

217/782-2113

CONSTRUCTION PERMIT

PERMITTEE

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

Application No.: 05070033

I.D. No.: 197090AAI

Applicant's Designation:

Date Received: July 15, 2005

Subject: FCCU Improvements

Date Issued: September 22, 2005

Location: 135th Street and New Avenue, Lemont

This Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a Selective Catalytic Reduction (SCR) control system and a Wet Gas Scrubber (WGS) for control of emissions from the existing Fluid Catalytic Cracking Unit (FCCU) and changes to the FCCU catalyst stripping section, as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This permit authorizes the installation of a SCR control system, whose purpose is to reduce NO_x emissions, and the installation of a WGS, whose purpose is to reduce SO₂ and PM emissions.
- b. This permit is issued based upon the Permittee being subject to a Consent Decree between CITGO, USEPA and Illinois EPA (Civil Action Number H-04-3883 entered January 26, 2005 in the Southern District of Texas) which requires the installation of a WGS on the FCCU. The Permittee has also chosen to meet emission limitations established in the Consent Decree for NO_x by installing a SCR control system on the FCCU.
2. This permit also authorizes changes to improve the effectiveness of the section of the FCCU, in which catalyst is "prepared" for regeneration by removing hydrocarbons from the catalyst prior to regeneration.
- 3a. The SCR control system and the WGS shall be operated and maintained in conformance with good air pollution control practices.
- b. Pursuant to Paragraph 33 of the Decree, emissions of SO₂ from the FCCU shall not exceed 25 ppmvd at 0% O₂ on a 365-day rolling average basis and 50 ppmvd at 0% O₂ on a 7-day rolling average basis.
- c. Pursuant to Paragraph 30A of the Decree, the "Emission Limit Option", the NO_x emissions from the FCCU shall not exceed 20 ppmvd on a 365-day rolling average and 40 ppmvd on a 7-day rolling average basis, both at 0% oxygen.

- d.
 - i. Pursuant to Paragraph 44 of the Decree, the WGS shall be designed to achieve an emission limit of 0.5 lb/1000 lb coke burned on a 3-hour average basis.
 - ii. Pursuant to Paragraph 46 of the Decree, the PM emissions from the FCCU shall not exceed 1.0 lb/1000 lb coke burned on a 3-hour average basis, or such lower limit established after startup of the WGS pursuant to Paragraph 44 of the Decree.
 - iii. The Permittee shall comply with the PM testing requirements specified by Paragraph 47 of the Decree.
- e. Pursuant to Paragraph 48 of the Decree, the CO emissions from the FCCU shall not exceed 100 ppmvd corrected to 0% O₂ on a 365-day rolling average basis and 500 ppmvd corrected to 0% O₂ on a 1-hour average basis.
4. The Permittee shall comply with the Continuous Monitoring Systems (CEMS) requirements of the Decree for the FCCU (See also Paragraph 12 of the Decree), which includes operation, calibration and certification of CEMS for NO_x, SO₂, CO and opacity, and CMS for O₂.
- 5a. This permit is issued based upon installation of the SCR and WGS being a pollution control project for the FCCU.
- b. This permit is issued based upon at most negligible increases of emissions attributable to changes to the stripping section of the FCCU, as the changes will act to reduce the level of hydrocarbons entering the catalyst regenerator.
6. This Permit does not revise or relax applicable requirements for the FCCU contained in the CAAPP permit.
7. The FCCU with SCR control system and WGS addressed by this construction permit may be operated under this permit until renewal of the CAAPP permit or a modification of the CAAPP permit is issued provided the Permittee submits a timely application to amend the current CAAPP permit to incorporate this project.

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

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

DES:JMS:psj

cc: Region 1