B-1	Pre-1973	Ultra Low NO_x Burners
16	113	Coker Charge Heater 113B-2	Pre-1973	None
17	114	Feed Preheater 114B-1	Pre-1973	None
18	114	Stripper Trim Reboiler 114B-2	Pre-1973	None
19	114	Stripper Reboiler 114B-3	Pre-1973	None
20	115	Feed Heater 115B-1	Pre-1973	None
21	115	Stripper Reboiler 115B-2	Pre-1973	None
22	116	Charge Heater and Stabilizer Reboiler 116B-1	Pre-1973	None
23	116	Interheater and Naphtha Stripper Reboiler 116B-2	Pre-1973	None
24	116	#2 Interheater 116B-3	Pre-1973	None
25	116	Stabilizer Trim Reboiler 116B-4	Pre-1973	None

[a] These are not unique equipment numbers but numbers for a related process. For instance, all equipment in the fluid catalytic cracking process begin with the number 112.

Permit Emission Unit Number	Permittee Unit Number[a]	Description and Permittee Equipment Number	Date Constructed	Emission Control Equipment
26	118	Hot Oil Heater 118B-1	Pre-1973	None
27	118	Reactor Charge Heater 118B-51	Pre-1973	None
28	122	ARU (Clay) Tower Furnace 122B-1	Pre-1973	None
29	122	Reactor Charge Heater 122B-2	Pre-1973	None
30	123	Feed Preheater 123B-1	Pre-1973	None
31	123	Feed Preheater 123B-2	Pre-1973	None
32	123	Reheat Furnace 123B-3	Pre-1973	None
33	123	Reheat Furnace 123B-4	Pre-1973	None
34	123	Reheat Furnace 123B-5	Pre-1973	None
35	125	Feed Heater 125B-1	Pre-1973	None
36	125	Stripper Reboiler 125B-2	Pre-1973	None
37	430	Auxiliary Boiler 430B-1	Pre-1973	None
38	431	Boiler #19	Pre-1973	None
39	Storage Tanks - See Attachment 1			
40	112	Catalyst Regenerator 112D-1	Pre-1973	CO Boiler (112B-2) & ESPs (112P-1 & 2)
41	112	Catalyst Hoppers (112F-1 and 112F-2)	Pre-1973	Scrubber (112X-11)
42	120-1	HF Alkylation Reactor and Most Vessels are Closed Vent but Relief Valves Vent to Header and Knockout Drum	1984	Scrubber (Neutralizer) and Smokeless Flare
43	120-2	KOH Regeneration	1998	Carbon Canisters
44	120-3	Lime Storage Silo	1998	
45	120-4	RADI System	1998	
46	119	Claus Sulfur Recovery Process (119A and B)	1969	Two Oxidizers
47	121	Claus Sulfur Recovery Process (121C and D)	1974	BSRP and Combustor
48	333	Barge Loading	Pre-1973	Vapor Combustor
49	334	Santa Fe LPG and Racing Gasoline Tank Car Loading Rack	Pre-1973	Submerged Loading Pipe for Racing Gasoline
50	335	Fuels Transport Loading Rack	Pre-1973	Enclosed Flare
51	337	ICG Tank Car Loading Rack	Pre-1973	Submerged Loading Pipe
52	338	Solvent Truck Loading Rack	Pre-1973	Submerged Loading Pipe

Permit Emission Unit Number	Permittee Unit Number[a]	Description and Permittee Equipment Number	Date Constructed	Emission Control Equipment
53	335	Two Ethanol Storage Tanks (335 TK-5A/B)	1999	Submerged Loading Pipe
54	335	Gasoline Additive Storage Tank (TK-301)	1992	Submerged Loading Pipe
55	844	North Refinery Flare Gas Recovery System and Flare Stack (844C-1)	Pre-1973	None
56	844	South Refinery Flare Gas Recovery System and Flare Stack (Block 2)	Pre-1973	None
57	844	South Refinery Flare Gas Recovery System and Flare Stack (Block 3)	Pre-1973	None
58	844	Needle Coker Flare Gas Recovery System and Flare Stack	1985	None
59	844	Nos. 4 and 5 North Plant Oil-Water Separators (844-1)	1983	Covers
60	844	No. 5 South Plant Oil-Water Separators (844-2)	1989	Cover, Bladder Tank, Carbon Adsorber
61	122	UDEX Unit	Pre-1973	None - No Open Vents
62	420	South Plant Cooling Tower (420E-1)	Pre-1973	None
63	420	Alky Cooling Tower (420E-7)	1985	None
64	421	North Refinery Cooling Tower (421E-2)	Pre-1973	None
65	421	Needle Coker Cooling Tower (421E-3)	1983	None
66	844	Wastewater Treatment Plant	Pre-1973	None
67	---	Cold Cleaning Degreaser with Spray	Pre-1973	Doors and Cover
68	123	Naphtha Desulferizer/Catalytic Reformer #1	Pre-1973	None
69	116	Catalytic Reformer #2	Pre-1973	None
70	103	Gasoline Hydrotreater	1988	None
71	113	Coke Gas Compressor (113GB-1)	Pre-1973	None
72	212	Wet Gas Compressor (212GB-301)	Pre-1973	None
73	212	Two Sales Gas Compressors (212GB-401A and B)	1981	None
74	217	Two Unsaturated Gas Compressors (217GB-1A and B)	Pre-1973	None

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, SO_2, CO, PM, VOM, and HAP emissions.

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. i. Emission units identified in 35 IAC 212.304 through 212.308 shall be operated under the provisions of an operating program prepared by the Permittee and submitted to the Illinois EPA for its review. Such operating program shall be designed to significantly reduce fugitive particulate matter emissions [35 IAC 212.309(a)].

ii. The operating program shall be amended from time to time by the Permittee so that the operating program is current. Such amendments shall be consistent with the requirements set forth by this condition and shall be submitted to the Illinois EPA [35 IAC 212.312].

iii. All normal traffic pattern roads and parking facilities located at this source shall be paved or treated with water, oils, or chemical dust suppressants. All paved areas shall be cleaned on a regular basis. All areas treated with water, oils, or chemical dust suppressants shall have the treatment applied

on a regular basis, as needed, in accordance with the operating program [35 IAC 212.306].

c. 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. The Permittee does not have any units that meet this exception.

d. 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)] Unit 119, an existing sulfur recovery unit (SRU), qualifies for that exclusion.

e. Except as 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:

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

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 218.301 or 218.302; 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 218.441)

vi. Note that the coker operated by the Permittee is a delayed coker and is not a fluid coker and therefore not subject to Condition 5.2.3(a)(ii).

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 70EF 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 218.442)

c. Pursuant to 35 IAC 218.443, 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 (70EF) 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 the inherent nature of operations at this source, as demonstrated by historical operation.

d. Pursuant to 35 IAC 218.444, the Permittee shall not cause or allow a refinery process unit turnaround except in compliance with an operating procedure 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 294.3EK (70EF) 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 218.143, 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 218.108.

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 218.144, 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.

5.2.4 a. 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:

i. Miscellaneous process vents.

ii. Storage vessels.

iii. Wastewater streams and wastewater treatment operations.

iv. Equipment leaks.

v. Gasoline loading racks.

vi. Marine vessel loading operations.

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.

b. i. 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)].

ii. The owner or operator of a stationary source shall revise and update the RMP submitted, as specified in 40 CFR 68.190.

5.2.5. a. This stationary source is likely to be subject to 40 CFR Part 63 Subpart UUU, (NESHAP for Petroleum Refineries - Catalytic Cracking (Fluid and Other) Units, Catalytic Reforming Units and Sulfur Plant Units) when the rule is final and effective. If subject, the Permittee shall certify compliance with Part 63 Subpart UUU as part of the annual compliance certification as required by 40 CFR Part 70 or 71, beginning in the year that compliance is required under a final and effective rule. Units likely to be affected include fluid catalytic cracking unit, the catalytic reformer and the sulfur recovery units.

b. Should this stationary source become subject to a regulation under 40 CFR Part 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.

c. 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:

i. Illinois EPA, Compliance Section; and

ii. For sources located in Cook County and outside of the city of Chicago: Cook County Department of Environmental Control.

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 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.

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 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 218.301 (8 lb/hr rule) because they are covered by more specific regulations, 35 IAC 218.143 (vapor blowdown requirements) and 218.144 (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 $100,000.00/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 294.3EK (70EF) 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 then 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. Records for Units Exempt from Subpart TT Control Requirements

The Permittee shall maintain a list of all units that are subject to 35 IAC 218 Subpart TT which are not required to comply with the control requirements of 35 IAC 218.981(a) by meeting the exemption in 35 IAC 218.980(d), that is, individual emission units with VOM emissions of less than 2.5 tons per calendar year if the total emissions from all such units not complying with 35 IAC 218.986 do not exceed 5.0 tons per calendar year. Within 30 days of the end of each calendar year the emissions from each unit exempt from the control requirement shall be updated to include the most recent calendar year.

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.

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.

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 218.142 as Condition 7.8.5 establishes appropriate compliance procedures for this rule that do not rely on such measurements.

5.11 The Permittee has submitted its application organized by process units, i.e., cracking units, reformers, distillation, alkylation, storage tanks, etc. Process heaters may be located within any of those operations but in Section 7 of this permit these heaters have been grouped together in one section because they are subject to similar rules.

Some of the process units do not vent significant emissions to the atmosphere whether controlled or uncontrolled (except for process heaters that may be in the units) but the full units are not classified as insignificant because they are subject to leak detection and repair (LDAR) requirements and the units may have pressure relief valves that open and vent to a recovery system and/or flare system. There may also be insignificant vents within a unit. For instance, the cokers are opened for a brief period at the end of each cycle. These are listed in Section 3

of this permit. The following systems meet the criteria of no open vents:

Unit No.	Description
103	Gasoline Hydrotreater
106-108	Needle Coker Complex
111	Crude Distillation
113	Sponge Coker
114	Naphtha Hydrotreater
115	Light Distillate Hydrotreater
118	Aliphatic Solvents
122	UDEX
125	Diesel Distillate Hydrotreater
212	Unsaturated Gas Plant
217	Saturated Gas Plant

6.0 EMISSIONS REDUCTION MARKET SYSTEM (ERMS)

6.1 Description of ERMS

The ERMS is a “cap and trade” market system for major stationary sources located in the Chicago ozone nonattainment area. It is designed to reduce VOM emissions from stationary sources to contribute to reasonable further progress toward attainment, as required by Section 182(c) of the CAA.

The ERMS addresses VOM emissions during a seasonal allotment period from May 1 through September 30. Participating sources must hold “allotment trading units” (ATUs) for their actual seasonal VOM emissions. Each year participating sources are issued ATUs based on allotments set in the sources’ CAAPP permit. These allotments are established from historical VOM emissions or “baseline emissions” lowered to provide the emissions reductions from stationary sources required for reasonable further progress.

By December 31 of each year, the end of the reconciliation period following the seasonal allotment period, each source shall have sufficient ATUs in its transaction account to cover its actual VOM emissions during the preceding season. A transaction account’s balance as of December 31 will include any valid ATU transfer agreements entered into as of December 31 of the given year, provided such agreements are promptly submitted to the Illinois EPA for entry into the transaction account database. The Illinois EPA will then retire ATUs in sources’ transaction accounts in amounts equivalent to their seasonal emissions. When a source does not appear to have sufficient ATUs in its transaction account, the Illinois EPA will issue a notice to the source to begin the process for Emissions Excursion Compensation.

In addition to receiving ATUs pursuant to their allotments, participating sources may also obtain ATUs from the market, including ATUs bought from other participating sources and general participants in the ERMS that hold ATUs (35 IAC 205.630) and ATUs issued by the Illinois EPA as a consequence of VOM emissions reductions from an Emissions Reduction Generator or an Intersector Transaction (35 IAC 205.500 and 35 IAC 205.510). During the reconciliation period, sources may also buy ATUs from a secondary reserve of ATUs managed by the Illinois EPA, the “Alternative Compliance Market Account” (ACMA) (35 IAC 205.710). Sources may also transfer or sell the ATUs that they hold to other sources or participants (35 IAC 205.630).

Note: This narrative description of ERMS, as well as those in Section 7, are provided for informational purposes and are not intended to be enforceable as a practical matter. Refer to the ERMS, 35 IAC Part 205, and the provisions which follow for enforceable requirements of the ERMS.

6.2 Applicability

This source is considered a “participating source” for purposes of the ERMS program and regulations, 35 IAC Part 205.

6.3 Obligation to Hold Allotment Trading Units (ATUs)

a. Pursuant to 35 IAC 205.150(c)(1) and 35 IAC 205.720, and as further addressed by Condition 6.8, as of December 31 of each year, this source shall hold ATUs in its account in an amount not less than the ATU equivalent of its VOM emissions during the preceding seasonal allotment period (May 1 - September 30), not including VOM emissions from the following, or the source shall be subject to “emissions excursion compensation,” as described in Condition 6.5.

i. VOM emissions from insignificant emission units and activities as identified in Section 3 of this permit, in accordance with 35 IAC 205.220;

ii. Excess VOM emissions associated with startup, malfunction, or breakdown of an emission unit as authorized in Section 7.0 of this permit, in accordance with 35 IAC 205.225;

iii. Excess VOM emissions to the extent allowed by a Variance, Consent Order, or Compliance Schedule, in accordance with 35 IAC 205.320(e)(3);

iv. Excess VOM emissions that are a consequence of an emergency as approved by the Illinois EPA, pursuant to 35 IAC 205.750; and

v. VOM emissions from certain new and modified emission units as addressed by Condition 6.8(b), if applicable, in accordance with 35 IAC 205.320(f).

b. Notwithstanding the above condition, in accordance with 35 IAC 205.150(c)(2), if a source commences operation of a major modification, pursuant to 35 IAC Part 203, the source shall hold ATUs in an amount not less than 1.3 times its seasonal VOM emissions attributable to such major modification during the seasonal allotment period, determined in accordance with the construction permit for such major modification or applicable provisions in Section 7.0 of this permit.

6.4 Market Transactions

a. The source shall apply to the Illinois EPA for and obtain authorization for a Transaction Account prior to

conducting any market transactions, as specified at 35 IAC 205.610(a).

b. The Permittee shall promptly submit to the Illinois EPA any revisions to the information submitted for its Transaction Account, pursuant to 35 IAC 205.610(b).

c. The source shall have at least one account officer designated for its Transaction Account, pursuant to 35 IAC 205.620(a).

d. Any transfer of ATUs to or from the source from another source or general participant must be authorized by a qualified Account Officer designated by the source and approved by the Illinois EPA, in accordance with 35 IAC 205.620, and the transfer must be submitted to the Illinois EPA for entry into the Transaction Account database (35 IAC 205.630).

6.5 Emissions Excursion Compensation

Pursuant to 35 IAC 205.720, if the source fails to hold ATUs in accordance with Condition 6.3, it shall provide emissions excursion compensation in accordance with the following:

a. Upon receipt of an Excursion Compensation Notice issued by the Illinois EPA, the source shall purchase ATUs from the ACMA in the amount specified by the notice, as follows:

i. The purchase of ATUs shall be in an amount equivalent to 1.2 times the emissions excursion; or

ii. If the source had an emissions excursion for the seasonal allotment period immediately before the period for the present emissions excursion, the source shall purchase ATUs in an amount equivalent to 1.5 times the emissions excursion.

b. If requested in accordance with paragraph (c) below or in the event that the ACMA balance is not adequate to cover the total emissions excursion amount, the Illinois EPA will deduct ATUs equivalent to the specified amount or any remaining portion thereof from the ATUs to be issued to the source for the next seasonal allotment period.

c. Pursuant to 35 IAC 205.720(c), within 15 days after receipt of an Excursion Compensation Notice, the owner or operator may request that ATUs equivalent to the amount specified be deducted from the source's next seasonal allotment by the Illinois EPA, rather than purchased from the ACMA.

6.6 Quantification of Seasonal VOM Emissions

a. The methods and procedures specified in Sections 5 and 7 of this permit for determining VOM emissions and compliance with VOM emission limitations shall be used for determining seasonal VOM emissions for purposes of the ERMS, with the following exceptions [35 IAC 205.315(b)]:

No exceptions

b. The Permittee shall report emergency conditions at the source to the Illinois EPA, in accordance with 35 IAC 205.750, if the Permittee intends to deduct VOM emissions in excess of the technology-based emission rates normally achieved that are attributable to the emergency from the source=s seasonal VOM emissions for purposes of the ERMS. These reports shall include the information specified by 35 IAC 205.750(a), and shall be submitted in accordance with the following:

i. An initial emergency conditions report within two days after the time when such excess emissions occurred due to the emergency; and

ii. A final emergency conditions report, if needed to supplement the initial report, within 10 days after the conclusion of the emergency.

6.7 Annual Account Reporting

a. For each year in which the source is operational, the Permittee shall submit, as a component of its Annual Emissions Report, seasonal VOM emissions information to the Illinois EPA for the seasonal allotment period. Except as provided by 35 IAC 205.300(b), this report shall include the following information [35 IAC 205.300]:

i. Actual seasonal emissions of VOM from the source;

ii. A description of the methods and practices used to determine VOM emissions, as required by this permit, including any supporting documentation and calculations;

iii. A detailed description of any monitoring methods that differ from the methods specified in this permit, as provided in 35 IAC 205.337;

iv. If a source has experienced an emergency, as provided in 35 IAC 205.750, the report shall reference the associated emergency conditions report that has been approved by the Illinois EPA;

v. If a source's baseline emissions have been adjusted due to a Variance, Consent Order, or CAAPP permit Compliance Schedule, as provided for in 35 IAC 205.320(e)(3), the report shall provide documentation quantifying the adjusted VOM emissions amount; and

vi. If a source is operating a new or modified emission unit for which three years of operational data is not yet available, as specified in 35 IAC 205.320(f), the report shall specify seasonal VOM emissions attributable to the new emission unit or the modification of the emission unit.

b. This report shall be submitted by November 30 of each year, for the preceding seasonal allotment period.

6.8 Allotment of ATUs to the Source

a. i. The allotment of ATUs to this source is 2,081 ATUs per seasonal allotment period.

ii. This allotment of ATUs reflects the Illinois EPA's determination that the source's baseline emissions were 208.5 tons per season. This determination includes the use of 1995 and 1996 as baseline seasons, plus some units that were issued construction permits prior to January 1, 1998 and for which three years of emission data has now become available.

iii. The source's allotment reflects 88% of the baseline emissions (12% reduction), except for the VOM emissions from specific emission units excluded from such reduction, pursuant to 35 IAC 205.405, including units complying with MACT or using BAT, as identified in Condition 6.11 of this permit.

iv. ATUs will be issued to the source's Transaction Account by the Illinois EPA annually. These ATUs will be valid for the seasonal allotment period during issuance and, if not retired in this season, the next seasonal allotment period (35 IAC 205.400(b)).

v. Condition 6.3(a) becomes effective beginning in the seasonal allotment period during the initial issuance of ATUs by the Illinois EPA into the Transaction Account for the source.

b. Contingent Allotments for New or Modified Emission Units

N/A

c. Notwithstanding the above, part or all of the above ATUs will not be issued to the source in the following circumstances:

i. Transfer of ATUs by the source to another participant or the ACMA, in accordance with 35 IAC 205.630;

ii. Deduction of ATUs as a consequence of emissions excursion compensation, in accordance with 35 IAC 205.720; and

iii. Transfer of ATUs to the ACMA, as a consequence of shutdown of the source, in accordance with 35 IAC 205.410(a)(2).

6.9 Recordkeeping for ERMS

The Permittee shall maintain copies of the following documents as its Compliance Master File for purposes of the ERMS [35 IAC 205.700(a)]:

a. Seasonal component of the Annual Emissions Report;

b. Information on actual VOM emissions, as specified in detail in Sections 5 and 7 of this permit and Condition 6.6(a); and

c. Any transfer agreements for the purchase or sale of ATUs and other documentation associated with the transfer of ATUs.

6.10 Federal Enforceability

Section 6 will become federally enforceable upon approval of the ERMS by USEPA as part of Illinois' State Implementation Plan.

6.11 Exclusions from Further Reductions

a. VOM emissions from the following emission units shall be excluded from the VOM emissions reductions requirements specified in 35 IAC 205.400(c) and (e) as long as such emission units continue to satisfy the following [35 IAC 205.405(a)]:

i. Emission units that comply with any NESHAP or MACT standard promulgated pursuant to the CAA;

ii. Direct combustion emission units designed and used for comfort heating purposes, fuel combustion emission units, and internal combustion engines; and

iii. An emission unit for which a LAER demonstration has been approved by the Illinois EPA on or after November 15, 1990.

The source has demonstrated in its ERMS application and the Illinois EPA has determined that the following emission units qualify for exclusion from further reductions because they meet the criteria as indicated above [35 IAC 205.405(a) and (c)]:

Fuel Combustion Units:

Needle Coker Heaters, 106 B-1, 107 B-21, 108 B-41, 108 B-42, 109 B-62, 109 F-67; Crude Unit Heaters, 111 B-1A, 111 B-1B, 111 B-2; FCC Fuel Combustion, 112, FCCU Chiller Generator; Coker Heaters, 113 B-1, 113 B-2, 113 B-3; Hydrotreater Heaters, 103B-1, 114 B-1, 114 B-2, 114 B-3, 115 B-1, 115 B-2, 116 B-1, 116 B-2, 116 B-3, 116 B-4; UNISAR Heaters, 122 B-1, 122 B-2; CRU No. 1 Heaters, 123 B-1, 123 B-2, 123 B-3, 123 B-4, 123 B-5; CRU No. 2 Heaters, 125 B-1, 125 B-2; Other Boilers/Heaters, CO-Boiler, Aux. Boiler, No. 19 Boiler;

Units subject to MACT:

Barge Terminal; Fuels Loading, Solvent Truck Loading, Solvent Tankcar Loading, Unit 844 Flares C-1 through C-5; Unit 430, North Plant OWS and WWTTP; Remote Reservoir Batch Cold Solvent Cleaning; Fugitive Leaks; North Plant Cooling Tower 431E-2; Tank Nos. as follows: 331TK-004, 331TK-050, 331TK-092, 331TK-103, 331TK-106, 331TK-107, 331TK-108, 331TK-109, 331TK-110, 331TK-111, 331TK-112, 331TK-114, 331TK-200, 331TK-201, 331TK-202, 331TK-203, 331TK-204, 331TK-205, 331TK-206, 331TK-207, 331TK-208, 331TK-209, 331TK-211, 331TK-250, 331TK-251, 331TK-252, 331TK-300, 331TK-301, 331TK-302, 331TK-303, 331TK-304, 331TK-305, 331TK-306, 331TK-307, 331TK-308, 331TK-309, 331TK-310, 331TK-311, 331TK-312, 331TK-401, 331TK-402, 331TK-403, 331TK-404, 331TK-405, 331TK-406, 331TK-407, 331TK-408, 331TK-409, 331TK-410, 331TK-411, 331TK-412, 331TK-414, 331TK-416, 331TK-417, 331TK-418, 331TK-419, 331TK-420, 331TK-421, 331TK-422, 331TK-425, 331TK-426, 331TK-428, 331TK-429, 331TK-433, 331TK-434, 331TK-435, 331TK-436, 331TK-437, 331TK-439, 331TK-440, 331TK-480, 331TK-481, 331TK-482, 331TK-483, 331TK-484, 331TK-485, 331TK-486, 331TK-487, 331TK-501, 331TK-502, 331TK-503, 331TK-504, 331TK-505, 331TK-506, 331TK-507, 331TK-508, 331TK-509, 331TK-510, 331TK-511, 331TK-512, 331TK-513, 331TK-514, 331TK-515, 331TK-516, 331TK-517, 331TK-518, 331TK-519, 331TK-604, 331TK-605, 331TK-606, 331TK-607, 331TK-608, 331TK-609, 331TK-610,

331TK-611, 331TK-612, 331TK-613, 331TK-614, 331TK-615, 331TK-616, 331TK-617, 113TK-401

b. VOM emissions from emission units using BAT for controlling VOM emissions shall not be subject to the VOM emissions reductions requirement specified in 35 IAC 205.400(c) or (e) as long as such emission unit continues to use such BAT [35 IAC 205.405(b)].

Cooling Towers (420E-13), 420-E7 and 421E-3); Sulfur Recovery Trains (11oA-train, 119B-train, 121C-train, 121D-train)

7.0 UNIT SPECIFIC CONDITIONS

7.1 Unit Process Heaters and Boilers
Control None[a]

[a] No add-on controls but some do have low NO_x or ultra low NO_x burners

7.1.1 Description

Process heaters are used to heat the petroleum material being processed. The heaters use as a fuel either alone or in combination fuel gas generated on site or purchased natural gas. The following list of emission units is divided into those subject to NSPS and those not subject to an NSPS. The primary NSPS requirement is on H_2S content of the fuel gas. There are several fuel gas systems at the site. Any system that does not feed an NSPS heater is not required to meet the same H_2S requirement. There are also some boilers that produce steam for process heat. The boilers burn the same gaseous fuels as the process heaters. The "CO" (carbon monoxide) boiler is also considered to be pollution control equipment for the FCCU. See Section 7.3.

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				
01	103	Hydrotreater Feed Heater 103B-1	9.0	None
02	104	Absorber Feed Heater 104B-20	24.6	None
03	104	Hydrogen Recycle Heater 104B-21	24.6	None
04	106	Vacuum Heater 106B-1	29.5	Low NO_x Burners
05	107	Recycle Gas Heater 107B-21	12.7	Low NO_x Burners
06	108	Process Heater 108B-41	40.0	Low NO_x Burners
07	108	Steam Superheater 108B-42	8.3	Low NO_x Burners
08	109	Steam HC Reformer Heater 109B-62	103.0	Low NO_x Burners

Permit Emission Unit Number	Permittee Unit Number	Permittee Equipment Number	Firing[a] Rate (mmBtu/hr)	Emission Control Equipment
09	113	Coker Charge Heater 113B-3	88.8	Low NO_x Burners
Units Not Subject to NSPS				
10	111	Atmospheric Heater 111B-1A	322.0	None
11	111	Atmospheric Heater 111B-1B	322.0	None
12	111	Vacuum Heater 111B-2	219.8	Ultra Low NO_x Burners
13	112	FCC Air Heater 112B-1	121	None
14	112	CO Boiler 112B-2	347	None
15	113	Coker Charge Heater 113B-1	88.8	Ultra Low NO_x Burners
16	113	Coker Charge Heater 113B-2	88.8	Ultra Low NO_x Burners
17	114	Feed Preheater 114B-1	32.6	None
18	114	Stripper Trim Reboiler 114B-2	26.5	None
19	114	Stripper Reboiler 114B-3	26.3	None
20	115	Feed Heater 115B-1	21.4	None
21	115	Stripper Reboiler 115B-2	25.2	None
22	116	Charge Heater and Stabilizer Reboiler 116B-1	125.6	None
23	116	Interheater and Naphtha Stripper Reboiler 116B-2	106.9	None
24	116	#2 Interheater 116B-3	15.9	None
25	116	Stabilizer Trim Reboiler 116B-4	30.4	None
26	118	Hot Oil Heater 118B-1	93.8	None
27	118	Reactor Charge Heater 118B-51	8.9	None
28	122	ARU (Clay) Tower Furnace 122B-1	6.9	None
29	122	Reactor Charge Heater 122B-2	5.8	None

Permit Emission Unit Number	Permittee Unit Number	Permittee Equipment Number	Firing[a] Rate (mmBtu/hr)	Emission Control Equipment
30	123	Feed Preheater 123B-1	45.6	None
31	123	Feed Preheater 123B-2	121.2	None
32	123	Reheat Furnace 123B-3	55.3	None
33	123	Reheat Furnace 123B-4	37.6	None
34	123	Reheat Furnace 123B-5	42.0	None
35	125	Feed Heater 125B-1	69.3	None
36	125	Stripper Reboiler 125B-2	82.3	None
37	430	Auxiliary Boiler 430B-1	325.0	None
38	431	Boiler #19	249	None

[a] Firing rates listed are for descriptive purposes and are not permit limits unless stated as such in Condition 7.1.5.

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, superheater, reboiler, or furnace that burns gaseous 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, emissions units 01-09 listed in Condition 7.1.2 shall not burn any fuel gas that contains H_2S 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)) Based on the conditions in the Permittee's gas system, this is equivalent to 160 ppmv (the units the monitor reads).

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. No person shall cause or allow the emission of nitrogen oxides into the atmosphere in any one hour period from any existing fuel combustion emission

source with an actual heat input equal to or greater than 250 mmBtu/hr, located in the Chicago major metropolitan areas when firing gaseous fuel to exceed 0.3 lbs/mmBtu of actual heat input. Due to their firing rates, this provision only applies to permit Emission Unit Nos. 10 (111B-1A), 11 (111B-1B), 14 (112B-2), and 37 (430B-1). (35 IAC 217.141)

e. There are no provisions for operation of the heaters or boilers during malfunction or breakdown in this section. However, the CO boiler (112B-2) is also a control device for the FCCU and operation of the FCCU during malfunction or breakdown of the CO boiler is addressed in Section 7.3.3 of this permit.

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. 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. None of the new units listed in Condition 7.1.2 have a firing rate greater than 250 mmBtu/hr. For the purposes of this rule, new is defined as constructed after April 14, 1972.

c. The rule for SO_2 limits from a combination of fuels (35 IAC 214.162) does not apply since all of these units burn gaseous fuels only and not liquid or solid fuels.

d. This permit is issued based on the affected process heaters 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.

7.1.5 Operational Limits

a. As specified in Condition 7.1.2, NO_x emissions from certain affected process heaters and boilers are reduced through low NO_x burner. This is an emission prevention method rather than post-formation emission reduction method. Condition 7.1.6 includes an emission rate as well as total pounds of NO_x emitted.

b. The low-NO_x or ultra low-NO_x burners on heaters identified as having them shall be operated according to the manufacturer=s specifications so as to achieve the reduced NO_x emission rate.

c. The Coker Charge Heater (113B-2) shall be operated with Ultra Low-NO_x burners in accordance with an agreement and consent order with the USEPA Region 5, Docket No. 5-CAA-96-012.

7.1.6 Emission Limitations

In addition to Condition 5.2.2, the affected process heaters are subject to the following:

a. Emissions from the affected heaters as indicated shall not exceed the following limits [T1]:

	E M I S S I O N S (Tons/Year) Heater No.		
Pollutant	113B-3	106B-1	103B-1
NO_x	34.2	16.80	6.3
SO_2	8.0	4.09	1.0
CO	6.6	5.32	1.3
PM	5.8	0.46	0.5
VOM	1.2	0.43	---
Firing Rate (mmBtu/hr)	88.8	29.5	9.0
NO_x Rate (lb/mmBtu)	----	0.13	.16
Construction Permit	97080099	95040127	95030064

	E M I S S I O N S (Tons/Year) Heater No.	
Pollutant	104B-20	104B-21
NO_x	13.20	11.0
SO_2	2.9	2.6
CO	2.2	1.8
PM	1.8	1.8
VOM	0.4	0.3
Firing Rate (mmBtu/hr)	30.2	24.6
Construction Permit	85090012	85090012

b. i. Emissions of NO_x from the following five process heaters combined shall not exceed

128.97 tons/yr: 108B-41, 109B-62, 106B-1, 107B-21 and 108B-42. [T1R]

ii. In addition NO_x emissions rates shall not exceed the following: 108B-41 and 109B-62, 0.16 lb/mmBtu; 106B-1, 107B-21 and 108B-42, 0.13 lb/mmBtu. These five heaters shall be equipped with analyzers to monitor excess air. These requirements represent the application of Best Available Control Technology as required by Section 165 of the Clean Air Act. [T1]

c. The limits in Condition 7.1.6(a) and (b)(i) 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).

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).

The above limitations in Condition 7.1.6(a) were established in Permits 85090012, 95030064, 95040127, and 97080099, and those in Condition 7.1.6(b)(ii) were established in Permit 83010013, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned Construction 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].

The above limitations in Condition 7.1.6(b)(i) contain revisions to previously issued Construction Permit 83010013. The source has requested that the Illinois EPA establish conditions in this permit that allow various refinements from the conditions of this construction permit, consistent with the information provided in the CAAPP application. The source has requested these revisions to the units: hours of operation and firing rate 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 contained in Condition 7.1.6(b)(i) continue to ensure that the construction and/or modification addressed in the above construction 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 construction permit and the information in the CAAPP application contains the most current and accurate information for the source. Specifically, the average firing rate and average hours of operation (8,000 hours/year) were used for annual total in the original permit. The Permittee now believes they could operate at near maximum rate and continuously (8,760 hours/year). Since the original limits were established in a PSD permit the modeling performed at the time of originally issuing the PSD permit was reviewed and the Illinois EPA concludes that the impact remains insignificant at the higher rate. The BACT limit has not been changed. In addition, the firing rate was amended to reflect the higher heating value of the fuel gas. Emission factors are based on higher heating value. [T1R]

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 7.1.6 or Condition 7.1.3(d).

7.1.8 Monitoring Requirements

a. Fuel Gas Analysis for Gas Systems that Serve NSPS Heaters

Pursuant to the requirements of the NSPS specified in Condition 7.1.3(b), the Permittee has chosen to monitor and record the fuel gas H_2S concentration rather than SO_2 concentration. The Permittee has also chosen to continuously monitor at one location that accurately represents the concentration of H_2S in the fuel gas being burned, even the units not subject to NSPS. Any performance evaluation required pursuant to 40 CFR 60.13(c) for the H_2S monitor shall use Performance Specification 7. Method 11 shall be used for conducting the relative accuracy evaluations (40 CFR 60.105(a)(4)).

b. Fuel Gas Analysis for Gas Systems that Do Not Serve NSPS Heaters

Any fuel gas system that does not provide fuel to heaters subject to the NSPS may take one daily sample of gas and determine its H_2S content in a laboratory.

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 boilers to demonstrate compliance with Conditions 7.1.3, 7.1.6, and 7.1.8, pursuant to Section 39.5(7)(b) of the Act:

a. A continuous record of the H_2S 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.

   For any fuel gas system that does not provide fuel for heaters subject to the NSPS limit, a record of the analysis for H_2S content of one daily sample is acceptable.

b. Total gas burned in all units combined (scf/mo) for each type of fuel (refinery gas and natural gas).

c. Records showing the design firing rate of each unit with backup calculations.

d. NO_x, CO, SO_2, 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. For NSPS units as identified in Condition 7.1.2, any exceedance of the concentration of H_2S 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 firing rate allowed by 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 recommended practices.

b. Except for SO_2 emissions, emissions shall be calculated using AP-42 emission factors (Table 1.4-1, 5th Edition, March, 1998) for natural gas boilers. These factors are as follows:

	Emission Factor[a] ($lb/10^6$ scf) Firing Rate	
	Less Than 100 mmBtu/hr	Greater Than 100 mmBtu/hr
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] The Permittee has submitted and may use a list of values that are based on an emission factor in pounds per million Btus. The factors were derived from AP-42 factors with standard conversion from million scf to million Btus, or from unit-specific stack test results. These values may be updated as published factors are revised or as additional stack test results become available, except that for VOM the same factor must be used as was used in determining the ERMS baseline.

[b] These values do not apply if Condition 7.1.6 requires a different value. The CO value may also be different for those fuel combustion units as some low NO_x burners have higher CO emissions.

c. SO_2 shall be calculated using the monitored H_2S content of the gas, the Btu value of the gas, gas usage, and stoichiometric conversion of H_2S to SO_2.

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 Lemont refinery is typical of refineries in that it has many storage tanks. These may contain liquids at standard conditions such as crude oil, gasoline, intermediates, chemicals, diesel and fuel oil or be pressurized tanks for materials that are vapors at standard conditions but become liquefied under pressure. Section 7.2.2, which in turn refers to Attachment 1, identifies various groups. The group description may be broader than standard context. For instance, a "gasoline" tank may contain a material that is not yet consumer-usable but will be blended with other components into a consumer usable gasoline. The group does not necessarily reflect current material in the tank. For instance, a tank that meets the requirements for storing gasoline may currently be storing diesel oil but is listed as a gasoline tank because gasoline could be stored in the tank. Some tanks may even be currently storing materials that do not emit VOM.

The rules that apply to each tank are specified by group letter.

Several tanks for materials that are added to gasoline as it is being loaded into trucks, such as ethanol and gasoline additives, are included in Section 7.6 rather than here. Two tanks that store process wastewater will also provide oil-water separation.

7.2.2 List of Emission Units and Air Pollution Control Equipment

See Attachment 1

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 a VOM and listed in Attachment 1.

b. Group A through E in Attachment 1, except as noted, are subject to the control requirements of 35 IAC 218.122(b) and 40 CFR 63 Subpart CC, which in turn reference the requirements of 40 CFR 63 Subpart G. Certain tanks are designed as HON tanks in Attachment 1. These tanks are subject to 40 CFR 63 Subpart G directly without reference from Subpart CC.

c. Each storage tank subject to 40 CFR 63 Subpart CC (40 CFR 63 Subpart G) is hereby shielded from compliance with 35 IAC 218.121, 123 and 124, except for the

requirements of Conditions 7.2.5. 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 218.121, 123 and 124.

d. For each tank that is not a Petroleum Refinery NESHAP Group 1 tank solely due to HAP content, the Permittee must either comply with 40 CFR 63 Subpart CC, or the requirements of 35 IAC 218.121, 123 and 124 will apply.

e. Neither 40 CFR 63 Subpart CC or 35 IAC 218 Subpart have any requirements that apply to Groups F and G in Attachment 1, except that if the tank contains over 40,000 gallons and the vapor pressure is over 11.1 psia the material must be stored in a pressurized tank. Group G tanks are all pressurized, even if containing less than 40,000 gallons.

f. The drains associated with the MOSC Tank, 113TK-401, are subject to NSPS, 40 CFR 60 Subpart QQQ for VOM emissions from petroleum refinery wastewater systems.

   i. The process drains shall comply with the standard in 40 CFR 60.692-2 or 60.693-1.

   ii. Repairs shall be made as soon as practicable, but not later than 15 calendar days after identification, except as provided in 40 CFR 60.692-6. Whenever cracks, gaps or other problems are detected, repairs shall be made as soon as practicable.

g. The two process water tanks (331TK-485 and 486) are also subject to the alternative standards for oil-water separators in NSPS, 40 CFR 60, Subpart QQQ for VOM emissions from petroleum refinery wastewater systems (40 CFR 60.693-2).

7.2.4 Non-Applicability of Regulations of Concern

a. Except as provided for in the regulations, 35 IAC 218.122(b) requires the use of a permanent submerged loading pipe if the vapor pressure of the liquid in a tank is above 2.5 psia. Since all tanks at the source that hold liquid with a vapor pressure over 2.5 psia have floating roofs, the liquids must enter the tanks below the surface of the liquid.

b. Tanks subject to 40 CFR 63 Subpart CC (40 CFR 63 Subpart G) are not subject to 40 CFR 60 Subpart Kb. Accordingly, because Tanks 331TK-485, 486, and 487

are subject to 40 CFR 63 Subpart CC, they are not subject to the requirements of 40 CFR 60 Subpart Kb.

7.2.5 Control Requirements

a. i. Each affected tank subject to 40 CFR 63 Subpart G (as incorporated by 40 CFR 63 Subpart CC) equipped with an external floating roof shall comply with the requirements of 40 CFR 63.119(c), which requires the use of an external floating roof that is equipped with a primary and secondary seal.

A. The primary seal shall be either a metallic shoe seal or a liquid mounted seal; and

B. 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 63.120(c)(a)(iii)):

ii. 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 218.124(a)(3)];

iii. All openings of the floating roof deck, other than drains, 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 be equipped with covers, lids, or seals [35 IAC 218.123(b)(3) and 218.124(a)(4)];

iv. Covered external floating roof tanks may comply with the requirements for internal floating roof tanks. See Condition 7.2.5(b).

b. Each affected internal floating roof tank shall comply with the requirements of 40 CFR 63.119(b), 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), either of which is equipped with one of the following:

i. A primary seal that is either a metallic shoe seal or a liquid mounted seal; or

ii. A primary seal and secondary seal that completely cover the annular space between the floating roof and the wall of the storage vessel in a continuous fashion except during the inspections required by Condition 7.2.8. The primary seal may be vapor-mounted.

7.2.6 Emission Limitations

Tanks 331TK-485 and 486 are subject to the following:

Throughput of VOM contaminated water through each tank, vapor pressure of the material stored, and emissions of volatile organic material (VOM) from each process water tank (TK-485 and 486) shall not exceed the following:

Throughput (bbl/yr)	Vapor Pressure (psia)	VOM Emissions (ton/yr)
1,320,000	7.0	1.3

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 91090092, 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].

7.2.7 Operating Requirements

a. Each affected tank subject to 40 CFR 63 Subpart G (as incorporated by 40 CFR 63 Subpart CC) equipped with an external floating roof shall be operated in compliance with the operating requirements of 40 CFR 63.119(c), (d), and 63.120(b) as follows:

i. 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 63.119(c)(3) and (4)]

ii. For primary seals that use a metallic shoe seal, one end of the 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 63.120(b)(5)]

iii. The secondary seal shall completely cover the space between the roof edge and the vessel wall except as provided in (v), and there shall be no holes, tears, or other openings in the seal or seal fabric. [40 CFR 63.120(b)(6)]

iv. The accumulated area of gaps between the vessel wall and the primary seal shall not exceed 212 square centimeters per meter of vessel diameter and the width of any portion of any gap shall not exceed 3.81 centimeters. [40 CFR 63.120(b)(3)]

v. The accumulated area of gaps between the vessel wall and the secondary seal shall not exceed 21.2 square centimeters per meter of vessel diameter and the width of any portion of any gap shall not exceed 1.27 centimeters. These seal gap requirements may be exceeded during the measurement of the primary seal gaps as required by Condition 7.4.8. [40 CFR 63.120(b)(4)]

vi. The covers, lids or seals on openings of the 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. [40 CFR 63.646(f)(1)]

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

C. Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports [40 CFR 63.646(f)(3)];

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 218.121(b)(1)].

viii. A tank that is in-service shall be repaired or emptied upon identification in an inspection that the accumulated area of gaps between the tank wall and primary seal exceed 212 cm^2 per meter of tank diameter and the width of any portion of any gap exceeds 3.81 cm, 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 cm^2 per meter of tank diameter and the width of any portion of any gap exceed 1.27 cm, 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 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 tank shall be operated in compliance with the operating requirements of 40 CFR 63.119(b) or(d) and 63.120(a) as follows:

i. 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 63.119(b)(1)]

ii. The covers, lids or seals on openings of the 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. [40 CFR 63.646(f)(1)]

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

C. Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports [40 CFR 63.646(f)(3)];

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 218.121(b)(1)].

iv. A tank that is in-service shall be repaired or emptied 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 63.120(a)(4)]

v. 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. [40 CFR 63.120(b)(7)]

c. For purposes of safety, pressurized tanks may have relief valves that vent to a flare in order to reduce the pressure in the tank.

7.2.8 Inspection Requirements

a. The Permittee shall fulfill the applicable testing and procedures requirements of 40 CFR 63.120(b) for each affected tank subject to 40 CFR 63 Subpart G (as incorporated by 40 CFR 63 Subpart CC) equipped with

an external floating roof equipped with an external floating roof as follows:

i. Except as provided in (ii) below, the Permittee shall measure gaps between the tank wall and the secondary seal at least once per year (Annual Inspection) and the primary seals at least once every five years (Five Year Inspection). The measurement shall be conducted in accordance with the following methods and procedures: [40 CFR 63.120(b)(1), (2), (3), 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;

   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;

   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;

   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)(iv) and (a)(v).

   E. Prior notification for the above inspection shall be given to the Illinois EPA as specified in Condition 7.2.10(b).

ii. 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)(iv) or (a)(v) 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

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 two extensions may be utilized for an occurrence.

iii. A. 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) that the Permittee shall repair the features prior to refilling the storage tank with VOL. [40 CFR 63.120(b)(10)]

B. Prior notification for the above inspection shall be given to the Illinois EPA as specified in Condition 7.2.10(a).

b. The Permittee shall fulfill the applicable testing and procedures requirements of 40 CFR 63.120(a) 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. For each affected 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);

ii. For each affected tank equipped with a double-seal system, 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).

iii. For each affected tank equipped with a double-seal system, 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).

iv. Prior notification for the above inspection shall be given to the Illinois EPA as specified in Condition 7.2.10(b).

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. The Permittee shall fulfill the applicable recordkeeping requirements of 40 CFR 63.123 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 63.123(a)]

ii. Keep a record of all reports submitted in accordance with 40 CFR 63.654(e) including the Notification of Compliance Status, Periodic Reports, and other reports. [40 CFR 63.123(b)]

iii. Keep a record of each Annual, Five Year and Out-of-Service Inspection performed as required by Condition 7.2.8(a)(i) and (a)(iii). The records shall include the following information: [40 CFR 63.123(d)]

A. The date the measurement was performed;

B. Who performed the measurement;

C. The raw data obtained in the measurement;

D. The calculations described in Condition 7.2.8(a)(i)(C and D); and

E. Summary of compliance.

b. The Permittee shall maintain records of the following for each affected tank to demonstrate compliance with the Out-of-Service Inspection requirements of Condition 7.2.8(a)(iii):

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.

c. 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(b)) 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.

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 7.2.7(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.

e. The Permittee shall maintain records of the following items to demonstrate compliance with the limits in Condition 7.2.6:

   i. The type, characteristics and throughput of each material stored in tanks 485 and 486;

   ii. Actual emissions of VOM on a monthly basis from tanks 485 and 486, tons/month; and

   iii. Annual emissions of VOM from tanks 485 and 486 for the current month and the previous 11 months, tons/year.

f. 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.

g. The Permittee shall maintain records of the following 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.

   i. The identification and properties of each organic liquid stored at the source, as related to emissions, i.e., vapor pressure and molecular weight;

   The following items shall be maintained on a monthly basis for the previous month:

ii. The throughput (or change in tank level) of each organic liquid through each tank; and

iii. The volatile organic material emissions attributable to each organic liquid stored in each tank, with supporting calculations, calculated utilizing an approved USEPA methodology, such as the TANKS3 program and the same methodology as was used to calculate the ERMS baseline;

h. Records for NSPS as required by 40 CFR 60.697

i. For individual drain systems subject to '60.692-2, the location, date and corrective action shall be recorded for each drain when the water seal is dry or otherwise breached, when a drain cap or plus is missing or improperly installed, or other problem is identified that could result in VOC emissions, as determined during the initial and periodic visual or physical inspection.

ii. For junction boxes subject to '60.692-2, the location, date, and correction action shall be recorded for inspections required by '60.692-2(b) when a broken seal, gap, or other problem is identified that could result in VOC emissions.

iii. For sewer lines subject to '60.692-2 and 60.693-1(e), the location, date, and corrective action shall be recorded for inspections required by ''60.692-2(c) and 60.693-1(e) when a problem is identified that could result in VOC emissions.

iv. For oil-water separators subject to '60.692-3, the location, date, and corrective action shall be recorded for inspections required by '60.692-3(a) when a problem is identified that could result in VOC emissions.

i. Optional Notification Concerning Actual Contents of Tanks

All tanks are assumed to contain materials that require compliance with rules specified in Condition 7.4.3. 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 7.4.3. This applies to both 35 IAC and 40 CFR 60 and 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.

7.2.10 Reporting and Notification 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 HAP=s, pursuant to 40 CFR 63.654(h)(2)(i) so the Illinois EPA may inspect the affected tank prior to refilling, except as allowed in 40 CFR 63.654(h)(2)(i)(B).

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, pursuant to 40 CFR 63.654(h)(2)(ii), so the Illinois EPA may observe the measurements. Note that one notification may be made for a group of tanks and is valid for 90 days from the date the first tank in the group has the gap measurements made.

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 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 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. Pursuant to 40 CFR 63.654, the Permittee shall submit Periodic Reports no later than 60 days after each seal gap measurement required by Condition 7.2.8(a)(i), (ii), (iii), (iv), or (v) as follows:

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;

B. The raw data obtained in the seal gap measurement and the calculations described in Condition 7.2.8(a);

C. A description of any seal condition specified in Condition 7.2.7(a)(ii) or (iii) that is not met;

D. A description of the nature of and date the repair was made, or the date the vessel was emptied.

ii. If an extension is utilized in accordance with Condition 7.2.8(a)(ii), the following shall be provided in the next periodic report:

A. Identification of the vessel;

B. The documentation required in Condition 7.2.9(c);

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(b)(iv), the following shall be provided in the next periodic report:

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.

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)(iii), the following information shall be included:

A. Date of inspection;

B. Identification of storage vessel(s) with failure;

C. Description of failure;

D. Nature of and date of repair.

e. The Permittee shall submit the following information along with its annual emission report:

The annual emissions of VOM from Storage Tanks 485 and 486 if the VOM emissions exceed the allowable limits of Condition 7.2.6.

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(a), (b), (c), (d), 7.2.10(a), (b), (c), and (d).

b. For process water tank 331TK-485 and 486, compliance as indicated in Condition 7.2.12(a) is also deemed compliance with the requirements of Condition 7.2.3(g) and 40 CFR 60.693-2.

c. Compliance with the emission limitations of Condition 7.2.6 shall be demonstrated by the recordkeeping and

reporting requirements of Conditions 7.2.9(e) and 7.2.10(e).

d. Emissions shall be calculated using the USEPA TANKS3 program consistent with the ERMS baseline and calculation procedures described in USEPA's AP-42, 5th ed., (September 1997) and average monthly ambient air data.

7.3 Unit Fluid Catalytic Cracking Unit
Control CO Boiler and Electrostatic Precipitators

7.3.1 Description

The fluid catalytic cracking unit (FCCU) converts heavy low grade gas-oil components from the crude unit into more valuable lighter products by “cracking” the long chain materials on a fine catalyst in a reactor. The reactor has internal cyclones that separate the catalyst from the product but the reactor has no vents to the atmosphere. During the reaction the catalyst become coated with coke.

The coke is removed from the catalyst by partial combustion in a regeneration step which results in carbon monoxide (CO). Primary and secondary cyclones separate most of the regenerated catalyst from the CO. The CO is burned in a boiler and the catalyst fines which pass through the boiler are controlled by electrostatic precipitators (ESPs) and the fines disposed of. The regenerated catalyst from the cyclones is reused. Although the CO boiler acts as a pollution control device (converting CO to CO_2) it is still subject to rules for combustion units. The cyclones are not control equipment but recover raw material.

7.3.2 List of Emission Units and Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Emission Control Equipment
40	112	Catalyst Regenerator (112D-1)	CO Boiler (112B-2) and ESPs (112P-1 and 2)
41	112	Catalyst Hoppers (112F-1 and 112F-2)	Scrubber (112X-11)

7.3.3 Applicability Provisions and Applicable Regulations

a. An “affected fluid catalytic cracking unit” for the purpose of these unit-specific conditions, is a unit described in Condition 7.3.2, along with its associated equipment (e.g., riser, reactor, air blower, etc.). The catalyst regenerators are subject to 35 IAC 212.381 which states that:

> No person shall cause or allow the emission rate of PM from catalyst regenerators of fluidized catalytic converters to exceed in any one hour period the rate determined using the following equations:

$E = 4.10(P)^{0.67}$
for P less than or equal to 30 T/hr
$E = (55.0\ (P)^{0.11}) - 40.0$
for P greater than 30 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

Previous emission test have demonstrated that the Permittee can comply with the above emission limit by operating only one (either of the two) or both of the ESPs.

b. The CO boiler (112B-2) is subject to 35 IAC 216.361(a), which states that:

> 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.

c. Although cited in rules of general applicability [Condition 5.2.2(d)], 35 IAC 214.301 is highlighted here as this unit is a major emitter of SO_2. That rule limits the concentration of SO_2 emissions from any process emission unit to 2,000 ppm.

d. Malfunction and Breakdown Provisions

In the event of a malfunction or breakdown of a CO boiler, ESP, or other features of the FCCU the Permittee is authorized to continue operation of the FCC regenerator in violation of the applicable requirement of 35 IAC 212.381, 214.301, and 216.361, 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 or malfunctioning feature(s) of the CO boiler and/or ESP as soon as practicable. Repairs shall be accomplished within seven days (168 hours). If the feature(s) can not be repaired within seven days and the FCCU can not be removed from service within seven days, the Permittee shall obtain an extension, for up to

8 additional days, from the Illinois EPA regional office in Des Plaines. The request for such an extension must document that the CO boiler and/or ESP is unavailable and specify a schedule of actions the Permittee will take that will assure the feature(s) will be repaired or the FCCU shutdown as soon as practicable.

If only one ESP is malfunctioning, and the flow has all been directed to the other ESP, the FCCU is in compliance and not operating under a malfunction basis. Therefore, “as soon as practicable”, does not require use of overtime labor to repair the malfunctioning ESP, but does require priority shipment of any parts required for the repair and a top priority for standard shift repair personnel. If the second ESP also malfunctions before the first is repaired, “as soon as practicable”, does require use of overtime labor, if necessary, to repair the ESP. If the CO boiler malfunctions, “as soon as practicable” requires use of overtime.

ii. The Permittee shall fulfill the applicable recordkeeping and reporting requirements of Conditions 7.3.9(b) and 7.3.10(a).

iii. The continuous opacity monitor shall continue to operate during period of malfunction and breakdown as specified above.

iv. The Permittee shall take all reasonable measures necessary to minimize the quantity of emissions in excess of applicable requirements and the length of the malfunction or breakdown including but not limited to reduction in operating rate and orderly shutdown of the unit if appropriate.

v. Note that since compliance has been demonstrated with only one ESP operating, if one ESP malfunctions the unit is not continually operating out of compliance after the ducting to the other ESP is completed. However, a report must be filed as the emissions are out of compliance from the time of malfunction until the ducting change is completed.

Note also that although the SO_2 concentration limits of 35 IAC 214.301 are exceeded if the CO boiler malfunctions, the actual SO_2

emissions in pounds per hour are not increased. The loss of combustion air in the boiler results in a higher SO_2 concentration. Section 214.301 or 216.361 are not exceeded if only an ESP malfunctions.

e. Startup Provisions

The Permittee is authorized to operate an affected FCCU in violation of the applicable limit of 35 IAC 212.381, and 216.361 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 startups, and frequency of startup. This authorization is subject to the following:

i. This authorization only extends for a period of up to 78 hours following initiation of feed into the unit during each startup event.

ii. The Permittee shall take the following measures to minimize startup emissions, the duration of startups, and minimize the frequency of startups:

A. Implementation of established startup procedures, including taking all reasonable measures to minimize the quantity of emissions in excess of applicable standards, the length of each startup, and the number of startups; and

B. Begin operation of the continuous opacity monitor prior to the start of catalyst loading.

iii. The Permittee shall fulfill the applicable recordkeeping requirements of Condition 7.3.9(a).

iv. If the startup period exceeds 78 hours the Illinois EPA=s regional office shall be notified of the expected additional length of time required to complete the startup. The length of time for the startup shall be extended if the Permittee demonstrates that the emissions will be less during the extended startup than if the unit is shutdown and restarted.

v. When the FCCU is shutdown for a scheduled turnaround the Permittee shall inspect the operation of the slide valve used for

bypassing the CO boiler and ESPs. If the slide valve is not operating as designed, it shall be repaired.

f. The catalyst hoppers (112F-1 and 112F-2) are subject to 35 IAC 212.322. This rule is written out in Condition 5.2.

7.3.4 Non-Applicability of Regulations of Concern

a. The FCCU is not subject to 40 CFR 63 Subpart CC (Refinery NESHAP) because that rule only applies to certain units that emit organic HAP emissions and this unit does not emit organic HAPs.

b. The FCCU is not subject to 40 CFR 60 Subpart J (Refinery NSPS) because the FCCU, including the regenerator, was constructed prior to the applicability date of January 17, 1984.

7.3.5 Control Requirements

The scrubber on the catalyst hoppers must be operated when a vacuum is applied to one of the catalyst hoppers. The Permittee is not required to operate the scrubber on the catalyst hoppers at any other time.

7.3.6 Emission Limitations

In addition to Condition 5.2.2, the affected FCCU is subject to the following:

There are no specific emission limitations for this unit.

7.3.7 Testing Requirements

Within 120 days of receipt of a written notice from the Illinois EPA, the Permittee shall determine the PM, CO, or SO_2 concentrations or emission rates from the affected FCCU prior to discharge to the atmosphere. These concentrations or emission rates shall be determined by the test methods described in 40 CFR 60 Appendix A.

7.3.8 Monitoring Requirements

a. The Permittee shall maintain and operate a continuous opacity monitoring system on the catalyst regenerator. [35 IAC 201.401(a)(4)]

b. The Permittee shall measure the amount of catalyst loss during periods of startup, malfunction or breakdown by a material balance.

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 Condition 7.3.3, pursuant to Section 39.5(7)(b) of the Act:

a. Records of Startup

The Permittee shall maintain the following records, pursuant to Section 39.5(7)(b) of the Act, for each affected FCCU subject to Condition 7.3.3(e), which at a minimum shall include:

i. The following information for each startup of the FCCU.

A. Date and duration of the startup, i.e., start time and time normal operation was achieved. For purposes of this Condition, “normal operation” is defined as operation of the CO boiler and ESP in compliance with applicable emission limits;

B. If normal operation was not achieved within 78 hours, an explanation why startup could not be achieved in 78 hours;

C. A detailed description of the startup, including a reason for the startup and whether the COM was operating;

D. An explanation why 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 allowable levels; and

F. Whether exceedance of Condition 5.2.2 occurred during startup, and if so, an explanation and estimated duration (hours) of the exceedance.

ii. Estimated catalyst lost during startup (tons).

iii. If startup exceeded 78 hours, the date and time Illinois EPA=s regional office was

contacted, the person spoken to, items discussed, and follow-up instructions.

b. Records for Malfunctions and Breakdowns of CO Boiler, ESP or Other Features of FCCU

The Permittee shall maintain records, pursuant to 35 IAC 201.263, of continued operation of a FCCU during malfunctions and breakdown of the control features of the FCCU, which as a minimum, shall include:

i. Date and duration of malfunction and 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 FCCU 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;

vi. The amount of emissions released above applicable emission limitations during malfunction/breakdown; and

vii. If the malfunction and breakdown exceeded seven days (168 hours), the date and time Illinois EPA's regional office was contacted, the person spoken to, items discussed, and follow-up instructions.

c. Continuous opacity monitor readings (%).

d. Catalyst recycle rate (ton/hr). Condition 7.3.3(a) requires compliance based on an hourly rate. Because, the calculation involves a complex material balance with measurement of volume, the Permittee is only required to perform the required calculation weekly, assuming either a steady rate or making other adjustment based on organic material flow rates to determine average hourly rate for the week. The term recycle rate is used as specified by the rule but a more accurate term is recirculation rate since it includes fresh catalyst. If the normal weekday on which the material balance is performed is a holiday,

the material balance may be performed for a 6, 8, or 9 day period.

e. Catalyst makeup rate (lb/mo).

f. Fines hauled away (lb/mo).

g. PM emissions (lb/hr). The explanation of hourly values in the Condition 7.3.9(d) also applies here.

7.3.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance of an affected FCCU with the following permit requirements, 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. Reporting of Malfunctions and Breakdowns for FCCU

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 a FCCU subject to Condition 7.3.3(d) during malfunction or breakdown of the control features of the FCCU.

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 with the applicable emission or opacity limitations due to malfunction, or breakdown.

ii. Upon achievement of compliance with the applicable emission or opacity limitations, the Permittee shall give a written follow-up notice within five business days to the Illinois EPA, Compliance Section and Regional Field Office, providing a detailed explanation of the event, an explanation why continued operation of the FCCU 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 FCCU was taken out of service.

iii. If compliance with the applicable emission or opacity limitations is not achieved within 7

working days of the occurrence, the Permittee shall submit interim status reports to the Illinois EPA, Compliance Section and Regional Field Office, within one business day (i.e., a maximum of eight days) 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 FCCU will be taken out of service.

iv. If the Permittee has received an extension of time to complete repairs, within five business days after compliance with the applicable emission or opacity limitations is achieved, the Permittee shall submit a final report which shall include emissions during the malfunction and breakdown period.

b. Reporting of Startups

Within 14 days of any startup the Illinois EPA's regional office shall be notified of the estimated amount of catalyst lost during the startup in excess of the permitted emission rate and the length of time the startup took following initiation of feed into the unit.

c. Results of any emission test that demonstrated noncompliance with Condition 7.3.3 regardless of whether the test was at the request of the Illinois EPA.

d. On or before the 45th day after each calendar quarter, the Permittee shall submit a report for the last preceding calendar quarter identifying any and all opacity measurements which exceed 30 percent, average over a six minute period.

These "excess opacity" reports shall provide, for each such incident, the percent opacity measured as well as the date and span of such incident. These repots shall also specify for each incident whether it occurred during startup, shut-down, or malfunction. If a malfunction is indicated in the report, all corrective actions taken, if any, shall be reported. The reports shall also specify, for each calendar quarter, the date of those periods during which the continuous monitoring system was not in operation. [35 IAC 201.405(c), (d) and (e)]

7.3.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.3.12 Compliance Procedures

a. Emissions calculations of PM, CO, SO_2, NO_x, and VOM may be derived from the following emission factors which were derived from previous emission test values, with adjustments based on operating rates, hours of operation, and additional emissions for period of startup, malfunction and breakdown. Emission factors derived from this information are as follows:

i. NO_x: 145 pounds per 1,000 bbl of liquid feed.

ii. SO_2: 0.0016 times percent sulfur in fresh feed times [fresh feed rate in pounds + 2.2 times recycle feed rate in pounds].

Note that recycle feed rate is not the same as catalyst recycle rate in Condition 7.3.3(a).

iii. PM: Three different values depending upon ESPs operated.

ESP Operation	lb PM/1,000 Barrels Feed
112P-1 Only	24.8
112P-2 Only	22.5
112P-1 and 112P-2 Operating in Parallel	22.1

iv. CO and VOM when CO boiler operating with supplemental fuel: See Section 7.1 for fuel combustion units. CO and VOM due to FCCU operation are negligible. Note that total emissions may be a combination of emission factors due to burning part FCCU gases and the remainder supplemental fuel gas.

7.4 Unit: HF Alkylation
Control: Scrubber/Flare

7.4.1 Description

In the HF alkylation unit isobutane and olefins are combined in the presence of hydrofluoric (HF) acid, which acts as a catalyst, to yield a product in the gasoline boiling range. The unit has its own flare that burns gases that are not recovered by a knockout drum.

HF acid is a HAP. Emissions are neutralized by a KOH scrubber, which is regenerated with lime.

The RADI (Rapid Acid De-Inventory) system is a system of equipment and set of procedures to safely prevent the release of HF acid. It normally has no emissions.

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	120-1	HF Alkylation reactor and most vessels are closed vent but relief valves vent to header and knockout drum	Scrubber (Neutralizer) and Smokeless Flare (844C-5)
43	120-2	KOH Regeneration	Carbon Canisters
44	120-3	Lime Storage Silo	Filter
45	120-4	RADI System	

7.4.3 Applicability Provisions and Applicable Regulations

An “affected HF alkylation process” for the purpose of these unit-specific conditions is a process that emits HF acid and is subject to the rules cited in Condition 5.2.

7.4.4 Non-Applicability of Regulations of Concern

a. The flare is not required to meet the performance and monitoring requirements of 40 CFR 63.11 because it is not used to comply with the provisions of the Refinery NESHAP. The gases vented to the flare do not contain HAPs as listed in 40 CFR 63 Subpart CC, Table 1 and therefore the vent does not qualify as a Group 1 miscellaneous process vent.

b. The main vent stream is not a Group 1 miscellaneous process vent pursuant to the definition of 40 CFR

63.641, because it does not contain HAPs listed in Table 1 of 40 CFR 63 Subpart CC.

7.4.5 Control and Operating Requirements

a. The scrubber/neutralizer shall be operated to neutralize HF acid and reduce HF emissions from the flare.

b. The carbon canisters shall be replaced prior to or as soon as practicable after VOM breakthrough occurs.

c. The filter on the lime silo shall be operated to minimize PM emissions.

7.4.6 Emission Limitations

In addition to Condition 5.2, the affected HF alkylation unit is subject to the following:

a. Emissions from the affected alkylation unit flare shall not exceed the following limits:

Annual Emissions (tons/year)					
PM	SO_2	NO_x	VOM	CO	Fluorides
2.6	0.3	3.1	8.3	24.8	0.2

In addition, emissions of fluorides from the entire HF alkylation system shall not exceed 1.6 tons/yr and including all processes downstream shall not exceed 3.0 ton/yr, the significant level for fluorides.

These limits are based on the maximum operating 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 permits 84090004 and 85010029, 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].

b. Emissions from the affected lime storage silo filter shall not exceed the following limits:

PM Emissions	
(lb/hr)	(ton/yr)
0.6	2.7

These limits are based on the maximum use of lime during KOH regeneration system.

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 98020028, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits are based on maximum operating rates and 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].

7.4.7 Testing Requirements

N/A

7.4.8 Monitoring Requirements

The presence of the affected flare's pilot flame shall be monitored using a thermocouple or other equivalent device to detect the presence of a flame and a camera for observation of the flame.

7.4.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected HF alkylation process or control to demonstrate compliance with Conditions 5.2 and 7.4.6, pursuant to Section 39.5(7)(b) of the Act:

a. i. Date and duration of any time when the pilot flame monitoring equipment of an affected HF alkylation process flare was not in operation, with explanation; and

ii. Date and duration of any time when there was no pilot flame present at an affected HF alkylation process flare, with explanation.

b. Monthly usage of HF acid.

c. Emissions of PM, SO_2, NO_x, VOM, CO, and fluorides from flare (Running 12 month total).

d. Emissions of PM from the lime storage silo filter (Running 12 months total).

e. Activation of the RADI system.

7.4.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of noncompliance of an affected HF alkylation unit with the following permit requirements, 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. Continued operation of the affected HF alkylation process when the flare is not operating.

b. Continued operation of the affected HF alkylation process when the KOH scrubber is not operating.

7.4.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.4.12 Compliance Procedures

Compliance with the applicable rules and emission limits is assumed if the affected HF alkylation process flare and KOH scrubber are properly operating.

7.5 Unit: Two Sulfur Recovery Units
Control: Oxidizers and One Unit has Beavon Sulfur Recovery Plant

7.5.1 Description

The plant sulfur recovery system consists of two separate operations. Unit 119 consists of a MEA regeneration system, sour water stripper and two identical Claus sulfur recovery units ("A" and "B") with oxidizers for tail gas cleanup. Unit 121 receives acid gas from the Unit 119 MEA regenerators and stripper and processes the gas through two identical Claus sulfur recovery units ("C" and "D") each with a Beavon Sulfur Recovery Plant (BSRP) for tail gas cleanup. The BSRP uses a Stretford solution to recovery the sulfur. Each train (A, B, C and D) has its own tail gas oxidizer (combustor).

The MEA regeneration system and sour water stripper which produce the acid gas (primarily H_2S) are a closed vent system and not listed as emission units.

7.5.2 List of Emission Units and Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Emission Control Equipment
46	119	Claus Sulfur Recovery Process (119A and B)	Two Oxidizers
47	121	Claus Sulfur Recovery Process (121C and D)	BSRP and Two Combustors

7.5.3 Applicability Provisions and Applicable Regulations

a. An “affected sulfur recovery unit” for the purpose of these unit-specific conditions, is a sulfur recovery unit identified in Condition 7.5.2.

b. The affected sulfur recovery units are subject to Condition 5.2; however, the only condition meaningful to this process are Conditions 5.2.2(c) and (d).

Unit 119 is not subject to 35 IAC 214.301 because it meets the exception of 35 IAC 214.382(a). See Condition 5.2.2(d) for a detailed explanation. Unit 121 is subject because it does not meet the exception of being an existing unit. Unit 121 is subject to 35 IAC 214.301 because it does not meet the exception of being an existing unit.

c. Units 119 and 121 sulfur recovery plants are both subject to NSPS, 40 CFR Subpart QQQ for VOM emissions from petroleum refinery wastewater systems.

   i. The process drains shall comply with the standard in 40 CFR 60.692-2 or 60.693-1.

   ii. Repairs shall be made as soon as practicable, but not later than 15 calendar days after identification, except as provided in 40 CFR 60.692-6. Whenever cracks, gaps or other problems are detected, repairs shall be made as soon as practicable.

d. Startup Provisions

   Operation of any train in either unit in excess of normal emissions during startup is allowed. The reason for the excess emissions is during the regeneration of catalyst phase. This regeneration may occur during a scheduled shutdown or on an emergency basis (i.e. between scheduled shutdowns). Failure to regenerate the catalyst results in higher SO_2 emissions during the normal sulfur recovery process. The excess emissions result from the burn-off of a thin layer of sulfur on the surface of the catalyst. During the burning off process the emissions are vented to the oxidizer for that unit. This does not change the emission rate but provides better dispersion. The emission standard being exceeded is 35 IAC 214.301 as the unit is not removing sulfur compounds from fuel gas during regeneration. Since the buildup of sulfur is small the emissions have not actually been tested but based on stoichiometry the concentration of probably exceeds 2000 ppm. Although the removal is a burn process, it is not a fuel combustion unit which would exempt it from the 2000 ppm limit of 35 IAC 214.301.

   If any of the amine regenerators need to be repaired, prior to opening of the regenerators they may be steam purged and the steam vented to one of the flares. The flares convert any traces of H_2S to SO_2.

e. The Permittee shall minimize emissions during startup by performing the following:

   i. When practicable, the startup procedure shall be planned to occur in conjunction with a scheduled shutdown rather than on an emergency basis.

   ii. The Permittee shall operate the sulfur recovery process in such a manner to minimize

the number of catalyst regeneration phases and to minimize the buildup of sulfur on the catalyst.

iii. During emergency startup of either of Unit 121's individual trains, the sulfur recovery process shall to the extent possible be transferred to either the Unit 119 sulfur recovery trains or the other trains of Unit 121. The BSRP shall also continue to operate.

f. This authorization to operate during startup is only valid for a maximum of five days at one time for each train. After five days the Illinois EPA's field office in Des Plaines shall be contacted by phone and any directives of the Illinois EPA followed.

g. The Permittee shall fulfill the applicable recordkeeping and reporting requirements of Conditions 7.5.10.

h. Malfunction and Breakdown Provisions

In the event of a malfunction or breakdown of the Beavon Sulfur Recovery Plant (BSRP), the Permittee is authorized to continue operation of the Claus Sulfur Recovery Units (CSRU) in violation of the applicable requirement of 35 IAC 214.301, as necessary to prevent risk of injury to personnel or severe damage to equipment. Malfunction may include replacement of Stretford solution during which the unit is not operating although not an equipment malfunction. This authorization is subject to the following requirements:

i. The Permittee shall repair the damaged feature(s) of the BSRP or remove the CSRU from active service as soon as practicable. This shall be accomplished within 10 days unless the feature(s) can not be repaired within 10 days and the units feeding the SRU can not be removed from active service within 10 days, and the Permittee obtains an extension, for up to 5 days, from the Illinois EPA. The request for such an extension must document that BSRP is unavailable and specify a schedule of actions the Permittee will take that will assure the feature(s) will be repaired or the units feeding the SRU shutdown as soon as practicable.

ii. The Permittee shall fulfill the applicable recordkeeping and reporting requirements of Conditions 7.5.9(b) and 7.5.10(a).

7.5.4 Non-Applicability of Regulations of Concern

a. Neither of the affected sulfur recovery units is subject to the New Source Performance Standards (NSPS) for Petroleum Refineries, 40 CFR 60 Subpart J, because none of the affected SRUs were constructed after October 4, 1976, as stated by the Permittee.

b. The affected sulfur recovery units are not subject to the NESHAP for Petroleum Refineries, 40 CFR 63 Subpart CC because they do not emit organic HAPs.

c. Neither of the sulfur recovery units is subject to 35 IAC 216.361 because they are not considered to be petroleum or petrochemical processes.

7.5.5 Control Requirements

a. The respective oxidizer (combustor) shall be operated at all times when an affected sulfur recovery train is in operation.

b. i. Process water drains in active service shall be equipped with water seal controls [40 CFR 60.692-2(a)(1)].

ii. As an alternative, process water drains that are inactive may be equipped with caps or plugs [40 CFR 60.692-2(a)(4)].

c. Junction boxes shall be equipped with a cover, which shall have a tight seal around the edge and shall be kept in place at all times, except during inspection and maintenance. The cover may have an open vent pipe which shall be at least 3 feet in length and not exceed 4 inches in diameter [40 CRR 60.692-2(b)(1 and 2)].

d. Sewer lines shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals or other emission interfaces.

7.5.6 Emission Limitations

In addition to Condition 5.2.2, the affected sulfur recovery units are subject to the following:

N/A

There are no specific emission limitations for these units.

7.5.7 Operating Requirements

a. This permit is issued based on all H_2S gas streams produced by treatment of refinery fuel gas being processed by one of the sulfur recovery units except in the event of startup/shutdown of the units. During startup/shutdown appropriate steps shall be taken to minimize emissions in excess of applicable emission limitations.

b. Whenever low water levels or missing or improperly installed caps or plugs in process sewer drains are identified, water shall be added or first efforts at repair shall be made as soon as practicable, but not later than 24 hours after detection [40 CFR 60.692-2(a)(5)]. Delays beyond 24 hours are permissible if the repair requires a complete or partial refinery or process unit shutdown, in which case the repair shall occur before the end of the next refinery or process unit shutdown [40 CFR 60.692-3].

c. If a broken seal or gap is identified during inspection, first effort at repair shall be made as soon as practicable, but not later than 15 calendar days after the broken seal or gap is identified [40 CFR 60.692-2(b)(3 and 4)]. Delays beyond 15 days are permissible if the repair requires a complete or partial refinery or process unit shutdown, in which case the repair shall occur before the end of the next refinery or process unit shutdown [40 CFR 60.692-6].

7.5.8 Monitoring and Inspection Requirements

a. The Permittee shall properly maintain and operate two hydrogen sulfide ambient air monitoring remote stations equipped with visible and audible alarm systems. The stations shall be located between the two residential receptor areas as indicated on the map submitted to the Illinois EPA as part of state operating permit 77020010 application dated October 31, 1996. The set points for the activation of the visible and audible alarm systems shall be fixed at such a level, that they provide an early indication of any release of hydrogen sulfide gas in the refinery which can impact the environment, including the threat of an odor nuisance in the areas outside the plant boundaries. The alarm set point values shall be approved by the Illinois EPA.

b. All ambient air monitoring equipment and procedures must be approved by the Illinois EPA. The procedures must describe all calibration procedures, audit procedures, preventative maintenance procedures, and

data collection and verification procedures. The Permittee shall have the option of replacing the existing hydrogen sulfide monitoring instruments with other instruments. Engineering specifications for such equipment shall be submitted to the Illinois EPA for approval prior to their purchase. The ambient air monitoring stations cannot be relocated without prior Illinois EPA approval nor can the alarm set point values be adjusted without prior approval by the Illinois EPA.

c. i. Each drain in active service shall be checked by visual or physical inspection monthly for indications of low water levels or other conditions that would reduce the effectiveness of the water seal controls.

ii. Except as provided in iii to follow, each drain out of active service shall be checked by visual or physical inspection weekly for indications of low water levels or other problems that could result in VOC emissions.

iii. As an alternative to the requirements in ii above, if an owner or operator elects to install a tightly sealed cap or plug over a drain that is out of service, inspections shall be conducted semiannually to ensure caps or plugs are in place and properly installed [40 CFR 60.692-2(a)(2, 3 and 4)].

d. Junction boxes shall be visually inspected semiannually to ensure that the cover is in place and to ensure that the cover has a tight seal around the edge [40 CFR 60.692-2(b)(3)].

e. The portion of each unburied sewer line shall be visually inspected semiannually for indication of cracks, gaps or other problems that could result in VOM emissions [40 CFR 60.692-2(c)(2)].

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 sulfur recovery unit, pursuant to Section 39.5(7)(b) of the Act:

a. Records of Startup

The Permittee shall maintain the following records, pursuant to Section 39.5(7)(b) of the Act, for each affected sulfur recovery unit subject to Condition 7.5.3(c), which at a minimum shall include:

i. The following information for each startup with regeneration classified as part of startup.

A. Date and duration of the startup, i.e., start time and time operation in compliance with applicable emission limitations is achieved, (i.e., regeneration completed);

B. If operation in compliance with applicable emission limitations was not achieved within five days, an explanation why startup could not be achieved in five days;

C. A detailed description of the startup, including reason for the operation and whether standard startup procedures were performed;

D. For emergency regeneration, an explanation why the procedure could not have been performed during a scheduled shutdown;

b. Records for Malfunctions and Breakdowns of the BSRP

The Permittee shall maintain records, pursuant to 35 IAC 201.263, of continued operation of a CSRP in Unit 121 subject to 35 IAC 214.301 during malfunctions and breakdown of the BSRP, 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 CSRU in Unit 121 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.

c. Records for NSPS as required by 40 CFR 60.697

i. For individual drain systems subject to '60.692-2, the location, date and corrective action shall be recorded for each drain when the water seal is dry or otherwise breached, when a drain cap or plus is missing or improperly installed, or other problem is identified that could result in VOC emissions, as determined during the initial and periodic visual or physical inspection.

ii. For junction boxes subject to '60.692-2, the location, date, and correction action shall be recorded for inspections required by '60.692-2(b) when a broken seal, gap, or other problem is identified that could result in VOC emissions.

iii. For sewer lines subject to '60.692-2 and 60.693-1(e), the location, date, and corrective action shall be recorded for inspections required by ''60.692-2(c) and 60.693-1(e) when a problem is identified that could result in VOC emissions.

iv. For oil-water separators subject to '60.692-3, the location, date, and corrective action shall be recorded for inspections required by '60.692-3(a) when a problem is identified that could result in VOC emissions.

d. SO_2 and NO_x emissions, with supporting calculations.

e. Amount of sulfur recovered.

7.5.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviation of an affected SRU with the following permit requirements, 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. Reporting of Startups for SRUs

The Permittee shall notify the Illinois EPA, Compliance Section and Regional Field Office, concerning continued operation of the affected sulfur

recovery units if the startup period exceeds five days.

b. If the concentration of H_2S at the remote monitors required by Condition 7.5.8 exceeds the alarm set point, the Permittee shall immediately report such information to local and state officials by telephone in a manner consistent with the procedure set forth in the Chemical Safety Contingency Plan prepared for this site.

c. Reporting of Malfunctions and Breakdowns for the BSRP

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 a CSRP in Unit 121 subject to Condition 7.5.3(c) during malfunction or breakdown of the control features of the BSRP.

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 CSRP in Unit 121 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 CSRP 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 CSRP will be taken out of service.

7.5.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.5.12 Compliance Procedures

Use of material balance, previous emissions testing and proper operation of the absorber with stretford solution shall be used to determine emission rate and compliance.

7.6 Unit: Blending and Transfer (Loading)
Control: See Condition 7.6.2

7.6.1 Description

Any of the various products produced at the refinery may be shipped out by tank truck, tank car or barge. Vapors of highly volatile products or certain HAPs (i.e. benzene) are required to be controlled.

The control device for barge loading is only on the station that loads benzene. It cannot control emissions resulting from gasoline loading.

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
48	333	Barge Loading	Vapor Combustor
49	334	Santa Fe LPG and Racing Gasoline Tank Car Loading Rack	Submerged Loading Pipe for Racing Gasoline
50	335	Fuels Transport Loading Rack	Enclosed Flare
51	337	ICG Tank Car Loading Rack	Submerged Loading Pipe
52	338	Solvent Truck Loading Rack	Submerged Loading Pipe
53	335	Two Ethanol Storage Tanks (335TK-5 A/B)	Submerged Loading Pipe
54	335	Gasoline Additive Storage Tank (335TK-401)	Submerged Loading Pipe

7.6.3 Applicability Provisions and Applicable Regulations

a. The refinery=s barge loading operations are subject to the following requirements.

i. A. When loading benzene the operation is subject to 40 CFR 61 Subpart BB, Benzene Transfer Operations. The specific standard is 40 CFR 61.302(b), which requires a control device that reduces benzene emission by 98 weight percent. Section 61.302(e) requires that the marine vessels be vapor tight.

B. Materials other than benzene may be loaded pursuant to this federal rule.

ii. A. Gasoline and crude oil loading are subject to 35 IAC 218 Subpart GG. This rule requires use of a control device if gasoline or crude oil are loaded between May 1 and September 15. Since this barge operation is not equipped with a control device for gasoline or crude oil loading, no gasoline or crude oil may be loaded between May 1 and September 15. See Condition 7.6.4(e) for loading of gasoline between September 16 and April 30 of the following year.

B. Materials other than gasoline or crude oil may be loaded pursuant to this state rule.

b. The Santa Fe LPG loading rack when loading LPG is not subject to any specific emission standards. There are typically no emissions during the loading itself, but a small amount of material that was between the valves may evaporate when disconnected.

c. The fuels transport loading rack is subject to the following requirements.

i. When loading gasoline the operation is subject to 40 CFR 63.650 (Petroleum Refinery NESHAP), which in turn requires compliance with certain provisions of 40 CFR 63 Subpart R, Gasoline Terminals (' 63.420 thru 63.429). The specific emission standard for the loading racks is contained in ' 63.422(b) which limits emissions to 10 mg of total organic compounds per liter of gasoline loaded. The tank trucks loaded must meet vapor-tight requirements described in 40 CFR 63.425. The equipment leak provisions (i.e. for pumps and valves) is covered in Section 7.8 under Fugitive Emissions.

ii. When loading gasoline the operation is subject to 35 IAC 218.582(a)(i) which limits emissions to 80 mg of VOM per liter of gasoline loaded. Compliance with Condition 7.6.3(c)(i) shall be deemed compliance with this requirement.

iii. Other fuels such as diesel oil or aviation fuel may be loaded without use of the control device.

d. The ICG tank car loading operation and solvent truck loading operation are subject to 35 IAC 218.122(a) which states that no person shall cause or allow the discharge of more than 8 lb/hr of organic material into the atmosphere during the loading of any organic material from the aggregate loading pipes of any loading area having throughput of greater than 40,000 gal/day into any railroad tank car, tank truck or trailer unless such loading area is equipped with submerged loading pipes. All three operations have these submerged loading pipes. The Sante Fe loading rack when loading racing gasoline is not subject to this requirement because throughput is less than 40,000 gal/day.

e. The two ethanol frac tanks (335 TK-5A/B) and the gasoline additive tank (335 TK-401) are subject to a NSPS, 40 CFR 60, Subpart Kb. However, due to the size and vapor pressure of the contents, the tanks are only subject to the recordkeeping requirements of 40 CFR 60.116b(b) and (c).

7.6.4 Non-Applicability of Regulations of Concern

a. The barge terminal is not subject to the MACT standard in the NESHAP for Marine Tank Vessel loading Operations [40 CFR 63.562(b)] because the substantive parts of the standard do not apply to existing sources with annual HAP emissions of less than 10 tons of an individual HAP and 25 tons of total HAPs, i.e., Group 2 sources. [40 CFR 63.560(a)] The barge terminal is not subject to the RACT standards in Subpart Y [40 CFR 63.562(c) and (d)] because the standard does not apply to sources with an annual throughput of less than 10 million barrels of gasoline and 200 million barrels of crude oil. [40 CFR 63.560(b)(1)] Source is defined as the marine terminal only.

b. Unit 122, UDEX, produces benzene, toluene, xylene and hexane, all of which are HAPs. Therefore, the UOEX Unit is subject to 40 CFR 63 Subpart F, G and H (HON Rules). These rules have control requirements for loading if certain transfer racks loads HAP containing materials with a rack-weighted average vapor pressure greater than or equal to 1.5 psia (definition of Group 1 transfer rack in 40 CFR 63.111). The vapor pressures of the HAP-containing materials loaded through the ICG tank car loading rack and solvent tank car loading rack have rack-weighted average vapor pressures on an annual basis of less than 1.5 psia and therefore they are Group 2 transfer racks which are not subject to HON rule control requirements.

The HON rule does not apply to marine vessel loading.

c. The Sante Fe loading rack when loading racing gasoline has a throughput of less than 20,000 gal/day and therefore pursuant to the definition of 40 CFR 63.641 it is a Group 2 gasoline loading rack. As such, it is not required to meet the requirements of 40 CFR 63.650.

d. The two ethanol frac tanks (335 TK-5 A/B) and the gasoline additive tank (335 TK-401) are not subject to 35 IAC 218.119, 121 or 122 because the size of the tanks are less than 40,000 gallons and/or the vapor pressure is less 1.5 psia. Although not required, the four tanks are equipped with submerged loading pipes.

e. For the marine terminal, the control requirements of 35 IAC 218.762(b) and (c) do not apply from September 16 of one year through April 30 of the following year.

7.6.5 Operating and Control Requirements

a. The barge loading operation shall be operated to maintain its current status as a Group 2 marine vessel terminal pursuant to the definition in 40 CFR 63.641, that is, maintain HAP emissions from barge loading to less than 10 tons of an individual HAP and 25 tons of combined HAPs per year. The barge loading operation shall also be operated with an annual throughput of less than 10 million barrels of gasoline and 200 million barrels of crude oil.

b. The ICG tank car loading rack and solvent tank car loading rack shall each be operated with a rack-weighted annual average vapor pressure of HAP-containing materials loaded of less than 1.5 psia so that they maintain their status as Group 2 transfer racks.

c. The Santa Fe loading rack when loading racing gasoline shall have a throughput of less than or equal to 20,000 gal/day, calculated as an average each calendar month, in order to maintain its status as a Group 2 gasoline loading rack.

d. The control equipment listed in Condition 7.6.2 shall be operated to meet the required emission reduction requirements specified in Condition 7.6.3(a) and (c).

7.6.6 Emission Limitations

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

Throughput and emissions from the two affected ethanol frac tanks (combined) shall not exceed the following limits:

Throughput		VOM Emissions	
(Gal/Mo)	(Gal/Year)	(Ton/Mo)	(Ton/Year)
7.1×10^6	56.14×10^6	1.24	3.72

Vapor pressure of the material in the gasoline additive tank (335 TK-401) shall not exceed 0.05 psia and VOM emissions shall not exceed 0.1 ton/yr.

These limits are based on the information submitted in the construction permits.

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 Permits 92010070 and 97050098, 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].

7.6.7 Testing Requirements

a. Upon request by the Illinois EPA, the VOM or HAP destruction efficiency of the vapor combustor on the barge loading operation or the flare on the fuels transport loading rack shall be tested within 90 days using accepted USEPA testing methodology.

b. All barges that load benzene shall be tested for vapor tightness using EPA Method 21 as described in 40 CFR 60, Appendix A or otherwise comply with the provisions of 40 CFR 61.302(e).

c. All transport tank trucks that load gasoline shall provide certification that they have been tested for vapor tightness annually using USEPA Method 27, as described in 40 CFR 60, Appendix A, as required by 40 CFR 63.425(e) and 35 IAC 218.584(a)(6).

d. Any new material loaded for which the vapor pressure or HAP content is not known and which could change a loading area from a Group 2 to Group 1 status shall have its vapor pressure measured prior to loading.

7.6.8 Monitoring Requirements

a. The temperature in the combustion chamber of the vapor combustor on the barge loading operation shall be monitored. [40 CFR 61.303(a)(1)]

b. The presence of a flame in the enclosed flare on the gasoline loading rack shall be monitored. [40 CFR 63.427(a)(4)]

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 loading operation to demonstrate compliance with Conditions 5.5.1, 7.6.3, 7.6.5 and 7.6.8, pursuant to Section 39.5(7)(b) of the Act:

a. Barge dock vapor combustor combustion chamber temperature;

b. Presence of a pilot flame in the fuels loading rack enclosed flare;

c. If the vapor combustor combustion chamber temperature is not in its normal operating range or a pilot flame is not present, records must be kept demonstrating that materials for which a control device is required were not being loaded;

d. Throughput of all materials (gal/or lb/mo);

e. i. Documents that verify that all gasoline trucks loaded underwent annual certification pursuant to 40 CFR 63.425 and 35 IAC 218.584 and were shown to be vapor tight an carry the proper sticker. These tests include: Method 27, Internal Vapor Valve, Leak Detection Test, Nitrogen Press Decay Field Test, and Continuous Performance Pressure Decay Test;

ii. Documents using Method 21 on annual vapor tightness testing for barges loaded with benzene at the barge dock as required by 40 CFR 61.302(e). [40 CFR 61.305(h)]

f. VOM emissions (lb/mo);

g. VOM emissions from the two ethanol frac tanks to verify compliance with Condition 7.6.6; and

h. Annual HAP emissions from barge loading operations to verify that barge loading remains a Group 2 marine vessel terminal as required by Condition 7.6.5(a).

i. Rack-weighted average vapor pressure of materials loaded at the ICG tank truck loading rack and solvent tank truck loading rack (psia), calculated separately.

j. Records required by the Organic Liquid Storage Vessel NSPS (40 CFR 60 Subpart Kb) recordkeeping requirements for two ethanol frac tanks and gasoline additive tank. [40 CFR 60.116(b) and (c)]

7.6.10 Reporting Requirements

The Permittee shall provide the Illinois EPA, Compliance Section, with the following information relating to an affected loading operation, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of any deviations from applicable emission limitations, and any corrective actions or preventive measures taken:

a. Semi-annual reports as required by 40 CFR 63.428(g);

b. Quarterly reports required by 40 CFR 61.305(f); and

c. Within 30 days, a report identifying any exceedance of Conditions 7.6.3(a) or (c), 7.6.6; the barge loading operation becoming a Group 1 marine terminal; the Santa Fe racing gasoline loading rack becoming a Group 1 gasoline loading rack; or the ICG solvent tank loading operation or the solvent truck loading operation becoming a Group 1 HON transfer rack.

7.6.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.6.12 Compliance Procedures

a. VOM emissions shall be calculated using AP-42 emission factors for marine loading, truck loading, and railcar loading.

b. Emissions (lb/mo) = Emission Factor (lb/gal) x Throughput or Amount Loaded (gal/mo)

c. For loading operations which have control equipment expressed as a percentage control efficiency,

emissions calculations may be adjusted based on the emission test results for VOM reduced by the control device.

d. For loading operations which have the control standard expressed as an emission rate per volume (e.g., mg/liter), emissions calculations shall be calculated as the most recent test value emission rate times volume throughput.

e. Emissions from the ethanol frac tanks shall be calculated using the USEPA TANKS 4.0 program.

7.7 Unit: Gas Recovery System and Flares
Control: None

7.7.1 Description

The Flare System is a safety device that collects and disposes of releases of process gas from safety relief valves, test instruments and monitors, waste process gas and blowdown, and gases collected via vents and drains during depressurization of vessels or equipment in preparation for turnaround or maintenance. The gases that are collected are usually of sufficient quantity that most of it may be compressed and recovered and then used in heaters and boilers after passing through amine absorbers to remove H_2S (See Section 7.5). The excess amount that cannot be compressed and recovered is sent to a flare.

This section does not include the enclosed flare that is used as a control device for fuels transport loading (See Section 7.6). It also does not include the flare on the alkylation unit (See Section 7.4).

Except for the flare itself, which has a flame that discharges to the ambient air, the piping systems to the flare, including the gas recovery system, do not have open vents.

Although the flares are stated to have no control equipment, they are equipped with a system for using steam (i.e., steam-assisted) to assure more complete combustion and therefore are defined as smokeless.

7.7.2 List of Emission Units and Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Emission Control Equipment
55	844	North Refinery Flare Gas Recovery System which includes Compressors 844GB-403A/B and Flare Stack (844C-1)	None
56	844	South Refinery Flare Gas Recovery System which includes Compressor 844GB-401 and Flare Stack (844C-2)	None

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Emission Control Equipment
57	844	South Refinery Flare Gas Recovery System and Flare Stack (844C-3)	None
58	844	Needle Coker Flare Gas Recovery System which includes Compressors 844GB-402 A/B and Flare Stack (844C-4)	None

7.7.3 Applicability Provisions and Applicable Regulations

In addition to the applicable regulations identified in Section 5, this unit is subject to the following provisions and regulations.

a. An “affected flare” for the purposes of these unit-specific conditions, is a smokeless flare identified in Condition 7.7.2 that is used to safely destruct releases from safety relief valves, vapor blowdown systems, etc.

b. Pursuant to 35 IAC 218.143, 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%.

c. Malfunction and Breakdown Provisions

In the event of a malfunction or breakdown of a flare gas recovery compressor, the Permittee is authorized to continue operation of the units vented to the flare gas recovery system in violation of the applicable requirement of 35 IAC 201.149, as necessary to prevent risk of injury to personnel or severe damage to equipment. The gases that are not compressed so that they can be used as fuel must be sent to the flare unless the capacity of the flare system is exceeded. This authorization is subject to the following requirements:

i. The Permittee shall repair the damaged feature(s) of the compressor or remove the units vented to the flare gas recovery system from active service as soon as practicable. This shall be accomplished within three days unless the feature(s) can not be repaired within three days and the units vented to the flare gas recovery system can not be removed from active service within three days, and the Permittee obtains an extension, for up to seven additional days, from the Illinois EPA. The request for such an extension must document that repair parts are unavailable and specify a schedule of actions the Permittee will take that will assure the feature(s) will be repaired or the units vented to the flare gas recovery system will be shut down as soon as practicable.

ii. The Permittee shall fulfill the applicable recordkeeping and reporting requirements of Conditions 7.7.9(b) and 7.7.10(a).

7.7.4 Non-Applicability of Regulations of Concern

The four flares (Permit Emission Unit Nos. 55-58) are not subject to the performance and monitoring requirements of 40 CFR 63.11 because each of the flares is preceded by a fuel gas recovery system. Pursuant to 40 CFR 63.141, gaseous streams that are not routed to a fuel gas system do not qualify as miscellaneous process vents under the Refinery NESHAP.

7.7.5 Control Requirements

None

7.7.6 Emission Limitations

In addition to Condition 5.2.2, the affected needle coker flare is subject to the following:

	Emissions (Tons/Year)
VOM	9.9
CO	29.9
SO_2	0.4
PM	0.2

These limits are based on the maximum operation. 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 Construction Permit 83010013, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned Construction 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 Operating Requirements

a. Each flare shall be equipped with an auto ignition system.

b. The Permittee shall perform preventative maintenance on the affected compressors in order to minimize the4 likelihood of a malfunction and expedite repairs through the use of overtime, rushed delivery of parts, and other similar measures in order to minimize the length of a malfunction.

7.7.8 Monitoring Requirements

The presence of each affected flare=s pilot flame shall be monitored using a thermocouple or other equivalent device to detect the presence of a flame.

7.7.9 Recordkeeping Requirements

a. The Permittee shall maintain the following records so as to allow the Agency to verify compliance with the requirements of Condition 7.7.7 and 7.7.8.

i. Date and duration of any time when the pilot flame monitoring equipment of an affected flare was not in operation, with explanation;

ii. Date and duration of any time when there was no pilot flame present at an affected flare, with explanation.

b. Records for Malfunctions and Breakdowns of Recovery Gas compressors

The Permittee shall maintain records, pursuant to 35 IAC 201.263, of continued operation of the units vented to the flare gas recovery system during malfunctions and breakdown of the flare gas recovery compressor, 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 units vented to the flare gas recovery system 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 allowable emission levels during malfunction/breakdown.

c. Emissions information to verify compliance with Condition 7.7.6.

7.7.10 Reporting Requirements

a. Reporting of Non-Compliance

The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance of an affected flare 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:

If all of the pilot flames on a flare are extinguished and at least one of them is not relit within three hours, a notification shall be sent that includes:

i. Duration of the possible exceedance;

ii. An estimate of the amount of emissions in excess of the applicable standard;

iii. A description of the cause of the possible exceedance; and

iv. When compliance was reestablished.

b. Reporting of Malfunctions and Breakdowns for the Flare Gas Recovery Compressor

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 the units vented to the flare gas recovery system subject to Condition 7.1.3(c) during malfunction or breakdown of the associated flare gas recovery compressor.

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 units vented to the flare gas recovery system 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 units vented to the flare gas recovery system were 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 units vented to the flare gas recovery system will be taken out of service.

7.7.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.7.12 Compliance Procedures

Compliance with the operating requirements of Condition 7.7.3 and 7.7.6 is assured through proper operation of

each affected flare, i.e., the presence of a flame, as demonstrated by the monitoring, recordkeeping and reporting requirements of Conditions 7.7.8, 7.7.9, and 7.7.10.

7.8 Unit: Fugitive Emissions
Control: LDAR Program

7.8.1 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.

7.8.2 List of Emission Units and Pollution Control Equipment

Equipment in organic HAP service includes various pumps, compressors, relief valves, sampling connections, valves, and connectors.

7.8.3 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 (' 63.648(a)) references the provisions of 40 CFR 60 Subpart VV.)

b. In an effort to streamline recordkeeping requirements, and account for all possible operating scenarios, all affected petroleum refining process units are considered to be in organic HAP service and calculation of percentage leaking equipment is done on a source-wide basis.

c. Each affected petroleum refining process unit is also subject to 35 IAC 218.445-452.

d. Unit 122 (the UDEX unit) is subject to the equipment leak requirements of the HON rule, 40 CFR 63 Subpart H (' 63.160-182). These requirements are more stringent than the previously cited 40 CFR 60 Subpart VV and 35 IAC 218.445-452, and therefore compliance with 40 CFR 63 Subpart H shall be deemed compliance with 40 CFR 60 Subpart VV and 35 IAC 218.445-452.

e. Unit 120 (HF Alkylation) and Unit 103 (Gasoline Hydrotreator) are subject to 40 CFR 60 Subpart GGG, NSPS for Equipment Leaks in Petroleum Refineries.

f. Process drains in Units 103, 119, and 121 are subject to 40 CFR 60 Subpart QQQ, NSPS for VOM Emissions from Petroleum Refinery Wastewater Systems.

g. With these various multiple and intersecting requirements, the Permittee has prepared two tables outlining applicability of the various programs 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 7.8.3 (a) through (f). Table 2 lists the leak standard for various pieces of equipment (pumps, valves, compressors, etc.) and frequency of monitor, with a final column listing the most stringent standard. The most stringent may be a hybrid of two programs, for instance one requiring more frequent monitoring and another having a definition of a leaking component at a lower level. Except as noted in Table 2 of Attachment 2, Permittee shall comply with the most stringent requirements identified for each unit as identified in Attachment 2.

7.8.4 Non-Applicability of Regulations of Concern

Pursuant to 40 CFR 63.640(p), equipment leaks that are also subject to the provisions of 40 CFR 60 parts 60 and 61 are required only to comply with the provisions of 40 CFR 63 Subpart CC.

7.8.5 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 7.8.5(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 7.8.8(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 7.8.5(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. Currently, the Permittee only utilizes flares to control fugitive emissions. Because there are recovery devices prior to the flares for all units except Unit 120, those flares are not required to comply with 40 CFR 63.11.

d. The above listed control requirements of Conditions 7.8.5(a) through (c) are for equipment subject to 40 CFR 63 Subpart CC (60 Subpart VV) as identified in Attachment 2. For equipment subject to 40 CFR 63 Subpart H, see that rule. The requirements are similar but may vary.

7.8.6 Emission Limitations

Specific emission limitations that include emissions from fugitive components associated with an emission unit are included in the unit specific sections of the permit.

7.8.7 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 7.8.8(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)].

c. Operating requirements of Conditions 7.8.7(a) and (b) are for equipment subject to 40 CFR 63 Subpart CC (60 Subpart VV). For equipment subject to 40 CFR 63 Subpart H, see that rule. The requirements are similar but may vary.

7.8.8 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 7.8.8(f). [40 CFR 60.482-2(c)]

b. Pressure Relief Devices in Gas/Vapor Service

Pressure relief devices subject to the requirements of Condition 7.8.7(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

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 7.8.8(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 7.8.8(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 7.8.8(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 7.8.8(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 7.8.8(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 7.8.5(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.

g. The inspection and monitoring requirements of Conditions 7.7.8(a) through (f) are for equipment subject to 40 CFR 63 Subpart CC (60 Subpart VV). For equipment subject to 40 CFR 63 Subpart H, see that rule. The requirements are similar but may vary.

7.8.9 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 7.8.8(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;

vi. The signature of the owner or operator (or designate) whose decision it was that repair could not be effected 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 7.8.8(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;

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 7.8.7(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. The recordkeeping requirements of Conditions 7.8.9(a) through (h) are for equipment subject to 40 CFR 63 Subpart CC (60 Subpart VV). For the UDEX Unit (No. 122) which is subject to 40 CFR 63 Subpart H, see that rule. The requirements are similar but may vary.

7.8.10 Reporting Requirements

The Permittee shall submit semiannual reports to the Illinois EPA Compliance Section. This 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. 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); and

vii. The facts that explain each delay of repair, and where appropriate, why a process unit shutdown was technically infeasible.

f. Dates of process unit shutdowns which occurred within the semi-annual reporting period.

g. The reporting requirements of Condition 7.8.10(a) through (f) are for equipment subject to 40 CFR 63 Subpart CC (60 Subpart VV). For the UDEX Unit (No. 122) which is subject to 40 CFR 63 Subpart H, see that rule. The requirements are similar but may vary.

7.8.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.8.12 Compliance Procedures

Compliance with the control, operating, and inspection and monitoring requirements of Condition 7.8.5, 7.8.7, and 7.8.8 shall be demonstrated by the recordkeeping and reporting requirements of Condition 7.8.9 and 7.8.10.

7.9 Unit: Separators
Control: Covers

7.9.1 Description

The Lemont refinery has two sets of oil water separators. The north plant has two parallel plate separators with covers. The south plant has corrugated plant separators with covers, an expandable bladder and replacement-type carbon adsorbers. The south plant separators no longer functions as an oil-water separator; separation will occur at the two process water tanks (see Section 7.2). The separator functions as part of an unburied sewer line.

The water from the separators is a Group 2 wastewater stream pursuant to the definition in 40 CFR 63.641.

7.9.2 List of Emission Units and Air Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Emission Control Equipment
59	844	Nos. 4 and 5 North Plant Oil-Water Separators (844-1)	Covers
60	844	No. 5 South Plant Oil-Water Separators (844-2)	Cover, Bladder Tank, Carbon Adsorber

7.9.3 Applicability Provisions and Applicable Regulations

a. An “affected oil-water separator” for the purpose of these unit-specific conditions is a unit in which a water stream containing oil enters a device and two streams exit, one rich in oil and the other a wastewater stream with a much lower oil content. The units affected are listed in Condition 7.9.2.

b. All affected separators are subject to 35 IAC 218.443. See Condition 5.2.3(c).

c. The south plant separator vessel is subject to NSPS, 40 CFR 60, Subpart QQQ for VOM emissions from petroleum refinery wastewater systems: the south plant separator shall comply with the standard for unburied sewer lines in 40 CFR 60.692-2(c).

7.9.4 Non-Applicability of Regulations of Concern

The Petroleum Refinery Wastewater Systems NSPS (40 CFR 60 Subpart QQQ) is not applicable to the North Plant oil-water separator.

7.9.5 Control Requirements, Production Limits and Work Practices

The oil-water separator shall be operated with the covers in place at all times except during inspection and maintenance.

7.9.6 Emission Limitations

In addition to Condition 5.2.2, the affected No. 5 South Plant oil-water separator is subject to the following:

Emissions from the affected No. 5 south plant oil-water separator shall not exceed the following limits [T1R]:

Process Water Throughput		VOM Emissions	
(gal/hr)	(gal/yr)	(lb/hr)	(ton/yr)
90,000	7.9×10^8	1.0	4.4

These limits are based on the maximum throughput.

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).

The above limitations were established in Permit 89050016, 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, the separator is two vessels in parallel and the original permit was for the flow rate of only one of the vessels. The flow rate was doubled but emissions did not change.

7.9.7 Inspection Requirements

Semi-annually inspect the South Plant oil-water separator joints, seals, and other emission interfaces for indications of cracks, gaps, or other problems that would result in VOC emissions [40 CFR 60.692-2(c)].

7.9.8 Monitoring Requirements

The carbon adsorber shall be equipped with a OM analyzer which measures VOM concentration of the adsorber exhaust. The concentration may be expressed as % LEL.

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 each affected oil-water separator to demonstrate compliance with Conditions 5.5.1 and 7.9.6, pursuant to Section 39.5(7)(b) of the Act:

a. For the south plant separator, the following NSPS records (40 CFR 60.697):

   i. Dates semi-annual inspections performed.

   ii. The location, date and corrective action when a problem is identified in required inspections that would result in VOM emissions.

   iii. Continuous reading of the VOM outlet concentration of the carbon adsorber.

b. For both separators:

   i. Flow rate to separators (gal/day).

   ii. VOM emissions (lb/mo).

7.9.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of an affected separator with the following permit requirements, 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. Failure to perform semi-annual inspections required by Condition 7.9.7.

b. Failure to repair cracks, gaps or other problems detected during inspections as soon as practicable but no longer than 15 calendar days after identification except as provided in 40 CFR 60.692-6.

c. Each 3-hours of operation of the south plant corrugated plate separator during which the average VOM concentration level or reading of organics in the exhaust gases from the carbon adsorber is more than 20% greater than the design exhaust gas concentration.

7.9.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.9.12 Compliance Procedures

a. Compliance for the North Plant oil-water separators are assured by use of the covers.

b. Compliance for the South Plant oil-water separator is assured through the use of covers and through the periodic inspections for visible gaps, cracks or other problems in joints, seals and other emission interfaces.

c. VOM emissions (after covers) = 0.2 lb VOM/1,000 gal x flow rate (gal/day).

7.10 Unit: UDEX Unit
Control:

7.10.1 Description

The UDEX unit is primarily used to extract aromatic materials from refinery streams, although one material is not an aromatic (hexane/heptane). Although there are no open vents from the process, this unit is discussed separately because it is subject to some rules that do not apply to the remainder of the refining process. These rules are collectively called the HON Rule for Hazardous Organics NESHAP and include 40 CFR 63 Subparts F, G, and H plus the general provisions of the NESHAP, Subpart A. In general, process units are subject to the HON if they manufacture as a product or co-product one or more the HAPs in Table 2 of Subpart F. That table includes benzene, toluene, xylene and hexane which are produced by this unit. Specific equipment potentially subject to specific HON requirements include certain process vents, storage vessels, transfer racks, heat exchange systems, wastewater streams, pumps, compressors, pressure relief devices, open-ended valves or lines, valves, and connectors.

Two process heaters that are part of this unit are listed in Section 7.1.

7.10.2 List of Emission Units and Air Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Emission Control Equipment
61	122	UDEX Unit	None - No Open Vents

7.10.3 Applicability Provisions and Applicable Regulations

a. An “affected chemical manufacturing unit” for the purpose of these unit specific conditions is a process in which one or more chemicals listed in Table 2 of 40 CFR 63 Subpart F is produced. This process is identified in Condition 7.10.2 but specific equipment in the process is not identified.

b. The UDEX unit is subject to 40 CFR 63 Subpart F, G, and H. The applicability for various requirements is as follows:

i. The heat exchange system requirements of 40 CFR 63.104 are applicable.

ii. The maintenance wastewater requirements of 40 CFR 63.105 are applicable.

iii. The process vent provisions of 40 CFR 63.113-118 are not applicable because there are no open process vents.

iv. The storage vessel provisions of 40 CFR 63.120-123 are applicable because the storage tanks are Group 1 storage vessels which require no control. Storage vessels for materials in this unit are included in Section 7.2. One storage vessel is a Group 2 vessel as noted in Attachment 1.

v. Except for the recordkeeping requirements of 40 CFR 60.130(f), the transfer operations provisions of 40 CFR 63.126-130 are not applicable because the materials being transferred classify them as Group 2 transfer operations which do not require control.

vi. The process wastewater provisions of 40 CFR 63.132-145 are not applicable because the wastewater streams are classified as Group 2 wastewater streams.

vii. The leak inspection provisions of 40 CFR 63.148 and Subpart H are applicable but are addressed in Section 7.8, which covers all fugitive emission requirements.

viii. Although control technology and monitoring requirements do not apply to Group 2 units as stated previously, certain recordkeeping requirements to verify that a unit is classified as Group 2 unit are applicable.

7.10.4 Non-Applicability of Regulations of Concern

N/A

7.10.5 Control Requirements

None

7.10.6 Emission Limitations

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

There are no specific emission limitations for this unit.

7.10.7 Operating Requirements

Startup, Shutdown and Malfunction (SSM) Plan

The Permittee is required to have a written startup, shutdown, and malfunction (SSM) plan for the UDEX unit on site under 40 CFR 63.6(e)(3).

The SSM Plan and any revision to that plan is incorporated by reference and is enforceable as a term and condition of this permit.

Revisions to the SSM Plan are automatically incorporated by reference into this permit and do not require a permit revision.

7.10.8 Monitoring Requirements

The equipment leaks monitoring provisions are discussed in Section 7.8.

7.10.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected UDEX unit to demonstrate compliance with Conditions 5.5.1 and 7.10.3, pursuant to Section 39.5(7)(b) of the Act:

a. Records that demonstrate that emission units classified as Group 2 units continue to maintain that status.

b. Records required by 40 CFR 63.104(f)(1) which relate to leak detection and repair of components in which a leak is detected.

c. Records required by 40 CFR 63.105(e) which describe procedures for management of wastewater.

7.10.10 Reporting Requirements

a. The Permittee shall promptly notify the Illinois EPA, Compliance Section, of noncompliance of the affected UDEX 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:

N/A

b. The Permittee shall submit any semi-annual reports required by 40 CFR 63.104(f)(2), 63.152(c), and

63.182(d) including changes in status of any unit currently a Group 2 unit to a Group 1 unit.

7.10.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.10.12 Compliance Procedures

Performing the required equipment leaks inspections, meeting the heat exchange requirements of 40 CFR 63.104 and maintaining status of units as Group 2 units assures compliance with the regulations.

7.11 Unit: Cooling Towers
Control None

7.11.1 Description

Many refinery processes have condensers (non-contact type) that require cooling water. In these condensers, the cooling water increases in temperature. In order to reduce its temperature so it can be reused the warmed water is sent to a cooling tower. Evaporative losses reduce the temperature of the water to where it can be reused.

Chromium compounds are not used in any of the cooling towers.

7.11.2 List of Emission Units and Air Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Emission Control Equipment
62	420	South Plant Cooling Tower (420E-1)	None
63	420	Alky Cooling Tower (420E-7)	None
64	421	North Refinery Cooling Tower (421E-2)	None
65	421	Needle Coker Cooling Tower (421E-3)	None

7.11.3 Applicability Provisions and Applicable Regulations

a. An “affected cooling tower” for the purpose of these unit-specific conditions, is a cooling tower identified in Condition 7.11.2.

b. Each affected cooling tower is subject to 35 IAC 218.986(d) which states that non-contact process water cooling towers which are subject to the control requirements of 35 IAC 218 Subpart TT shall comply with the following control measures.

i. The owner or operator of a non-contact process water cooling tower shall perform the following actions to control emissions of VOM from such a tower:

A. Inspect and monitor such tower to identify leaks of VOM into the water, as

further specified in Condition 7.11.8(a) below;

B. When a leak is identified, initiate and carry out steps to identify the specific leaking component or components as soon as practicable, as further specified in Condition 7.11.8(b);

C. When a leaking component is identified which:

1. Can be removed from service without disrupting production, remove the component from service;

2. Cannot be removed from service without disrupting production, undertake repair of the component at the next reasonable opportunity to do so including any period when the component is out of service for scheduled maintenance, as further specified in Condition 7.11.8(b);

D. Maintain records of inspection and monitoring activities, identification of leaks and leaking components, elimination and repair of leaks, and operation of equipment as related to these activities, as further specified in Condition 7.11.9.

ii. A VOM leak shall be considered to exist in a non-contact process water cooling water system if the parameters monitored pursuant to Condition 7.11.8(a)(i) are outside of the acceptable ranges established in the source's monitoring program.

c. Cooling towers 420E-1 and 421E-2 are subject to 40 CFR 63 Subpart Q (NESHAP for Industrial Process Cooling Towers) because those towers were using chromium compounds at the time of adoption of the standard. The standard requires the Permittee not to use chromium compounds. See Condition 7.11.7.

7.11.4 Non-Applicability of Regulations of Concern

N/A

7.11.5 Control Requirements

There are no add-on controls but implementation of the inspection/monitoring and repair program in Condition 7.11.8 meets the control requirements of 35 IAC 218.986.

7.11.6 Emission Limitations

In addition to Condition 5.2.2, the affected emission unit(s) are subject to the following:

N/A

7.11.7 Operating Requirements

Chromium compounds shall not be used in any of the cooling towers.

7.11.8 Inspection/Monitoring/Repair Requirements

a. The owner or operator of a non-contact process water cooling tower shall carry out an inspection and monitoring program to identify VOM leaks in the cooling water system. [35 IAC 218.986(d)(3)]

i. The owner or operator of a non-contact process water cooling tower shall submit to the Illinois EPA a proposed monitoring program, accompanied by technical justification for the program, including justification for the sampling location(s), parameter(s) selected for measurement, monitoring and inspection frequency, and the criteria used relative to the monitored parameters to determine whether a leak exists as specified in Condition 7.11.3(b)(ii).

ii. This inspection and monitoring program for non-contact process water cooling towers shall include, but shall not be limited to:

A. Monitoring of each such tower with a water flow rate of 25,000 gallons per minute or more at a petroleum refinery at least weekly and monitoring of other towers at least monthly;
B. Inspection of each such tower at least weekly if monitoring is not performed at least weekly.

iii. This inspection and monitoring program shall be carried out in accordance with written procedures which the Illinois EPA shall specify as a condition in federally

enforceable operating permit. These procedures shall include the VOM background levels for the cooling tower as established by the owner or operator through monitoring; describe the locations at which samples will be taken; identify the parameter(s) to be measured, the frequency of measurements, and the procedures for monitoring each such tower, that is, taking of samples and other subsequent handling and analyzing of samples; provide the criteria used to determine that a leak exists as specified in Condition 7.11.3(b)(ii); and describe the records which will be maintained.

iv. A non-contact process water cooling tower is exempt from the requirements of Conditions 7.11.8(a)(ii) and (iii) if all equipment where leaks of VOM into cooling water may occur is operated at a minimum pressure in the cooling water of at least 35 kPa greater than the maximum pressure in the process fluid.

b. The repair of a leak in a non-contact process water cooling tower shall be considered to be completed in an acceptable manner as follows [35 IAC 218.986(d)(4)]:

i. Efforts to identify and locate the leaking components are initiated as soon as practicable, but in no event later than three days after detection of the leak in the cooling tower water;

ii. Leaking components shall be repaired or removed from service as soon as possible, but no later than 30 days after the leak in the cooling tower water is detected, unless the leaking components cannot be repaired until the next scheduled shutdown for maintenance.

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 each affected cooling tower to demonstrate compliance with Conditions 5.5.1, 7.11.3 and 7.11.8, pursuant to Section 39.5(7)(b) of the Act:

a. Records of inspection and monitoring activity [35 IAC 218.986(d)(5)];

b. Records of each leak identified in such tower, with date, time and nature of observation or measured level of parameter [35 IAC 218.986(d)(5)];

c. Records of activity to identify leaking components, with date initiated, summary of components inspected with dates, and methods of inspection and observations [35 IAC 218.986(d)(5)];

d. Records of activity to remove a leaking component from service or repair a leaking component, with date initiated and completed, description of actions taken and the basis for determining the leak in such tower has been eliminated [35 IAC 218.986(d)(5)];

e. Throughput (million gallons/mo); and

f. VOM emissions (lb/mo).

7.11.10 Reporting Requirements

The Permittee shall submit an annual report to the Illinois EPA, containing the following information pursuant to 35 IAC 218.986(d)(6):

a. The number of leaks identified in each cooling tower;

b. A general description of activity to repair or eliminate leaks which were identified;

c. Identification of each leak which was not repaired within 30 days from the date of identification of a leak in such a tower or the process unit removed from service, with description of the leaks, explanation why the leak was not repaired in 30 days, actions taken to minimize VOM losses prior to elimination of the leak and any actions taken to prevent the recurrence of a leak of this type; and

d. Identification of any periods when required inspection and monitoring activities were not carried out.

7.11.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.11.12 Compliance Procedures

Compliance with the inspection, monitoring and repair requirements of Condition 7.11.8 and the recordkeeping requirement of Condition 7.11.9 shall be deemed compliance with 35 IAC 218 Subpart TT.

VOM emissions shall be calculated using AP-42 Table 5.1-2, 0.7 lbs per million gallons of water x throughput (million gallons per month).

7.12 Unit: Wastewater Treatment Plant
Control:

7.12.1 Description

Much wastewater is generated in a refinery and this water is treated before discharge into the canal.

7.12.2 List of Emission Units and Air Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Emission Control Equipment
66	844	Wastewater Treatment Plant	None

7.12.3 Applicability Provisions and Applicable Regulations

An “affected wastewater treatment plant” for the purpose of these unit-specific conditions is a wastewater treatment plant identified in Condition 7.12.2.

7.12.4 Non-Applicability of Regulations of Concern

a. The affected wastewater treatment plant (WWTP) is not subject to the control requirements of 35 IAC 218 Subpart TT because the maximum theoretical emissions of VOM from units subject to Subpart TT is less than 100 tons per year and the potential to emit VOM emissions is less than 25 tons per year when the emissions from the WWTP are excluded as allowed by 35 IAC 218.980(b)(2)(B).

b. Pursuant to the definition in 40 CFR 63.641, the source has a Group 1 wastewater stream, which must comply with the requirements of 40 CFR 61, Subpart FF, Benzene Waste Operations. These requirements are explained in Condition 5.2.7 under source-wide requirements. The wastewater system itself is not affected.

7.12.5 Control Requirements

None

7.12.6 Emission Limitations

In addition to Condition 5.2.2, the affected wastewater treatment plant is subject to the following:

N/A

There are no specific emission limitations for this unit.

7.12.7 Operating Requirements

None

7.12.8 Inspection Requirements

None

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 wastewater treatment plant (WWTP) pursuant to Section 39.5(7)(b) of the Act:

a. Throughput (gal/day).

7.12.10 Reporting Requirements

N/A

7.12.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.12.12 Compliance Procedures

Emissions shall be calculated using the USEPA WATER8 or SIMS software program.

7.13 Unit: Cold Cleaning Degreasers
Control Doors and Cover

7.13.1 Description

For maintenance purposes several cold cleaning degreasers are used for cleaning parts. The solvent may be sprayed with a fluid stream, but not an atomized spray. The air regulations (35 IAC 211.1310) define a degreaser as "cold" if the solvent is below its boiling temperature.

7.13.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
67	Batch Cold Cleaning Degreasers with Spray	Doors and Covers but No Add-On Controls

7.13.3 Applicability Provisions and Applicable Regulations

a. An “affected batch cold cleaning degreaser” for the purpose of these unit-specific conditions, is a degreaser identified in Condition 7.13.2.

b. The affected batch cold cleaning degreasers are subject to the equipment requirements of 35 IAC 218.182(b) which states that no person shall operate a cold cleaning degreaser unless:

i. The degreaser is equipped with a cover which is closed whenever parts are not being handled in the cleaner. The cover shall be designed to be easily operated with one hand or with the mechanical assistance of springs, counter-weights or a powered system if:

A. The solvent vapor pressure is greater than 2 kPa (15 mmHg or 0.3 psi) measure at 38EC (100EF);

B. The solvent is agitated; or

C. The solvent is heated above ambient room temperature.

ii. The degreaser is equipped with a device for draining cleaned parts. The drainage device shall be constructed so that parts are enclosed under the cover while draining unless:

A. The solvent vapor pressure is less than 4.3 kPa (32 mmHg or 0.6 psi) measured at 38EC (100EF); or

B. An internal drainage device cannot be fitted into the cleaning system, in which case the drainage device may be external.

iii. The degreaser is equipped with one of the following control devices if the vapor pressure of the solvent is greater than 4.3 kPa (32 mmHg or 0.6 psi) measured at 38EC (100EF) or if the solvent is heated above 50EC (120EF) or its boiling point:

A. A freeboard height of 7/10 of the inside width of the tank or 91 cm (36 in), whichever is less; or

B. Any other equipment or system of equivalent emission control as approved by the Illinois EPA and further processed consistent with Section 218.108 of this Part. Such a system may include a water cover, refrigerated chiller of carbon adsorber.

iv. A permanent conspicuous label summarizing the operating procedure is affixed to the degreaser; and

v. If a solvent spray is used, the degreaser is equipped with a solid fluid stream spray, rather than a fine, atomized or shower spray.

c. The affected batch cold cleaning degreasers are subject to the operating procedure requirements of 35 IAC 218.182(a) which states that no person shall operate a cold cleaning degreaser unless:

i. Waste solvent is stored in covered containers only and not disposed of in such manner that more than 20% of the waste solvent (by weight) is allowed to evaporate into the atmosphere;

ii. The cover of the degreaser is closed when parts are not being handled; and

iii. Parts are drained until dripping ceases.

d. The affected batch cold cleaning degreasers are subject to the material requirements of 35 IAC 218.182(c). Section 218.182(c)(1)(B) states that after March 15, 1999, no person shall operate a cold cleaning degreaser with a solvent vapor pressure which exceeds 2.0 mmHg (0.038 psi) measured at 20EC (68°F). Section 218.182(c)(2)(B) states that after

March 15, 2001 no person shall operate a cold cleaning degreaser with a solvent vapor pressure which exceeds 1.0 mmHg (0.019 psi) measured at 20°C (68°F).

7.13.4 Non-Applicability of Regulations of Concern

The affected batch cold cleaning degreasers were initially subject to the NESHAP for Halogenated Solvent Cleaning 40 CFR 63, Subpart T. However, 35 IAC 218.182(c)(1)(B) states that after March 15, 1999 cold cleaning degreasers may not use a solvent with a vapor pressure which exceeds 2.0 mmHg (0.038 psi) and Section 218.182(c)(2)(B) lowers the vapor pressure to 10 mmHg (0.019 psi) effective March 15, 2001 (See Condition 7.13.3(d) above.). Both of these requirements preclude the use of halogenated solvents, as the halogenated solvents regulated by 40 CFR 63 Subpart T all have vapor pressures in excess of the level allowed by 35 IAC 218.182(c). Although 35 IAC 218 Subpart E may be interpreted as not applying to non-VOM solvents (which include some of applicable halogenated solvents), the Permittee has agreed not to use the halogenated solvents regulated by 40 CFR 63 Subpart T in its degreasing booths (See Condition 7.13.7.).

7.13.5 Control Requirements

None

7.13.6 Emission Limitations

N/A

7.13.7 Operating Requirements

The Permittee shall not use <u>any</u> cleaning solvent in the affected degreasers in excess of the vapor pressures identified in Condition 7.13.3(d) [35 IAC 218.182(c)]. The Permittee has greed to include non-VOM solvent in these requirements, although 35 IAC Part 218 typically regulates only VOM containing materials. Compliance with this requirement precludes applicability of 40 CFR 63 Subpart T as all affected halogenated solvent cleaners exceed the applicable vapor pressure requirements.

7.13.8 Inspection Requirements

None

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 batch cold cleaning degreasers to

demonstrate compliance with Condition 7.13.3(b), pursuant to Section 39.5(7)(b) of the Act:

An MSDS listing the type of solvent and the vapor pressure of the each solvent used in any of the batch cold cleaning degreasers.

7.13.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of the affected batch cold cleaning degreasers with the following permit requirements, 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:

Use of a solvent with a vapor pressure higher than allowed by Condition 7.13.3(b) or use of a halogenated solvent regulated by 40 CFR 63 Subpart T.

Note: The reports required by 40 CFR 63.468 have previously been submitted.

7.13.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.13.12 Compliance Procedures

Emissions shall be calculated by a material balance, that is, beginning inventory plus purchases minus ending inventory and minus credit for solvent sent offsite for recovery.

7.14 Unit Catalytic Reforming Units
Control None

7.14.1 Description

The term catalytic reforming is fairly broad as there are two units called catalytic reformers that do different operations. Overall both convert lower grade materials into gasoline blend stocks. Catalytic Reformer #1, Unit 123, also includes a desulferizer and some of the product goes to other units for further processing as well as gasoline blending. Catalytic Reformer #2, Unit 116, sends all of its product to gasoline blending.

Other than fuel combustion, there are no vents releasing air contaminants during normal processing operation. However, periodically coke deposits must be removed from the catalyst in a step called regeneration. There are emissions, including HAP emissions, during the regeneration process. The regeneration process is infrequent and classified as a startup operation. Both units include multiple process heaters that are included in Section 7.1.

7.14.2 List of Emission Units and Air Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Emission Control Equipment
68	123	Naphtha Desulferizer/Catalytic Reformer #1	None
69	116	Catalytic Reformer #2	None

7.14.3 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 7.14.2. There are no open vents when processing petroleum.

b. As noted in Condition 5.2.5(a) these affected units may be subject to a Refinery NESHAP, 40 CFR 63 Subpart UUU, when the rule is final and effective. 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 7.8.

c. Startup (Regeneration) Provisions

The Permittee is authorized to regenerate the catalyst which results in emissions that do not occur during petroleum processing. The Permittee has affirmatively demonstrated that all reasonable efforts have been made to minimize startup emissions, duration of individual startups, and frequency of startups. This authorization is subject to the following:

i. The Permittee shall take the following measures to minimize startup emissions: Implementation of established startup procedures.

ii. Depressurization of the affected process units shall meet the requirements of 35 IAC 218.444 [See Condition 5.2.3(d)].

iii. The Permittee shall fulfill the applicable recordkeeping requirements of Condition 7.14.9(a).

7.14.4 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 units are not subject to Subpart GGG, Equipment Leaks Provisions, because the units were constructed prior to January 4, 1983 and have not been modified.

c. The affected catalytic reforming units are not subject to Subpart QQQ, Petroleum Refinery Wastewater Systems, because the units were constructed prior to May 4, 1987 and have not been modified.

7.14.5 Control Requirements

None

7.14.6 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

7.14.7 Operating Requirements

None

7.14.8 Inspection Requirements

None

7.14.9 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 7.14.3(c), pursuant to Section 39.5(7)(b) of the Act:

a. Records for Startup (Regeneration of Catalyst)

The Permittee shall maintain the following records, pursuant to Section 39.5(7)(b) of the Act, for each affected catalytic reforming unit subject to Condition 7.14.3(c), which at a minimum shall include the following information for each time a catalytic reforming unit is regenerated:

i. Date and duration of the startup;

ii. A detailed description of the startup, including reason for operation and whether standard procedures were performed;

iii. An explanation why established startup procedures could not be performed, if not performed;

7.14.10 Reporting Requirements

N/A

7.14.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.14.12 Compliance Procedures

Since at the current time there is no emission standard for regeneration, compliance is assumed by following standard regeneration procedure.

7.15 Unit Gasoline Hydrotreater
Control None

7.15.1 Description

In a hydrotreater sulfur, nitrogen and oxygen are removed by a catalytic reaction with hydrogen. There are several hydrotreaters at the refinery but only the Unit 103 gasoline hydrotreater is subject to 40 CFR 60 Subpart QQQ (NSPS for Petroleum Refinery Wastewater System). The other hydrotreaters are listed in Section 5.11 as having no open vents other than the fuel combustion devices covered in Section 7.1.

7.15.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit Number	Permittee Unit Number	Description	Emission Control Equipment
70	103	Gasoline Hydrotreater	None

7.15.3 Applicability Provisions and Applicable Regulations

a. An “affected hydrotreater” for the purpose of these unit-specific conditions, is a hydrotreater identified in Condition 7.15.2.

b. The affected Unit 103 hydrotreater is subject to NSPS, 40 CFR 60 Subpart QQQ for VOM emissions from petroleum refinery wastewater systems.

i. The process drains shall comply with the standard in 40 CFR 60.692-2 or 60.693-1.

ii. Repairs shall be made as soon as practicable, but not later than 15 calendar days after identification, except as provided in 40 CFR 60.692-6. Whenever cracks, gaps or other problems are detected, repairs shall be made as soon as practicable.

7.15.4 Non-Applicability of Regulations of Concern

N/A

7.15.5 Control Requirements

a. i. Process water drains in active service shall be equipped with water seal controls [40 CFR 60.692-2(a)(1)].

ii. As an alternative, process water drains that are inactive may be equipped with caps or plugs [40 CFR 60.692-2(a)(4)].

b. Junction boxes shall be equipped with a cover, which shall have a tight seal around the edge and shall be kept in place at all times, except during inspection and maintenance. The cover may have an open vent pipe which shall be at least 3 feet in length and not exceed 4 inches in diameter [40 CRR 60.692-2(b)(1 and 2)].

c. Sewer lines shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals or other emission interfaces.

7.15.6 Emission Limitations

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

N/A

7.15.7 Operating Requirements

a. Whenever low water levels or missing or improperly installed caps or plugs are identified, water shall be added or first efforts at repair shall be made as soon as practicable, but not later than 24 hours after detection [40 CFR 60.692-2(a)(5)]. Delays beyond 24 hours are permissible if the repair requires a complete or partial refinery or process unit shutdown, in which case the repair shall occur before the end of the next refinery or process unit shutdown [40 CFR 60.692-3].

b. If a broken seal or gap is identified during inspections as required by Condition 7.15.8, first effort at repair shall be made as soon as practicable, but not later than 15 calendar days after the broken seal or gap is identified [40 CFR 60.692-2(b)(3 and 4)]. Delays beyond 15 days are permissible if the repair requires a complete or partial refinery or process unit shutdown, in which case the repair shall occur before the end of the next refinery or process unit shutdown [40 CFR 60.692-6].

7.15.8 Inspection Requirements

a. i. Each drain in active service shall be checked by visual or physical inspection monthly for indications of low water levels or other conditions that would reduce the effectiveness of the water seal controls.

ii. Except as provided in iii to follow, each drain out of active service shall be checked by visual or physical inspection weekly for indications of low water levels or other problems that could result in VOC emissions.

iii. As an alternative to the requirements in ii above, if an owner or operator elects to install a tightly sealed cap or plug over a drain that is out of service, inspections shall be conducted semiannually to ensure caps or plugs are in place and properly installed [40 CFR 60.692-2(a)(2, 3 and 4)].

b. Junction boxes shall be visually inspected semiannually to ensure that the cover is in place and to ensure that the cover has a tight seal around the edge [40 CFR 60.692-2(b)(3)].

c. The portion of each unburied sewer line shall be visually inspected semiannually for indication of cracks, gaps or other problems that could result in VOM emissions [40 CFR 60.692-2(c)(2)].

7.15.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected hydrotreater to demonstrate compliance with Condition 7.15.3(b), pursuant to Section 39.5(7)(b) of the Act:

a. Records for NSPS as required by 40 CFR 60.697

i. For individual drain systems subject to '60.692-2, the location, date and corrective action shall be recorded for each drain when the water seal is dry or otherwise breached, when a drain cap or plus is missing or improperly installed, or other problem is identified that could result in VOC emissions, as determined during the initial and periodic visual or physical inspection.

ii. For junction boxes subject to '60.692-2, the location, date, and correction action shall be recorded for inspections required by '60.692-2(b) when a broken seal, gap, or other problem is identified that could result in VOC emissions.

iii. For sewer lines subject to '60.692-2 and 60.693-1(e), the location, date, and corrective action shall be recorded for

inspections required by ''60.692-2(c) and 60.693-1(e) when a problem is identified that could result in VOC emissions.

7.15.10 Reporting Requirements

The Permittee shall submit semiannual reports of inspections and corrective actions taken as required by 40 CFR 60.698(c).

7.15.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.15.12 Compliance Procedures

Prompt repair as required by the NSPS assures compliance with the requirements.

7.16 Unit Gas Compressors
Control None

7.16.1 Description

Section 7.7 included three gas compressors that compress gases that would be sent to flares if not recovered and sent to the fuel gas systems. This section includes four other compressors in various operating sections of the plant that effectively compress certain process gases produced. These compressors typically have no emissions when operating normally and would not be considered emission units. However, if the compressors incur a malfunction or breakdown in their ability to compress the gases, the gases must be flared as only pressurized gases can be sent to the amine scrubbers (which remove H_2S) and from there to the plant fuel gas system. During malfunction there is no specific emission standard violated but there is a large increase in SO_2 emissions as the gases have not had the H_2S removed. The H_2S is converted to SO_2 in the flare combustion process. NO_x emissions will also increase as a result of the flaring. Some of the uncompressed gases can be compressed by the gas compressors listed in Section 7.7, but those compressors may be capable of handling only a small fraction of the total gas generated by process unit compressor shutdowns.

7.16.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit Number	Permittee Unit Number	Description	Emission Control Equipment
71	113	Coke Gas Compressor (113GB-1)	None
72	212	Wet Gas Compressor (212GB-301)	None
73	212	Two Sales Gas Compressors (212GB-401A and B)	None
74	217	Two Unsaturated Gas Compressors (217GB-1A and B)	None

7.16.3 Applicability Provisions and Applicable Regulations

a. An “affected gas compressor” for the purpose of these unit-specific conditions, is a gas compressor listed in Condition 7.16.2 and under normal circumstances does not emit to the atmosphere.

b. Malfunction and Breakdown Provisions

In the event of a malfunction or breakdown of an affected gas compressor, the Permittee is authorized to continue operation of the units vented to the affected gas compressor system in potential violation of the applicable requirement of 35 IAC 214.301, as necessary to prevent risk of injury to personnel or severe damage to equipment. The gases that are not compressed so that they can be used as fuel must be sent to the flare. This authorization is subject to the following requirements:

i. The Permittee shall repair the damaged feature(s) of the compressor or remove the units vented to the compressor from active service as soon as practicable. This shall be accomplished as soon as possible or within three days unless the feature(s) can not be repaired within three days and the units vented to the compressor can not be removed from active service within three days, and the Permittee obtains an extension, for up to seven additional days, from the Illinois EPA. The request for such an extension must document that repair parts are unavailable and specify a schedule of actions the Permittee will take that will assure the feature(s) will be repaired or the units vented to the compressor will be shut down as soon as practicable.

ii. The operating rate of the units vented to the affected gas compressor shall be reduced within three hours of the malfunction to minimum charge (taking into consideration safe operation of affected units).

iii. The Permittee shall fulfill the applicable recordkeeping and reporting requirements of Conditions 7.16.9(b) and 7.16.10(a).

7.16.4 Non-Applicability of Regulations of Concern

N/A

7.16.5 Control Requirements

None

7.16.6 Emission Limitations

In addition to Condition 5.2.2, the affected emission unit(s) are subject to the following:

N/A

7.16.7 Operating Requirements

The Permittee shall perform preventative maintenance on the affected compressors in order to minimize the likelihood of a malfunction and expedite repairs through the use of overtime, rushed delivery of parts, and other similar measures in order to minimize the length of a malfunction.

7.16.8 Inspection Requirements

None

7.16.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected compressor, pursuant to Section 39.5(7)(b) of the Act:

Records for Malfunctions and Breakdowns of Gas Compressors

The Permittee shall maintain records, pursuant to 35 IAC 201.263, of continued operation of the units vented to the affected gas compressor during malfunctions and breakdown of the compressor, which as a minimum, shall include:

a. Date and duration of malfunction or breakdown;

b. A detailed explanation of the malfunction or breakdown;

c. An explanation why the damaged feature(s) could not be immediately repaired or the units vented to the affected compressor removed from service without risk of injury to personnel or severe damage to equipment;

d. The measures used to reduce the quantity of emissions and the duration of the event;

e. The steps taken to prevent similar malfunctions or breakdowns or reduce their frequency and severity; and

f. The amount of release above normal emission levels during malfunction/breakdown.

7.16.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of noncompliance of an affected

compressor 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 of Malfunctions and Breakdowns for the Gas Compressors

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 the units vented to the affected gas compressors subject to Condition 7.1.3(c) during malfunction or breakdown of the associated flare gas recovery compressor.

a. 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.

b. 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 units vented to the affected gas compressors 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 units vented to the affected gas compressors were reduced in rate or taken out of service.

c. 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 units vented to the affected gas compressors will be taken out of service.

7.16.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.16.12 Compliance Procedures

There are no emissions from these units except during malfunction or breakdown, when the emissions increase from one of the flares.

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 March 22, 2000 (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

Each test specially required under this permit or conducted as the result of a specific request by the Illinois EPA for purposes of determining compliance with permit conditions shall be conducted using standard test methods. Documentation for such required tests shall include the test date, conditions, methodologies, calculations, and test results. Required documentation shall be retained pursuant to the recordkeeping procedures of this permit. Reports of any test results 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

A report summarizing required monitoring 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]:

Monitoring Period	Report Due Date
January - June	September 1
July - December	March 1

The first report due under this provision will cover the monitoring period from the date of issuance of this permit to December 31, 2000, and be due the following 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.

Note that if a specific regulation requires more frequent monitoring reports, that specific requirement must be complied with in place of the above general requirement. For example, 35 IAC 201.405 requires quarterly monitoring reports on FCC opacity and excess emissions.

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

ii. Illinois EPA - Air Regional Field Office

Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

iii. Illinois EPA - Air Permit Section (MC 11)

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

iv. USEPA Region 5 - Air Branch

USEPA (AR - 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 a shielded under Condition 8.1 and as shielded under Condition 8.1 and 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 Act, and any noncompliance with a federally enforceable permit condition constitutes a violation of the CAA. Any permit violation 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)(p)(ii) of the Act]:

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; 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. Any such activity will be performed in accordance with the source's safety and security procedures, provided that such procedures apply to all visitors to the source. Any such activity will be performed in accordance with the source’s safety and security procedures, provided that such procedures apply to all visitors to the source.

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 required by this permit 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 are for the preceding calendar year and shall be submitted no later than May 1 or more frequently as specified in the applicable requirements or by permit condition. The initial compliance certification report filed under this permit shall be for the period from date of issuance (August 10, 2000) to December 31, 2000. The compliance certifications shall be submitted to the Air Compliance Section, Air Regional Field Office, and USEPA Region 5 **B** 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)(l), (n), and (o) of the Act].

10.0 ATTACHMENTS

10.1 Attachment 1 - List of Storage Tanks

TABLE 1-1

Tank No.	Capacity (Gal)	Vapor Pressure[a]	Type[b]	Seal Type	Group 1[c,d]	Year Built
Group A - Crude Oil Storage Tanks						
331TK-204	3.4×10^6	A	EFR	Mech. Shoe/Secondary	Yes	Pre-1973
331TK-300	5.7×10^6	A	EFR	Mech. Shoe/Secondary	Yes	Pre-1973
331TK-301	5.9×10^6	A	EFR	Mech. Shoe/Secondary	Yes	Pre-1973
331TK-303	5.6×10^6	A	EFR	Mech. Shoe/Secondary	Yes	Pre-1973
331TK-304	5.1×10^6	A	EFR	Mech. Shoe/Secondary	Yes	Pre-1973
331TK-305	5.6×10^6	A	EFR	Mech. Shoe/Secondary	Yes	Pre-1973
331TK-306	5.2×10^6	A	EFR	Mech. Shoe/Secondary	Yes	Pre-1973
331TK-307	5.2×10^6	A	IFR	Vapor Mounted Primary	Yes	Pre-1973
331TK-411	23.2×10^6	A	EFR	Mech. Shoe/Secondary	Yes	Pre-1973
Group B - Gasoline and Other Light Distillate Storage Tanks						
331TK-050	554,000	A	CEFR	Liquid Primary/Secondary	Yes	Pre-1973
331TK-092	1.1×10^6	A	IFR	Mech. Shoe	Yes	Pre-1973
331TK-114	2.5×10^6	A	IFR	Liquid Mounted/Secondary	Yes	Pre-1973
331TK-205	3.9×10^6	A	EFR	Mech. Shoe/Secondary	Yes	Pre-1973
331TK-206	3.8×10^6	A	EFR	Mech. Shoe/Secondary	Yes	Pre-1973
331TK-207	3.8×10^6	A	EFR	Mech. Shoe/Secondary	Yes	Pre-1973
331TK-208	3.7×10^6	A	IFR	Vapor Mounted Primary	Yes	Pre-1973
331TK-252	57,500	A	IFR	Vapor Mounted Primary	Yes	Pre-1973
331TK-302	5.6×10^6	A	EFR	Mech. Shoe/Secondary	Yes	Pre-1973
331TK-312	7.3×10^6	A	EFR	Mech. Shoe/Secondary	Yes	1978
331TK-401	2.5×10^6	A	IFR	Vapor Mounted Primary	Yes	Pre-1973
331TK-402	1.3×10^6	A	IFR	Vapor Mounted Primary	Yes	Pre-1973
331TK-403	9.9×10^6	A	EFR	Mech. Shoe/Secondary	Yes	Pre-1973
331TK-404	5.6×10^6	A	EFR	Mech. Shoe/Secondary	Yes	Pre-1973
331TK-405	5.6×10^6	A	EFR	Mech. Shoe/Secondary	Yes	Pre-1974
331TK-406	5.6×10^6	A	CEFR	Mech. Shoe/Secondary	Yes	Pre-1973

Tank No.	Capacity (Gal)	Vapor Pressure[a]	Type[b]	Seal Type	Group 1[c,d]	Year Built
331TK-407	6.0×10^6	A	EFR	Mech. Shoe/Secondary	Yes	Pre-1973
331TK-408	6.0×10^6	A	EFR	Mech. Shoe/Secondary	Yes	Pre-1973
331TK-409	5.7×10^6	A	EFR	Mech. Shoe/Secondary	Yes	Pre-1973
331TK-410	9.7×10^6	A	EFR	Mech. Shoe/Secondary	Yes	Pre-1973
331TK-419	7.0×10^6	C	EFR	Mech. Shoe Primary	Yes	Pre-1973
331TK-425	660,800	A	IFR	Vapor Mounted Primary	Yes	Pre-1973
331TK-426	659,800	A	IFR	Vapor Mounted Primary	Yes	Pre-1973
331TK-428	1.3×10^6	A	IFR	Vapor Mounted Primary	Yes	Pre-1973
31TK-429	1.3×10^6	A	IFR	Vapor Mounted Primary	Yes	Pre-1973
331TK-436	509,700	A	IFR	Vapor Mounted Primary	Yes	1976
331TK-437	1.4×10^6	A	IFR	Vapor Mounted Primary	Yes	Pre-1973
331TK-439	3.1×10^6	A	IFR	Vapor Mounted Primary	Yes	Pre-1973
331TK-480	8.0×10^6	A	IFR	Vapor Mounted Primary	Yes	Pre-1973
331TK-481	9.8×10^6	A	EFR	Mech. Shoe/Secondary	Yes	1973
331TK-482	12.8×10^6	A	EFR	Mech. Shoe/Secondary	Yes	1975
331TK-484	12.7×10^6	A	EFR	Mech. Shoe/Secondary	Yes	1978
331TK-487	5.7×10^6	A	IFR	Vapor Mounted/Secondary	Yes	1993
Group C - Petrochemical Storage Tanks						
331TK-515	611,700	A	IFR	Liquid Mounted/Secondary	HON	Pre-1973
331TK-601	1.5×10^6	A	IFR	Liquid Mounted/Secondary	HON	Pre-1973
331TK-602	172,300	A	IFR	Liquid Mounted/Secondary	HON	Pre-1973
331TK-603	177,300	A	IFR	Liquid Mounted/Secondary	HON	Pre-1973
331TK-604	45,400	A	IFR	Vapor Mounted Primary	HON	Pre-1973
331TK-605	45,400	A	IFR	Vapor Mounted Primary	HON	Pre-1973
331TK-606	45,400	A	IFR	Vapor Mounted Primary	HON	Pre-1973
331TK-607	45,400	A	IFR	Vapor Mounted Primary	HON	Pre-1973
331TK-608	46,100	A	IFR	Vapor Mounted Primary	HON	Pre-1973
331TK-609	45,900	A	IFR	Vapor Mounted Primary	HON	Pre-1973
331TK-610	2.4×10^6	A	IFR	Vapor Mounted Primary	HON	Pre-1973
331TK-611	3.7×10^6	A	IFR	Liquid Mounted/Secondary	HON	Pre-1973
331TK-612	920,500	A	IFR	Liquid Mounted/Secondary	HON	Pre-1973
331TK-613	863,100	A	IFR	Vapor Mounted Primary	HON	Pre-1973
331TK-614	646,800	A	IFR	Vapor Mounted Primary	Yes	Pre-1973
331TK-615	867,000	A	IFR	Liquid Mounted Primary	HON	Pre-1973

Tank No.	Capacity (Gal)	Vapor Pressure[a]	Type[b]	Seal Type	Group 1[c,d]	Year Built
331TK-616	45,400	A	IFR	Vapor Mounted Primary	Yes	Pre-1973
331TK-617	45,400	A	IFR	Vapor Mounted Primary	HON	Pre-1973
Group D - Miscellaneous Floating Roof Storage Tanks						
844TK-003	661,000	A	IFR	Vapor Mounted Primary	Yes	Pre-1973
331TK-211	3.65×10^6	A	IFR	Liquid Mounted Primary	HON	Pre-1973
331TK-433	837,000	A	EFR	Mech. Shoe	Yes	Pre-1973
331TK-434	837,000	A	EFR	Mech. Shoe	Yes	Pre-1973
331TK-435	2.1×10^6	A	EFR	Mech. Shoe/Secondary	Yes	Pre-1973
331TK-438	300,000	A	EFR	Liquid Mounted/Secondary	Yes	Pre-1973
331TK-485	6.6×10^6	A	EFR	Liquid Mounted/Secondary	Yes	1992
331TK-486	6.6×10^6	A	EFR	Liquid Mounted/Secondary	Yes	1992
113TK-401	840,000	B	IFR	Metallic Shoe	Yes	1990
Group E - Petrochemical Storage Tanks						
331TK-501	380,100	A	IFR	Vapor Mounted Primary	Yes	Pre-1973
331TK-502	380,100	A	IFR	Vapor Mounted Primary	Yes	Pre-1973
331TK-503	671,200	A	IFR	Vapor Mounted Primary	HON	Pre-1973
331TK-504	674,200	A	IFR	Liquid Mounted Primary	Yes	Pre-1973
331TK-505	667,800	A	IFR	Liquid Mounted Primary	Yes	Pre-1973
331TK-512	802,800	A	IFR	Vapor Mounted Primary	Yes	Pre-1973
331TK-513	421,000	A	IFR	Vapor Mounted Primary	HON	Pre-1973
331TK-517	571,000	A	IFR	Liquid Mounted Primary	Yes	Pre-1973
331TK-519	240,200	A	IFR	Liquid Mounted Primary	Yes	Pre-1973
Group F - Fixed Roof Storage Tanks						
331TK-004	218,500	C	FR	Not Applicable	No	Pre-1973
331TK-017	62,200	C	FR	Not Applicable	No	1974
331TK-089	68,200	C	FR	Not Applicable	No	Pre-1973
331TK-103	3.7×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-106	3.0×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-107	2.28×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-108	2.30×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-109	2.32×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-110	2.3×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-111	2.3×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-112	2.28×10^6	C	FR	Not Applicable	No	Pre-1973

Tank No.	Capacity (Gal)	Vapor Pressure[a]	Type[b]	Seal Type	Group 1[c,d]	Year Built
331TK-200	3.33×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-201	3.35×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-202	3.36×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-203	3.36×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-209	3.5×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-250	51,700	C	FR	Not Applicable	No	Pre-1973
331TK-251	51,700	C	FR	Not Applicable	No	Pre-1973
331TK-253	22,400	C	FR	Not Applicable	No	1975
331TK-254	54,800	C	FR	Not Applicable	No	Pre-1973
331TK-308	5.12×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-309	5.32×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-310	5.3×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-311	6.5×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-412	11.5×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-414	9.01×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-417	9.11×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-418	9.13×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-416	9.1×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-420	12.8×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-421	2.76×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-422	901,800	C	FR	Not Applicable	No	Pre-1973
331TK-440	1.33×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-476	205,800	C	FR	Not Applicable	No	Pre-1973
331TK-478	63,000	C	FR	Not Applicable	No	Pre-1973
331TK-479	63,000	C	FR	Not Applicable	No	Pre-1973
331TK-506	111,600	A	FR	Not Applicable	No	Pre-1973
331TK-507	112,200	A	FR	Not Applicable	No	Pre-1973
331TK-508	111,300	C	FR	Not Applicable	No	Pre-1973
331TK-509	110,800	C	FR	Not Applicable	No	Pre-1973
331TK-510	707,400	C	FR	Not Applicable	No	Pre-1973
331TK-511	1.2×10^6	C	FR	Not Applicable	No	Pre-1973
331TK-514	585,800	C	FR	Not Applicable	No	Pre-1973
331TK-516	611,700	C	FR	Not Applicable	No	Pre-1973
331TK-518	208,500	C	FR	Not Applicable	No[e]	Pre-1973

Tank No.	Capacity (Gal)	Vapor Pressure[a]	Type[b]	Seal Type	Group 1[c,d]	Year Built
Group G - Pressure Tanks						
331TK-65		D	P	Not Applicable	No	N/A
331TK-66		D	P	Not Applicable	No	N/A
331TK-67		D	P	Not Applicable	No	N/A
331TK-68		D	P	Not Applicable	No	N/A
331TK-69		D	P	Not Applicable	No	N/A
331TK-80		D	P	Not Applicable	No	N/A
331TK-81		D	P	Not Applicable	No	N/A
331TK-90		D	P	Not Applicable	No	N/A
331TK-432		D	P	Not Applicable	No	N/A

[a] A = 2.5 - 11.1 psia
B = 0.5 - 2.5 psia
C = less than 0.5 psia
D = greater than 11.1 psia (pressurized tanks)

[b] EFR = External Floating Roof
IFR = Internal Floating Roof
FR = Fixed Roof
CEFR = Covered External Floating Roof
P = Pressurized Tank

[c] Pursuant to the definition in 40 CFR 63.641, any tank not a Group 1 tank is a Group 2 tank. The definition of Group 1 Tank for Petroleum Refineries is as follows:

Group 1 Storage Vessel means a storage vessel at an existing source that has a design capacity greater than or equal to 177 cubic meters (46,900 gallons) and stored-liquid maximum true vapor pressure greater than or equal to 10.4 kilopascals (1.5 psia) and stored-liquid annual average true vapor pressure greater than or equal to 8.3 kilopascals (1.2 psia) and annual average HAP liquid concentration greater than 4 percent by weight total organic HAP; a storage vessel at a new source that has a design storage capacity greater than or equal to 151 cubic meters (40,000 gallons) and stored-liquid maximum true vapor pressure greater than or equal to 3.4 kilopascals (0.50 psia) and annual average HAP liquid concentration greater than 2 percent by weight total organic HAP; or a storage vessel at a new source that has a design storage capacity greater than or equal to 76 cubic meters (20,000 gallons) and less than 151 cubic meters (40,000 gallons) and stored-liquid maximum

true vapor pressure greater than or equal to 77 kilopascals (11.1 psia) and annual average HAP liquid concentration greater than 2 percent by weight total organic HAP.

[d] The word HON in the Group 1 column indicates a Group 1 storage vessel under the definition in 40 CFR 63.111, the HON rule. Since all of the affected vessels are at an existing source, only the capacity and vapor pressure specifications for a vessel at an existing source will be listed. These are: capacity greater than 151 cubic meters (40,000 gallons) and maximum true vapor pressure greater than 5.2 kilopascals (0.75 psia); capacity between 75 and 151 cubic meters (20,000 - 40,000 gallons) and maximum true vapor pressure greater than 13.1 kilopascals (1.9 psia).

[e] Group 2 pursuant to definition in HON, i.e., not a Group 1 HON storage vessel.

10.2 Attachment 2

Table 1 LDAR Regulatory Applicability By Unit						
Unit	Description	35 IAC 218.447	40 CFR 60 GGG	40 CFR 60 QQQ	40 CFR 63 H	Refinery MACT (via 40CFR60 W)
Unit 103	Gasoline Hydrotreater	Applicable	Applicable	Applicable	Unit not subject to HON	Applicable
Unit 104 (idle)	Isomerization Unit	Not applicable Unit idled, shutdown.	Not applicable Unit idled, shutdown	Applicable	Unit not subject to HON	Not applicable Unit idled, shutdown
Unit 106	Needle Coker - Vacuum Flasher	Applicable	Not applicable Entered "into contractual obligation to construct..." on 9/29/82.	Not applicable Constructed prior to 1987	Unit not subject to HON	Applicable
Unit 107	Needle Coker - Decant Oil Hydrotreater	Applicable	Not applicable Entered "into contractual obligation to construct..." on 9/29/82.	Not applicable Constructed prior to 1987	Unit not subject to HON	Applicable
Unit 108	Needle Coker - Needle Coker Unit	Applicable	Not applicable Entered "into contractual obligation to construct..." on 9/29/82.	Not applicable Constructed prior to 1987	Unit not subject to HON	Applicable
Unit 109	Needle Coker - Hydrogen Unit	Applicable	Not applicable Entered "into contractual obligation to construct..." on 9/29/82.	Not applicable Constructed prior to 1987	Unit not subject to HON	Applicable
Unit 111	Crude Unit	Applicable	Not applicable Constructed before 1/4/83	Not applicable Constructed prior to 1987	Unit not subject to HON	Applicable

Table 1
LDAR Regulatory Applicability By Unit

Unit	Description	35 IAC 218.447	40 CFR 60 GGG	40 CFR 60 QQQ	40 CFR 63 H	Refinery MACT (via 40CFR60 W)
Unit 217	Saturated Gas Plant	Applicable	Not applicable Constructed before 1/4/83	Not applicable Constructed prior to 1987	Unit not subject to HON	Applicable
Unit 112	Fluid Catalytic Cracking Unit	Applicable	Not applicable Constructed before 1/4/83	Not applicable Constructed prior to 1987	Unit not subject to HON	Applicable
Unit 212	Unsaturated Gas Plant	Applicable	Not applicable Constructed before 1/4/83	Not applicable Constructed prior to 1987	Unit not subject to HON	Applicable
Unit 113	Sponge Coker	Applicable	Applicable only to MOSC tank and valves, etc. associated with 113 B-3 heater. All other portions of unit built before 1/4/83	Not applicable	Unit not subject to HON	Applicable
Unit 114	Naphtha Hydrotreater	Applicable	Not applicable Constructed before 1/4/83	Not Applicable Constructed prior to 1987	Unit not subject to HON	Applicable
Unit 115	Light Distillate Hydrotreater	Applicable	Not applicable Constructed before 1/4/83	Not applicable Constructed prior to 1987	Unit not subject to HON	Applicable
Unit 116	Catalytic Reformer No. 2	Applicable	Not applicable Constructed before 1/4/83	Not applicable Constructed prior to 1987	Unit not subject to HON	Applicable
Unit 118	Aliphatic Naphtha Solvents	Applicable	Not applicable Constructed before 1/4/83	Not applicable Constructed prior to 1987	Unit not subject to HON	Applicable
Unit 119	Sulfur Unit (Claus)	Applicable	Not applicable Constructed before 1/4/83	Applicable (due to sewer segregation project)	Unit not subject to HON	Applicable

Table 1
LDAR Regulatory Applicability By Unit

Unit	Description	35 IAC 218.447	40 CFR 60 GGG	40 CFR 60 QQQ	40 CFR 63 H	Refinery MACT (via 40CFR60 W)
Unit 120	HF Alkylation Unit	Applicable.	Applicable	Not applicable. Constructed prior to 1987.	Unit not subject to HON	Applicable.
Unit 121	Sulfur Recovery Unit (Claus-Beavon)	Applicable.	Not applicable, Constructed before 1/4/83.	Applicable (due to sewer segregation project).	Unit not subject to HON	Applicable.
Unit 122	Aromatics Extraction Unit (UDEX)	Applicable	Not applicable Constructed before 1/4/83	Not applicable Constructed prior to 1987	Applicable to part of unit	Applicable to non-HON part of unit.
Unit 123	Catalytic Reformer No. 2	Applicable	Not applicable Constructed before 1/4/83	Not applicable Constructed prior to 1987	Unit not subject to HON	Applicable
Unit 125	Diesel Distillate Hydrotreater	Applicable	Not applicable Constructed before 1/4/83	Not applicable Constructed prior to 1987	Unit not subject to HON	Applicable
Unit 228	Blend Center	Not applicable Not included in IEPA definition of petroleum refinery at 35 IAC 211.4630	Not applicable Not a refinery process unit	Not applicable Constructed prior to 1987	Unit not subject to HON	Applicable
Unit 331	Oil Transfer & Storage	Explicitly excluded at 35 IAC 218.447(b)	Not applicable Not a refinery process unit	Applicable (due to sewer re-segregation project)	Certain tanks are subject to HON	Applicable

Table 1
LDAR Regulatory Applicability By Unit

Unit	Description	35 IAC 218.447	40 CFR 60 GGG	40 CFR 60 QQQ	40 CFR 63 H	Refinery MACT (via 40CFR60 W)
Unit 333	Barge Loading	Not applicable Not included in IEPA definition of petroleum refinery at 35 IAC 211.4630	Not applicable Not a refinery process unit	Not applicable constructed prior to 1987	Not subject to HON	Applicable
Unit 334	Santa Fe Tank Car Rack	Not applicable Not included in IEPA definition of petroleum refinery at 35 IAC 211.4630	Not applicable Not a refinery process unit	Not applicable Constructed prior to 1987	Not subject to HON	Applicable
Unit 335	Fuels Loading Rack	Not applicable Not included in IEPA definition of petroleum refinery at 35 IAC 211.4630	Not applicable Not a refinery process unit	Not applicable Constructed prior to 1987	Unit not subject to HON	Applicable
Unit 337	IC Tank Car Loading	Not applicable Not included in IEPA definition of petroleum refinery at 35 IAC 211.4630	Not applicable Not a refinery process unit	Not applicable Constructed prior to 1987	Part of rack is HON Group 2	Applicable to non-HON portions
Unit 338	Solvents Truck Loading	Not applicable Not included in IEPA definition of petroleum refinery at 35 IAC 211.4630	Not applicable Not a refinery process unit	Not applicable Constructed prior to 1987	Part of rack is HON Group 2	Applicable to non-HON portions

Table 1
LDAR Regulatory Applicability By Unit

Unit	Description	35 IAC 218.447	40 CFR 60 GGG	40 CFR 60 QQQ	40 CFR 63 H	Refinery MACT (via 40CFR60 W)
Unit 430	South Utilities	Not applicable Not included in IEPA definition of petroleum refinery at 35 IAC 211.4630	Not applicable Not a refinery process unit	Applicable at South Plant parallel plate separators	Unit not subject to HON	Not applicable Not a refinery process unit
Unit 431	North Utilities	Not applicable Not included in IEPA definition of petroleum refinery at 35 IAC 211.4630	Not applicable Not a refinery process unit	Not applicable Constructed prior to 1987	Unit not subject to HON	Not applicable Not a refinery process unit
Unit 844	Waste Treatment/Flare System	Not applicable. Not included in IEPA definition of petroleum refinery at 35 IAC 211.4630.	Not applicable. Not a refinery process unit.	Not applicable. Constructed prior to 1987.	Unit not subject to HON	Applicable.
Unit 857	Mobile Equip./ Maintenance	Not applicable Not included in IEPA definition of petroleum refinery at 35 IAC 211.4630	Not applicable to mobile sources	Not applicable to mobile sources	Unit not subject to HON	Not applicable Not a refinery process unit

Table 2 Summary of Applicable Standards					
	Rule				
Component	35 IAC 218.445	40 CFR 60 GGG	40 CFR 63 H (subsumes 40 CFR 61 J, V)	40 CFR 63 CC	"Most Stringent"
Pump (LL)	Annual (between March I and June 30) 10,000 ppmv. Weekly AVO	Monthly 10,000 ppmv. Weekly AVO.	Monthly 1000 (HON only) (Quality Improvement Program required if 6-month rolling average > 10%) Weekly AVO.	If > 5% HAP, Monthly 10,000 ppmv, Weekly AVO	Monthly 10,000 ppmv Weekly AVO. (Except at HON, which retains 1000 ppmv threshold and QIP trigger)
Pump (HL)	Not regulated	Unscheduled AVO. If evidence of leak monitor w/in. 5 days. Repair at 10,000 ppmv	Unscheduled AVO. If evidence of leak, assume leak and repair, or monitor Win 5 days and repair at 2000 ppmv (HON only).	If > 5% HAP, Unscheduled AVO. If evidence of leak monitor w/in 5 days. Repair at 10,000 ppmv	As needed if leaking. 10,000 ppmv (except at HON, which retains 2000 ppmv threshold)
Valve(LL)	Annual (between March 1 and June 30) 10,000 ppmv	Quarterly (skip to annual) 10,000 ppmv	Quarterly 500 ppmv (HON only)	If > 5% HAP, Quarterly (skip to annual) 10,000 ppmv	Annual (between March 1 and June 30) 10,000 ppmv (except at HON, which retains quarterly and 500 ppmv threshold)
Valve(HL)	Not regulated	Unscheduled AVO. Repair As needed if leaking. 10,000 ppmv	As needed if leaking. 500 ppmv (HON only	If > 5% HAP, As needed if leaking. 10,000 ppmv	As needed if leaking. 10,000 ppmv (except at HON, which retains 500 ppmv threshold)
Valve (G)	Quarterly 10,000 ppmv	Quarterly 10,000 ppmv	Quarterly 500 (HON only)	If > 5% HAP, Quarterly 10,000 ppmv	Quarterly 10,000 ppmv (except HON, which retains 500 ppmv threshold)

Table 2
Summary of Applicable Standards

Component	Rule				"Most Stringent"
	35 IAC 218.445	40 CFR 60 GGG	40 CFR 63 H (subsumes 40 CFR 61 J, V)	40 CFR 63 CC	
Compressor	Quarterly 10, 000 ppmv	Quarterly if 500 ppmv. Annual if "NDE"	Quarterly if 500 ppmv. Annual ff "NDE" (HON only)	If > 5% HAP, Quarterly ff 500 ppmv, Annual ff "NDE".	Quarterly 500 ppmv
Agitator (LL)	Not regulated	Not regulated	Monthly, 10000 ppmv, weekly AVO. (HON only)	If > 5% HAP, Quarterly 10,000 ppmv	Monthly, 500 ppmv (HON only or if > 5% HAP)
Agitator (HL)	Not regulated	Not regulated	Unscheduled AVO. If evidence of leak, assume leak and repair, or monitor Win 5 days and repair at 10000 ppmv (HON only).	Not regulated	At HON only. Unscheduled AVO. If evidence of leak, assume leak and repair, or monitor Win 5 days and repair at 10000 ppmv (HON only).
Fitting/ Connector (LUG)	Not regulated	Unscheduled AVO. If above 10,000 ppmv, repair	Annual. 500 ppmv.	Unscheduled AVO. If above 10,000 ppmv, repair	Unscheduled AVO. If above 10,000 ppmv, repair
Fitting/ Connector (HL)	Not regulated	Unscheduled AVO. If above 10,000 ppmv, repair.	Unscheduled AVO. If evidence of leak, assume leak and repair, or monitor Win 5 days and repair at 500 ppmv (HON only).	Unscheduled AVO. If above 10,000 ppmv, repair	Unscheduled AVO. If evidence of leak, assume leak and repair, or monitor Win 5 days and repair at 500 ppmv.

Table 2
Summary of Applicable Standards

Component	Rule				"Most Stringent"
	35 IAC 218.445	40 CFR 60 GGG	40 CFR 63 H (subsumes 40 CFR 61 J, V)	40 CFR 63 CC	
Drains	Annual 10,000 ppmv	Not regulated	Not regulated	Not regulated	Annual 10,000 ppmv [drains affected by 40 CFR 60 QQQ (petroleum wastewater NSPS) will be monthly with 500 ppmv action threshold]
Sample Connections	Not regulated	Closed loop, closed purge, or closed vent system	Closed loop, closed purge, or closed vent system (HON-only)	If > 5% HAP, Closed loop, closed purge, or closed vent system	Closed loop, closed purge, or closed vent system at HON unit and streams > 5% HAP.
Pressure Relief Valves (G)	Quarterly 10,000 ppmv. Also w/in 24 hrs of any vent to atmosphere.	Quarterly 500 ppmv. Also monitor within 5 days after release to atmosphere	Quarterly 500 ppmv. Also monitor w/in 5 days after release to atmosphere.	Quarterly 500 ppmv. Also monitor within 5 days after release to atmosphere.	Quarterly, 500 ppmv. Also monitor within 24 hours after release to atmosphere.
Pressure Relief Valves (L)	Not regulated	Unscheduled AVO. Monitor w/in 5 days. Repair at 10000 ppmv.	Unscheduled AVO. If evidence of leak, assume leak and repair, or monitor Win 5 days and repair at 500 ppmv (HON only).	If >5% HAP, Unscheduled AVO. Monitor w/in 5 days. Repair at 10000 ppmv.	Unscheduled AVO. Repair at 500 ppmv.
Instrument-ation System	Not regulated	Not regulated	Unscheduled AVO. If evidence of leak, assume leak and repair, or monitor Win 5 days and repair at 500 ppmv (HON only).	Not regulated	At HON only (U122) Unscheduled AVO. If evidence of leak, assume leak and repair, or monitor Win 5 days and repair at 500 ppmv.

Table 2 Summary of Applicable Standards					
Component	Rule				"Most Stringent"
	35 IAC 218.445	40 CFR 60 GGG	40 CFR 63 H (subsumes 40 CFR 61 J, V)	40 CFR 63 CC	
Difficult and Unsafe-to-Monitor valves (LUG)	Monitor inaccessible valves annually	10, 000 ppmv. Difficult: annually Unsafe: when safe NDE: annual at 500 ppmv	500 ppmv. Difficult: annually Unsafe: when safe	10,000 ppmv. Difficult: annually Unsafe: when safe NDE: annual at 500 ppmv	10,000 ppmv. Difficult: annually Unsafe: when safe NDE: annual at 500 ppmv
Open Ended Lines	Sealed or second valved	Sealed or second valved	Sealed or second valved	Sealed or second valved	Sealed or second valved

The "Most Stringent" will be applied to all units, except as noted.

For light liquid valves not regulated by the HON, repairs are required at 10,000 ppmv. For these valves, any repairs initiated at lower levels are voluntary.

Except for HON and certain gaseous components, only components leaking above 10,000 ppmv will be reported.

DGP:jar

10.3 Attachment 3 - 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: _____

DGP:jar

10.4 Attachment 4 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;
- Incorporates into the CAAPP permit a construction permit, provided the conditions of the construction permit meet the requirements for the issuance of CAAPP permits; or
- Incorporates into the CAAPP permit revised limitations or other requirements resulting from the application of an approved economic incentives rule, marketable permits rule, or generic emissions trading rule.

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; and

- Are not required to be processed as a significant permit modification.

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 for the Illinois EPA to use to notify USEPA and affected States.

3. <u>Significant Permit Modification</u>

- 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
	ID 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?		☐ Yes ☐ No
6. Township name:	7. County:	8. ID 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? ☐ Owner ☐ Operator	20. All correspondence to: (check one) ☐ Owner ☐ Operator ☐ 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?	☐ Yes ☐ 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?	☐ Yes ☐ 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?	☐ Yes ☐ No
27.	Does the application include a complete process description for the emission units and control equipment for which a permit is being sought?	☐ Yes ☐ 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.	☐ Yes ☐ 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?	☐ Yes ☐ No ☐ 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:

_____	_____
AUTHORIZED SIGNATURE	TITLE OF SIGNATORY
_____	_____ / _____ / _____
TYPED OR PRINTED NAME OF SIGNATORY	DATE

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.

10.6 Attachment 6 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 form 200-CAAPP, APPLICATION FOR CAAPP PERMIT.

2. A completed compliance certification for the source. For this purpose, the Illinois EPA will accept a copy of the most recent form 401-CAAPP, ANNUAL COMPLIANCE CERTIFICATION submitted to the Illinois EPA.

3. 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.

4. Information addressing any outstanding transfer agreement pursuant to the ERMS.

5. 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. 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.

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