

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5**

IN THE MATTER OF:)
)
Mobil Oil Corporation) **NOTICE OF VIOLATION**
Joliet Refinery)
Joliet, Illinois) **EPA-5-00-IL-26**
)
Proceedings Pursuant to)
Section 113(a)(1) of the)
Clean Air Act,)
42 U.S.C. § 7413(a)(1))

NOTICE OF VIOLATION

The Administrator of the United States Environmental Protection Agency (U.S. EPA), is issuing this Notice of Violation under Section 113(a)(1) of the Clean Air Act (Act). U.S. EPA finds that Mobil Oil Corporation (Mobil) is violating the Illinois State Implementation Plan (SIP) rules at 40 C.F.R. § 52.21 which govern the prevention of significant deterioration (PSD) of air quality.

Statutory and Regulatory Background

Prevention of Significant Deterioration

1. On June 19, 1978, U.S. EPA promulgated the prevention of significant deterioration of air quality standards pursuant to Subtitle I, Part C of the Act. These regulations are codified at 40 C.F.R. § 52.21 (43 Fed. Reg. 26403).
2. On April 7, 1980, U.S. EPA delegated to the Illinois Environmental Protection Agency (IEPA) authority to review and process PSD permit applications and to implement the PSD program. 46 Fed. Reg. 9584.
3. On August 7, 1980, U.S. EPA incorporated the provisions of 40 C.F.R. § 52.21(b) through (w) into the Illinois SIP. 45 Fed. Reg. 52741, as amended at 46 Fed. Reg. 9584, codified at 40 C.F.R. § 52.738.
4. 40 C.F.R. § 52.21(b)(1)(i)(a) defines a "major stationary source" as any source, including petroleum refineries and sulfur recovery plants, which emits or

has the potential to emit, 100 tons per year or more of any pollutant subject to regulation under the Act.

5. 40 C.F.R. § 52.21(b)(2)(i) defines a "major modification" as any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to the regulations under the Act.
6. 40 C.F.R. § 52.21(b)(23)(i) defines "significant" net emissions increase for sulfur dioxide (SO₂) as a rate of emissions which would equal or exceed 40 tons per year of SO₂.
7. 40 C.F.R. § 52.21(i)(1) prohibits the actual construction of a major stationary source or major modification without a permit which states that the major stationary source or modification would meet the requirements of 40 C.F.R. § 52.21 (j) through (r).
8. 40 C.F.R. § 52.21(j) provides that for each pollutant subject to regulation under the Act for which a major modification would result in a significant net emissions increase at the source, the owner or operator of the major modification shall apply Best Available Control Technology (BACT) to each proposed emissions unit at which the increase would occur as the result of physical changes and changes in the methods of operation of the unit.
9. 40 C.F.R. § 52.21(r) states that any owner or operator of a source subject to PSD regulations who operates a source or modification without applying for and receiving approval under the PSD regulations is subject to enforcement action.

Leak Detection and Repair (LDAR)

10. On September 9, 1994, U.S. EPA approved 35 Ill. Admin. Code Part 218 as part of the Illinois SIP. 59 Fed. Reg. 46562. The final rule became effective October 11, 1994.
11. The owner or operator of a petroleum refinery shall, among other things, develop a monitoring program consistent with Section 218.446, conduct a monitoring program consistent with Section 218.447, and record all

leaking components which have a volatile organic material (VOM) concentration exceeding 10,000 ppm. 35 Ill. Adm. Code § 218.445(a)-(c).

12. The owner or operator of a petroleum refinery must identify each component consistent with its monitoring program plan. 35 Ill. Admin. Code § 218.445(d).
13. The owner or operator of a petroleum refinery must repair and retest the leaking components as soon as possible within 22 days after the leak is found. 35 Ill. Admin. Code § 218.445 (e).
14. The owner or operator of a petroleum refinery must prepare a monitoring program which, at a minimum, identifies all refinery components and the period in which each will be monitored under Section 218.447. 35 Ill. Admin. Code § 218.446.
15. The owner or operator of a petroleum refinery must conduct a component monitoring program which requires, among other things, a test once between March 1 and June 1 of each year by methods referred to in Section 218.105(g), i.e., 40 C.F.R. Part 60, Appendix A, Method 21. 35 Ill. Admin. Code § 218.447(a)(1).
16. The owner or operator of a petroleum refinery must submit a report to the Agency prior to the first day of both July and September listing all identified leaking components that were not repaired within 22 days. The report must also include the total number of components inspected, the total number of all leaking components awaiting unit turnaround, and the total number of components found leaking. 35 Ill. Admin. Code § 218.449 (a).

Factual Background

Prevention of Significant Deterioration (facts relating to at least three projects)

17. Mobil owns and operates a petroleum refinery located at I-55 and Arsenal Road, Joliet, Illinois. As part of the petroleum refinery, Mobil owns and operates a Claus sulfur recovery plant. The U.S. EPA factual background and findings contained in this NOV relate to Mobil's refinery, including its Claus sulfur recovery plant.

18. Mobil is located in Will County, Illinois, an area designated as unclassifiable for the National Ambient Air Quality Standards (NAAQS) for sulfur dioxide. 40 C.F.R. § 81.314.
19. Mobil constructed the Joliet refinery including the Claus sulfur recovery plant in 1971 - 1973. The Joliet refinery and the Claus sulfur recovery plant emit or have the potential to emit 100 tons per year or more of a pollutant regulated under the Act, and are "major stationary sources" as defined at 40 C.F.R. §52.21(b)(1)(i)(a).
20. Mobil's Claus sulfur recovery plant (Claus SRP) as originally constructed included the east and west Claus trains. Currently, the Claus SRP consists of north, east, and west Claus trains.

1. The Claus SRP at the Joliet refinery became subject to PSD regulations in about 1990 - Oxygen Enrichment System

21. In approximately 1989 and 1990, Mobil commenced constructing the oxygen enrichment system for the existing Claus SRP which was a physical change in or change in the method of operation of the Claus SRP at the Joliet refinery.
22. The installation of the oxygen enrichment system at the existing Claus SRP at the Joliet refinery resulted in a significant net SO₂ emissions increase of 40 tons per year (tpy) or more.
23. The installation of the oxygen enrichment system is a "major modification" to the existing Claus SRP at the Joliet refinery as that term is defined at 40 C.F.R. § 52.21(b)(2).

2.A. The Joliet refinery, including the Claus SRP, became subject to PSD regulations in about 1991 - Midwest Strategy Project (MSP) and the Coker/Heavy Crude Expansion Project

24. Between approximately 1991 and 1993, Mobil commenced a project that included converting its semi-regenerative platformer to a continuous catalyst regeneration reformer (CCR) unit, modifying the catalytic hydrofinisher (CHD) unit to improve sulfur removal capability, constructing a third amine train and new Claus train (north train), and constructing a tail gas

unit. Mobil referred to this project as the Midwest Strategy Project (MSP).

25. In approximately 1992, Mobil commenced a project that included replacing the four coke drums with larger coke drums, expanding two charge heaters at the coker unit, revising the crude unit, and modifying an existing fuel gas scrubber to allow the refinery to process additional volume of very heavy Canadian crude. Mobil referred to this project as the "Coker/Heavy Crude Expansion Project".
26. The attachment to the June 1991 authorization for expenditure no. 91475 for the MSP states that "these facilities [new amine unit, new Claus train and tail gas unit] also provide the additional sulfur handling capacity required for any future investment in expanded Coker capacity to process incremental sour crude."
27. The MSP and the Coker/Heavy Crude Expansion Project should have been permitted as one project.
28. The MSP and the Coker/Heavy Crude Expansion Project together resulted in a significant net SO₂ emissions increase of greater than 40 tpy or more.
29. The MSP and the Coker/Heavy Crude Expansion Project together constituted a "major modification" to Mobil's Joliet refinery, as that term is defined at 40 C.F.R. § 52.21(b)(2).

2.B. In the alternative, the Joliet refinery, including the Claus SRP, became subject to PSD regulations in about 1991 based on MSP (without including the Coker/Heavy Crude Expansion Project)

30. As stated in paragraph 24, above, Mobil commenced the MSP in approximately 1991.
31. On March 26, 1991, Mobil submitted a construction permit application for a new Claus train (north train) and tail gas unit. In this application, Mobil requested a lower SO₂ emission limit for the east and west Claus trains to offset the emissions increase from constructing the north Claus train and tail gas unit.
32. Constructing the north Claus train triggered New Source Performance Standards (NSPS), 40 C.F.R. Part 60,

Subpart J, for the entire Claus SRP (north, east, and west trains). (Please refer to the enclosed Finding of Violation.)

33. The SO₂ emission limit under the NSPS is lower than the permit limit requested by Mobil for the east and west trains in its March 26, 1991 permit application.
34. The MSP resulted in a significant net SO₂ emissions increase of greater than 40 tpy or more.
35. The MSP constituted a "major modification" to the Joliet refinery, as that term is defined at 40 C.F.R. § 52.21(b)(2).

3. The Joliet refinery was subject to PSD regulations in about 1998 - Crude Upgrade Project

36. About 1998, Mobil commenced the crude upgrade project (CUP) at its Joliet refinery. The CUP was a series of physical changes in the refinery, including relocating an existing process heater to the crude unit.
37. The CUP resulted in a significant net SO₂ emissions increase of 40 tpy or more.
38. The CUP is a "major modification" to the Joliet refinery, as that term is defined at 40 C.F.R. § 52.21(b)(2).

Leak Detection and Repair

39. In November 1999, U.S. EPA performed a leak detection inspection at the Joliet refinery.
40. Results from comparative VOC monitoring performed by U.S. EPA show an overall facility leak rate more than seven times greater than the leak rate determined by Mobil for its Joliet refinery.

Findings of Violation

1. Oxygen Enrichment System

41. Mobil commenced operating the Claus SRP with the oxygen enrichment system prior to obtaining a PSD permit in accordance with the Act, violating the Illinois SIP rule, 40 C.F.R. § 52.21(i).

42. Mobil failed to employ BACT for SO₂ emissions at the Claus SRP, violating the Illinois SIP rule, 40 C.F.R. § 52.21(j)(3).

2.A. Midwest Strategy Project (MSP) and the Coker/Heavy Crude Expansion Project

43. Mobil commenced a series of modifications, including the MSP and Coker/Heavy Expansion Crude project described in paragraphs 24 through 26 prior to obtaining a PSD permit in accordance with the Act, violating the Illinois SIP rule, 40 C.F.R. § 52.21(i).
44. Mobil failed to employ BACT for SO₂ emissions from the MSP and the Coker/Heavy Crude Expansion Project for its Joliet refinery, violating the Illinois SIP rule, 40 C.F.R. § 52.21(j)(3).

2.B. In the alternative, Midwest Strategy Project (MSP)

45. Mobil began a series of modifications including the MSP described in paragraph 24 prior to obtaining a PSD permit in accordance with the Act, violating the Illinois SIP rule, 40 C.F.R. § 52.21(i).
46. Mobil failed to employ BACT for SO₂ emissions for the MSP at its Joliet refinery, violating the Illinois SIP rule, 40 C.F.R. § 52.21(j)(3).

3. Crude Upgrade Project

47. Mobil began modifying the crude unit prior to obtaining a PSD permit in accordance with the Act, violating the Illinois SIP rule, 40 C.F.R. § 52.21(i).
48. Mobil failed to employ BACT for SO₂ emissions for the CUP at its Joliet refinery, violating the Illinois SIP rule at 40 C.F.R. § 52.21(j)(3).

Leak Detection and Repair

49. Mobil failed to identify in a manner that is obvious to inspection personnel (i.e., physically tag) at least 315 VOM components, violating 35 Ill. Adm. Code § 218.445(d).
50. Of the 315 VOM components referred to in paragraph 49, above, 107 of the refinery components were missing

tags, had not been monitored, and were not included in Mobil's monitoring program, violating 35 Ill. Admin. Code § 218.446.

51. Mobil failed to conduct a component monitoring program which requires, among other things, a test once between March 1 and June 1 of each year by methods referred to in section 218.105(g), i.e., 40 C.F.R. Part 60, Appendix A, Method 21. 35 Ill. Admin. Code § 218.447(a)(1).
52. Mobil failed to submit reports summarizing VOC monitoring results from at least January-February and June in 1996, 1997, and 1998, and from September-December in 1996 and 1997, violating 35 Ill. Admin. Code § 218.449(a).
53. Mobil incorrectly reported the number of components monitored for at least the March-May period on its "Phase 1" reports for 1996, 1997, and 1998, violating 35 Ill. Admin. Code § 218.449(a).
54. During 1996 to 1998, Mobil failed to report on the facility's periodic VOC monitoring reports eight components which leaked for at least 22 days, violating 35 Ill. Admin. Code § 218.449(a).

8/29/00

Date

fn William L. MacDowell
Bharat Mathur, Director
Air and Radiation Division

CERTIFICATE OF MAILING

I, Betty Williams, do hereby certify that a Finding of Violation and a Notice of Violation was sent by Certified Mail, Return Receipt Requested, to:

Mr. Robert Wyman, Refinery Manager
Mobil Oil Corporation
I-55 and Arsenal Road
Joliet, Illinois 60434

I also certify that copies of the Finding of Violation and Notice of Violation was sent by first class mail to:

David Asselmeier, Acting Section Manager
Compliance and Systems Management Section
Bureau of Air
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, Illinois 62702

Harish Narayen, Acting Regional Manager
Illinois Environmental Protection Agency
Region 1
1701 South First Avenue
Maywood, Illinois 60153

on the 30th day of August, 2000.


Betty Williams, Secretary
AECAS, (IL/IN)

CERTIFIED MAIL RECEIPT NUMBER: 2199026444