

217/782-2113

CONSTRUCTION PERMIT -- NESHAP SOURCE

PERMITTEE

ExxonMobil Oil Corporation
Attn: Stacey K. Ford
P.O. Box 874
Joliet, Illinois 60434

Application No.: 03050050

I.D. No.: 197800AAA

Applicant's Designation:

Date Received: May 15, 2003

Subject: Alky SOFT Project

Date Issued: August 19, 2003

Location: I-55 & Arsenal Road, Channahon

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of an Alkylation Unit SOFT Project (Alky SOFT Project), that is, various modifications to the Alkylation Unit as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

Findings

1. ExxonMobil Oil Corporation is seeking a construction permit for physical changes to its Alkylation Unit at its Joliet Refinery. The changes include an increase in the number of components (valves, flanges, etc.), which would be accompanied by an increase in volatile organic material (VOM) emissions.
2. The area in which the facility is located is designated nonattainment for ozone.
3. The proposed project has potential emissions, when combined with the net emission increases from other contemporaneous projects at the source, that are more than 25 tons/year for VOM. The project is therefore subject to 35 IAC 203: Major Stationary Sources Construction and Modification (MSSCAM).
4. After reviewing all materials submitted by ExxonMobil Oil Corporation, the Illinois EPA has determined that the project will use work practices that will comply with all applicable Board emissions standards and meet the Lowest Achievable Emission Rate (LAER) as required by MSSCAM.
5. A copy of the application and the Illinois EPA's review of the application and a draft of this permit was forwarded to a location in the vicinity of the plant, and the public was given notice and opportunity to examine this material, to submit comments, and to request and participate in a public hearing on this matter.

Conditions

1.0 Unit Specific Conditions

1.1 Unit: Alkylation Unit SOFT Project
Control: None

1.1.1 Description

The Alkylation Unit combines byproduct streams from other refining processes that contain low-molecular weight compounds, like propylene and butylenes, into larger paraffinic compounds (alkylate). This alkylate stream is a high octane material used primarily in the production of gasoline.

ExxonMobil Oil Corporation is making changes to improve process efficiency. These changes do not increase the capacity of the Alkylation Unit.

This project will involve additional piping. Emissions occur from leaks associated with the flanges, valves and other components in the piping of the unit.

All components associated with the Alkylation Unit that are in volatile organic compound service are also assumed to be "in organic hazardous air pollutant service" as defined in 40 CFR 63, Subpart CC.

1.1.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Components	Components (valves and flanges)	None

1.1.3 Applicability Provisions and Applicable Regulations

- a. An "affected component" for the purpose of these unit-specific conditions, is a new component installed as part of the Alky SOFT Project as described in Conditions 1.1.1 and 1.1.2, and any subsequent replacement of such new component.
- b. This permit is issued based upon the affected components being subject to National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries, 40 CFR 63, Subparts A and CC. The Illinois EPA administers the NESHAP for subject sources in Illinois pursuant to a delegation agreement with the USEPA. The Permittee shall comply with all applicable requirements of 40 CFR 63, Subparts A and CC.

Note: The Permittee has indicated that it generally complies with the equipment leak requirements specified in 40 CFR 63, Subpart CC by complying with the Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry 40 CFR 60, Subpart VV. However, for affected components the Permittee will comply with applicable provisions of 40 CFR Part 63, Subpart H (See Condition 1.1.5(a)).

- c. The Alky SOFT Project is considered a major modification for purposes of the Emission Reduction Market System (ERMS), pursuant to 35 IAC Part 205. As a major modification, the Permittee must hold allotment trading units (ATUs) for the affected components in an amount not less than 1.3 times their seasonal VOM emissions, in accordance with 35 IAC 205.150(c)(2).

1.1.4 Non-Applicability of Regulations of Concern

- a. Pursuant to 40 CFR 63.640(p), components that would be also subject to the provisions of 40 CFR Parts 60 and 61 are required only to comply with the provisions of 40 CFR Part 63 Subpart CC, rather than Parts 60 and 61.
- b. Notwithstanding the fact that the affected components are subject to 35 IAC 218.445 through 218.452, which require a leak monitoring and repair program, the source is not required to address the provisions of these state rules. This condition is based on the Illinois EPA's finding, following review of the various requirements of these state rules and the federal rules at 40 CFR Part 63, Subpart H, that compliance with these federal rules, as is required by this permit, will assure compliance with these state rules. (Refer to 40 CFR 63.640(q)).
- c. This permit does not address existing components in the Alkylation Unit, for which the Permittee currently complies with the provisions of 40 CFR 60, Subpart VV, as allowed by 40 CFR 63, Subpart CC.

1.1.5 Work Practices

- a. Affected components shall comply with the applicable standards in 40 CFR 63, Subpart H for components in gas/vapor service and light liquid service, including:
 - i. Affected valves shall comply with the standards for valves in 40 CFR 63.168.

Note: All of the components that are in volatile organic compound service at the source's petroleum refining process units are considered to be in organic HAP service and calculation of percentage leaking components may be done on a sourcewide basis as allowed by 40 CFR 63.648(a)(2).

- ii. Affected flanges shall comply with the standards for connectors in 40 CFR 63.174.
- b. For affected valves and flanges, the Permittee shall monitor the component to detect leaks by the method specified in 40 CFR 63.180(b), except that a more stringent definition of a leak shall apply, i.e., an instrument reading of 500 parts per million or greater from components shall be considered a leak.

Note: Condition 1.1.5 represents the Lowest Achievable Emissions Rate (LAER) for emissions of VOM as applied to this project, pursuant to 35 IAC 203.301.

- c. Each affected component shall be identified in a manner that distinguishes the affected components from other existing components, and allows the appropriate definition of a leak to be utilized.

1.1.6 Emission Limitations

Emissions of volatile organic material (VOM) from the new* components (i.e., valves, flanges, etc.) associated with the Alky SOFT Project shall not exceed 3.76 tons per year, with emissions calculated using the compliance procedures specified in Condition 1.1.12.

- * This limit does not apply to components that are already present at the alkylation unit provided the Permittee properly identifies which components are new.

1.1.7 Testing Requirements

None

1.1.8 Monitoring Requirements

The Permittee shall comply with monitoring requirements identified in 40 CFR 63.168 and 63.174. For this purpose, the Permittee shall utilize the test methods and procedures identified in 40 CFR 63.180.

1.1.9 Recordkeeping Requirements

- a. The Permittee shall comply with the recordkeeping requirements identified in 40 CFR 63.181. In these records, the Permittee shall include such other information as is needed to assure that the repair requirements in this permit are met.
- b. The Permittee shall maintain records of the following items for affected components:
 - i. Number of components by unit or location and type in the Alky SOFT Project.
 - ii. Calculated VOM emissions including supporting calculations, attributable to these components determined in accordance with Condition 1.1.12 (tons/year).
- c. The Permittee shall maintain a file that contains the following information for affected components. This file may be kept in either paper or electronic copy:
 - i. The applicable identification number for each component;
 - ii. Results from initial leak monitoring of the affected component;
 - iii. Leak definition for each affected component; and
 - iv. Monitoring frequency (i.e., when monitoring is due).

1.1.10 Reporting Requirements

- a. For affected components, the Permittee shall comply with the reporting provisions identified in 40 CFR 63.182. Specifically, the Permittee shall submit the following reports:
 - i. An Initial Notification described in 40 CFR 63.182(b),
 - ii. A Notification of Compliance Status described in 40 CFR 63.182(c) submitted no later than 90 days after initial startup of the Alky SOFT Project, and
 - iii. Periodic Reports described in 40 CFR 63.182(d).
- b. With the initial compliance report required by Condition 1.1.10(a)(ii), the Permittee shall submit:

- i. Records of the number and type of affected components, and;
- ii. Calculated VOM emissions for affected components using the predicted leak rate and emission factors provided in the permit application.

Note: This information will be used to evaluate variation between predicted and as-built component counts, which may have an impact on projected emissions (i.e., emission limits and required offsets).

1.1.11 Operational Flexibility/Anticipated Operating Scenarios

None

1.1.12 Compliance Procedures

Compliance with the emission limits in Condition 1.1.6 shall be based on the recordkeeping requirements in Condition 1.1.9 and applicable standard emission estimate methodology published by USEPA in "Protocol for Equipment Leak Emission Estimates", EPA-453/R-95-017 (November 1995).

1.1.13 Compliance Schedules

- a. The Permittee is subject to and shall take the actions required in the schedules of compliance established for the following emission units. These schedules may be adjusted through a revision of this permit in the event an unforeseen delay beyond the Permittee's control occurs.
 - i. Individual Drain Systems - 40 CFR Part 60, Subpart QQQ.
 - ii. Coker Blowdown Tank - 40 CFR Part 63, Subpart CC and 35 IAC Part 218, Subpart B: Organic Emissions from Storage and Loading Operations.
- b. Individual Drain Systems:
 - i. The Permittee shall submit a permit application for the installation of controls required by 40 CFR Part 60, Subpart QQQ, on certain identified individual drain systems no later than October 1, 2003.
 - ii. The Permittee shall achieve compliance with all applicable requirements of 40 CFR Part 60, Subpart QQQ for 15 of the individual drain

systems identified in the required permit application no later than December 1, 2003.

- iii. The Permittee shall achieve full compliance with all applicable requirements of 40 CFR Part 60, Subpart QQQ, for all individual drain systems identified in the required permit application no later than December 31, 2003.

c. Coker Blowdown Tank:

- i. The Permittee shall complete detailed engineering and procurement of any long lead time equipment no later than October 31, 2003.
- ii. The Permittee shall achieve full compliance with all requirements of 40 CFR Part 63, Subpart CC and 35 IAC Part 218, Subpart B: Organic Emissions from Storage and Loading Operations, by connecting the coker blowdown tank to a suitable control device no later than March 31, 2004.

Note: Pursuant to 35 IAC 203.305, the Permittee must demonstrate that it is in compliance, or on a schedule for compliance, with all applicable state and federal air pollution control requirements. As part of the application for the Alky SOFT Project, the Permittee has proposed schedules of compliance for certain emission units, which are now made enforceable on the Permittee by this Condition. These schedules become effective on the date that on-site construction of the Alky SOFT Project has begun.

- 2a. The Permittee shall maintain 4.9 tons of VOM emission offsets generated by other sources in the Chicago nonattainment area such that the total is 1.3 times the VOM emissions allowed from this project.
- b. These VOM emission reduction credits are provided by permanent emission reductions that occurred at the following source, as identified below. These emission reductions have been relied upon by the Illinois EPA to issue this permit and cannot be used as emission reduction credits for other purposes. The reductions at Sara Lee have been made enforceable by the withdrawal of the air pollution control permits for the source.

Sara Lee, Aurora, I.D. No. 089005AEX

Permanent Shutdown

5.00 tons/year

Condition 4 represents the actions identified in conjunction with this project to ensure that the project is accompanied by emission offsets and does not interfere with reasonable further progress for VOM.

Note: Emission offsets are being required in conjunction with the issuance of the permit because USEPA has not approved provisions

of the ERMS that would allow compliance with the ERMS to satisfy the offset requirements for a major modification in 35 IAC Part 203.

If you have any questions on this permit, please call 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