

217/782-2113

CONSTRUCTION PERMIT - NSPS SOURCE

PERMITTEE

ConocoPhillips Wood River Refinery
Attn: Neal Sahni, Environmental Director
900 South Central Avenue
Roxana, Illinois 62084

Application No.: 04040012

I.D. No.: 119090AAA

Applicant's Designation:

Date Received: April 5, 2004

Subject: Hartford Crude Unit

Date Issued: April 6, 2004

Location: 900 South Central Avenue, Roxana

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of crude unit and ancillary operations as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1.0 Unit Specific Conditions

1.1 Unit: Heaters

1.1.1 Description

Crude Unit

The Crude Units at a refinery separate incoming crude oil received by the refinery into various fractions by means of distillation.

ConocoPhillips has experienced unanticipated reductions in capacity of their No. 2 Crude Unit, which is designed to process 195,000 barrels per day of crude oil. Further reductions in the capacity of the unit would affect the gasoline supply for the Midwest.

Last July, ConocoPhillips purchased various units located at the adjacent Hartford Refinery formerly operated by Premcor. The purchased units included its crude unit, with a capacity of 65,000 barrels per day. This permit authorizes ConocoPhillips to undertake the startup and shakedown of the Hartford Crude Unit as it may preserve and maintain the gasoline supply to the area. This involves operation of three heaters which supply the energy for distillation of crude oil. The overall operation of the Wood River Refinery will not increase beyond the current capacity of the refinery.

This permit does not authorize operation of other units at the Hartford Refinery such as the coker unit, nor does it authorize the processing of crude oil that is heavier than the Wood River Refinery is currently capable of processing.

1.1.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
H-24	Natural Gas Fired Heater 314 mmBtu/hr	None
H-28	Natural Gas Fired Heater 66 mmBtu/hr	None
H-35	Natural Gas Fired Heater 75 mmBtu/hr	None

1.1.3 Applicability Provisions and Applicable Regulations

- a. "Affected heaters" for the purpose of these unit-specific conditions, are the heaters described in Conditions 1.1.1 and 1.1.2.
- b.
 - i. This permit is issued based upon affected heaters being subject to the NSPS for Petroleum Refineries, 40 CFR 60 Subparts A and J. The Illinois EPA administers the NSPS for subject sources in Illinois pursuant to a delegation agreement with the USEPA.
 - ii. The Permittee shall not burn in the affected heaters any fuel gas that contains hydrogen sulfide (H₂S) in excess of 230 mg/dscm (0.10 gr/dscf) [40 CFR 60.104(a)(1)].
 - iii. The affected heaters shall be operated in accordance with good air pollution control practice to minimize emissions, as required by 40 CFR 60.11(d).
- c.
 - i. The Permittee shall not cause or allow the emission of smoke or other particulate matter, with an opacity greater than 20 percent, into the atmosphere from the affected heater H-24 except as allowed by 35 IAC 212.122(b) [35 IAC 212.122(a)].
 - ii. The Permittee shall not cause or allow the emissions of smoke or other particulate matter, with opacity greater than 30 percent, into the atmosphere from the affected heaters H-28 and H-35, except as allowed by 35 IAC 212.123(b) [35 IAC 212.123(a)].

- d. Emission of nitrogen oxides into the atmosphere in any one hour period from the affected heater H-24 shall not exceed 0.3 lbs/mmBtu of actual heat input [35 IAC 217.141(a)].
- e. The Permittee shall not cause or allow the emission of carbon monoxide (CO) into the atmosphere from each affected heater to exceed 200 ppm, corrected to 50 percent excess air [35 IAC 216.121].

1.1.4 Non-Applicability of Regulations of Concern

- a. This permit is issued based on the affected heaters not being subject to 40 CFR 60 Subparts Db and Dc, because the affected heaters are not steam generating units but rather process heaters.
- b. This permit is issued based on the affected heaters not being subject to 35 IAC 212.206, 212.207, or 214.162 because the affected heaters do not burn liquid fuel.
- c. The source has addressed the applicability and compliance of 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The limits established by this permit ensure that the modification addressed in this construction permit does not constitute a major modification pursuant to these rules.

1.1.5 Operational and Production Limits and Work Practices

- a.
 - i. The combined firing rate of the affected heaters shall not exceed 455 mmBtu/hr, daily average.
 - ii. Only gaseous fuels shall be burned in the affected heaters.
- b. The Hartford Crude Unit shall process crude oil from the existing Wood River Refinery stocks or future purchases rather than the heavier crude oils that the Hartford Integration Project is designed to accommodate.
- c. The Hartford Crude unit shall be operated such that the total crude oil processing rate does not exceed 310,000 barrels per day, weekly average.
- d. The Permittee shall perform all necessary testing of units prior to startup so as to minimize emissions. Such testing shall include a pressure test using nitrogen, backfill unit with light petroleum liquid to perform operational/integrity testing, and other tests as appropriate.

1.1.6 Emission Limitations

- a. Emissions from affected heaters combined, shall not exceed the following limits:

<u>Pollutant</u>	<u>Emissions (Lb/Day)</u>
NO _x	2,412.3
SO ₂	289.3
CO	903.8
VOM	59.2
PM/PM ₁₀	81.8

1.1.7 Testing Requirements

- a. The Permittee shall have observations of opacity from the affected heaters conducted by Method 9 during the period of operation allowed by this permit (or the first 30 days of actual operation of the heaters).

1.1.8 Monitoring Requirements

- a. The Permittee shall comply with the monitoring requirements specified in 40 CFR 60.105 for the affected heaters by installing, calibrating, maintaining and operating a continuous monitoring system for the concentration (dry basis) of H₂S in fuel gases before being burned in the affected heaters.
- b. The Permittee shall determine compliance with the H₂S standard in 40 CFR 60.104(a)(1) [Condition 1.1.3(b)(ii)] as follows: Method 11, 15, 15A, or 16 shall be used to determine the H₂S concentration. The gases entering the sampling train should be at about atmospheric pressure. If the pressure in the refinery fuel gas lines is relatively high, a flow control valve may be used to reduce the pressure. If the line pressure is high enough to operate the sampling train without a vacuum pump, the pump may be eliminated from the sampling train. The sample shall be drawn from a point near the centroid of the fuel gas line [40 CFR 60.106(e)(1)].

1.1.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the Hartford Crude Unit:

- a. The sulfur content of the crude oil processed in the unit, percent by weight, daily average;
- b. Firing rate of the affected heaters (mmBtu/hr on a daily average); and
- c. NO_x, CO, VOM, SO₂, PM and PM₁₀ emissions from the affected heaters (pounds/day).

1.1.10 Reporting Requirements

- a. The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of the affected heaters with the permit requirements as follows. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken.
 - i. The Permittee shall immediately notify the Illinois EPA of deviations from Condition 1.1.5.
 - ii. The Permittee shall notify the Illinois EPA of other deviations within 10 days. For this purpose, the Permittee may submit a weekly report.
- b. The Permittee shall promptly notify the Illinois EPA of significant developments with regard to the status of the Wood River Refinery No. 2 Crude Unit and significant developments with respect to the Hartford Crude Unit.
- c. For the affected heaters, the Permittee shall comply with the reporting requirements specified in 40 CFR 60.107(d), (e) and (f) and 40 CFR 60.105(e) (3).
- d. At the conclusion of operation pursuant to this permit, the Permittee shall submit a report summarizing the quantity of crude oil processed by the Hartford Crude Unit and the total emissions resulting from the Hartford Crude Unit.

1.1.11 Compliance Procedures

- a. Compliance with the SO₂ limits in Condition 1.1.6(a) shall be based on the operating records required by Condition 1.1.9 and the sulfur content of refinery fuel gas as monitored in accordance with Condition 1.1.8.

- b. Compliance with the other emission limits in Condition 1.1.6(a) for the affected heaters shall be based on the operating records required by Condition 1.1.9 and appropriate emission factors, such as the following emission factors from USEPA's Compilation of Air Pollutant Emission Factors, AP-42:

- i. For Heater H-24:

<u>Pollutant</u>	<u>Emission Factor (Lbs/mmscf)</u>
NO _x	280.0
CO	84.0
VOM	5.5
PM/PM ₁₀	7.6

- ii. For Heaters H-28 and H-35:

<u>Pollutant</u>	<u>Emission Factor (Lbs/mmscf)</u>
NO _x	100.0
CO	84.0
VOM	5.5
PM/PM ₁₀	7.6

- 2a. Operation of the Hartford Crude Unit is allowed for 30 operating days or until May 31, 2004, whichever is sooner, under this construction permit. For this purpose, an operating day is a period of 24 hours in which one or more of the heaters is operated, other than for preliminary firing of a heater.
- b. Notwithstanding the above, if the Illinois EPA issues a construction permit for the Hartford Integration Project, this permit shall terminate on such earlier date that the Permittee notifies the Illinois EPA that the Hartford Crude Unit is being operated pursuant to such permit.
- c. This permit does not supersede requirements contained in Operating Permit 77050044 (H-24 and H-28) and Operating Permit 91090091 (H-35).

Please note that issuance of this permit does not replace the Hartford Integration Project (Application No. 03080006). It also does not imply that a permit for the Hartford Integration Project will be issued by the Illinois EPA.

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If you have any questions on this permit, please contact Jason Schnepp at 217/782-2113.

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

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cc: Region 3