

**CONSTRUCTION PERMIT
OFFICE OF AIR MANAGEMENT**

**Safety- Kleen Corp
601 Riley Road
East Chicago, IN 46312**

is hereby authorized to construct the following processes and modifications at their existing used oil re-refinery plant as listed on pages 2 through 4 to increase the used oil re-refining capacity from 75 million to 150 million gallons per year.

This permit is issued to the above mentioned company (herein known as the Permittee) under the provisions of 326 IAC 2-1 and 40 CFR 52.780, with conditions listed on the attached pages.

| | |
|---|----------------|
| Construction Permit No.: CP-089-4399-00301 | |
| Issued by: Paul Dubenetzky, Branch Chief Office of Air Management | Issuance Date: |

- (1) one (1) natural gas fired boiler with flue gas recirculation system (SB -822), maximum capacity of 44.6

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- million Btu per hour, and exhausting at stack Pt. SB -822;
- (2) replacement of one (1) natural gas fired process heater, currently identified as H-403, with one (1) natural gas fired process heater with a low NOx burner, maximum capacity to be increased to 10.0 million Btu per hour, and now identified as (H -405), and exhausting at stack Pt. H-405;
 - (3) modification of one (1) process heater with low NOx burner (H -201), natural gas only, maximum capacity to be increased to 45.0 million Btu per hour, and exhausting at stack Pt. H-201;
 - (4) modification of one (1) process heater with low NOx burner (H-402), burning natural gas and distillate oil No. 2 equivalent, maximum capacity to be increased to 19.3 million Btu per hour, and exhausting at stack Pt. H -402;
 - (5) one (1) process heater (H -200) with low NOx burner, burning natural gas, maximum capacity of 84.0 million Btu per hour, and exhausting at stack Pt. H-200;
 - (6) one (1) process heater (H -303) with low NOx burner burning natural gas and distillate oil No. 2 equivalent, maximum capacity of 16.5 million Btu per hour, and exhausting at stack Pt. H-303;
 - (7) one (1) process heater (H -451) with low NOx burner burning natural gas and distillate oil No. 2 equivalent, maximum capacity of 16.3 million Btu per hour, and exhausting at stack Pt. H-451;
 - (8) one (1) process heater (H -452) with low NOx burner burning natural gas and distillate oil No. 2 equivalent, maximum capacity of 10.0 million Btu per hour, and exhausting at stack Pt. H-452;
 - (9) one (1) process heater (H -453) with low NOx burner burning natural gas and distillate oil No. 2 equivalent , maximum capacity of 8.0 million Btu per hour, and exhausting at stack Pt. H-453;
 - (10) one (1) process heater (H -701) with low NOx burner burning natural gas only, maximum capacity of 17.0 million Btu per hour, and exhausting at stack Pt. H-701;
 - (11) one (1) caustic scrubber (V-456);
 - (12) nine (9) Propane De-Asphalting tower and ancillary units (V-701, 702, 703, 705, 706, 707, 708, 709, and 710);
 - (13) two (2) Ethylene Glycol recovery units (V-501, 502);
 - (14) six (6) Hydro treater reactors @ -451A/B, R-453; R-452A/B, and R-454);
 - (15) one (1) 30,030 gallon fixed roof storage tank (T-111), used for the storage of organic materials with a maximum true vapor pressure of 0.00372 psi;
 - (16) one (1) 30,030 gallon fixed roof storage tank (T-112), used for the storage of organic materials with a maximum true vapor pressure of 0.00372 psi;
 - (17) one (1) 30,030 gallon fixed roof storage tank (T-501), used for the storage of organic materials with a maximum true vapor pressure of 0.00372 psi;
 - (18) one (1) 30,030 gallon fixed roof storage tank (T-502),used for the storage of organic materials with a maximum true vapor pressure of 0.00372 psi;
 - (19) one (1) 30,030 gallon fixed roof storage tank (T-503), used for the storage of organic materials with a maximum true vapor pressure of 0.00372 psi;

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- (20) one (1) 175,000 gallon fixed roof storage tank (T-504), used for the storage of organic materials with a maximum true vapor pressure of 0.00372 psi;
- (21) one (1) 30,000 gallon fixed roof storage tank (T-505), used for the storage of organic materials with a maximum true vapor pressure of 0.00372 psi;
- (22) one (1) 30,000 gallon fixed roof storage tank (T-506), used for the storage of organic materials with a maximum true vapor pressure of 0.00372 psi;
- (23) one (1) 30,000 gallon fixed roof storage tank, (T-507), used for the storage of organic materials with a maximum true vapor pressure of 0.00372 psi;
- (24) one (1) 175,000 gallon fixed roof storage tank, (T-508), used for the storage of organic materials with a maximum true vapor pressure of 0.00372 psi;
- (25) one (1) 30,000 gallon fixed roof storage tank, (T-513), used for the storage of organic materials with a maximum true vapor pressure of 0.00372 psi;
- (26) one (1) 30,000 gallon fixed roof storage tank, (T-514), used for the storage of organic materials with a maximum true vapor pressure of 0.00372 psi;
- (27) one (1) 30,000 gallon fixed roof storage tank, (T-917),used for the storage of organic materials with a maximum true vapor pressure of 0.00372 psi;
- (28) one (1) 30,000 gallon fixed roof storage tank, (T-971),used for the storage of organic materials with a maximum true vapor pressure of 0.00372 psi;
- (29) one (1) 30,000 gallon fixed roof storage tank, (T-972),used for the storage of organic materials with a maximum true vapor pressure of 0.00372 psi;
- (30) one (1) 30,000 gallon fixed roof storage tank, (T-973),used for the storage of organic materials with a maximum true vapor pressure of 0.00372 psi;
- (31) one (1) 30,000 gallon fixed roof storage tank, (T-974),used for the storage of organic materials with a maximum true vapor pressure of 0.00372 psi;
- (32) one (1) 200,000 gallon fixed roof storage tank, (T-975),used for the storage of organic materials with a maximum true vapor pressure of 0.00372 psi;
- (33) one (1) 670,000 gallon fixed roof storage tank, (T-980),used for the storage of organic materials with a maximum true vapor pressure of 0.00372 psi;
- (34) one (1) truck loading area for plant #1(L-16), loading heavy fuel oil at a maximum rate of 300 gallons per minute;
- (35) the following existing/new process heaters shall be equipped with low NOX burners:
 - (a) H -301
 - (b) H -302
 - (c) H -401
 - (d) H -404
 - (e) H -405

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- (36) the following existing boilers shall be equipped with flue gas recirculation systems:
- (a) SB -820
 - (b) SB -821

Construction Conditions

General Construction Conditions

1. That the data and information supplied with the application shall be considered part of this permit. Prior to any proposed change in construction which may affect allowable emissions, the change must be approved by the Office of Air Management (OAM).
2. That this permit to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

Effective Date of the Permit

3. That pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.
4. That pursuant to 326 IAC 2-1-9(b)(Revocation of Permits), the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.
5. That notwithstanding Construction Condition No. 6, all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

First Time Operation Permit

6. That this document shall also become a first-time operation permit pursuant to 326 IAC 2-1-4 (Operating Permits) when, prior to start of operation, the following requirements are met:
 - (a) The attached affidavit of construction shall be submitted to the Office of Air Management (OAM), Permit Administration & Development Section, verifying that the facilities were constructed as proposed in the application. The facilities covered in the Construction Permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.
 - (b) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.
 - (c) Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.
 - (d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-1-7.1(Fees).

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- (e) Pursuant to 326 IAC 2-7-4, the Permittee shall apply for a Title V operating permit within twelve (12) months after the source becomes subject to Title V. This 12-month period starts at the postmarked submission date of the Affidavit of Construction. If the construction is completed in phases, the 12-month period starts at the postmarked submission date of the Affidavit of Construction that triggers the Title V applicability. The operation permit issued shall contain as a minimum the conditions in the Operation Conditions section of this permit.

NSPS Reporting Requirement

- 7. That pursuant to the New Source Performance Standards (NSPS), Part 60.7, Subpart A, the source owner/operator is hereby advised of the requirement to report the following for boiler (SB -822) at the appropriate times:

- (a) Commencement of construction date (no later than 30 days after such date);
- (b) Anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
- (c) Actual start-up date (within 15 days after such date); and
- (d) Date of performance testing (at least 30 days prior to such date), when required by a condition elsewhere in this permit.

Reports are to be sent to:

**Compliance Data Section, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, IN 46206-6015**

and

**Department of Environmental Management, NW Indiana Office
Gainer Bank Bldg., Ste 418, 504 N. Broadway
Gary, IN 46402-1921**

The application and enforcement of these standards have been delegated to the IDEM-OAM. The requirements of 40 CFR Part 60 are also federally enforceable.

- 8. That
 - (a) the low NOX burners shall be installed to process heaters H -200, H -201, H -301, H -302, H -303, H -401, H -402, H -404, H -405, H -701, H -451, H -452, and H -453; and
 - (b) flue gas recirculation system shall be installed on the boilers SB -820, SB -821, and SB -822.
- 9. That when the facility is constructed and placed into operation the following operation conditions shall be met:

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Operation Conditions

General Operation Conditions

1. That the data and information supplied in the application shall be considered part of this permit. Prior to any change in the operation which may result in an increase in allowable emissions exceeding those specified in 326 IAC 2-1-1 (Construction and Operating Permit Requirements), the change must be approved by the Office of Air Management (OAM).
2. That the permittee shall comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder.

Preventive Maintenance Plan

3. That pursuant to 326 IAC 1-6-3 (Preventive Maintenance Plans), the Permittee shall prepare and maintain a preventive maintenance plan, including the following information:
 - (a) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices.
 - (b) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions.
 - (c) Identification of the replacement parts which will be maintained in inventory for quick replacement.

The preventive maintenance plan shall be submitted to IDEM, OAM upon request and shall be subject to review and approval.

Transfer of Permit

4. That pursuant to 326 IAC 2-1-6 (Transfer of Permits):
 - (a) In the event that ownership of this lube oil refinery is changed, the Permittee shall notify OAM, Permit Branch, within thirty (30) days of the change. Notification shall include the date or proposed date of said change.
 - (b) The written notification shall be sufficient to transfer the permit from the current owner to the new owner.
 - (c) The OAM shall reserve the right to issue a new permit.

Permit Revocation

5. That pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to construct and operate may be revoked for any of the following causes:
 - (a) Violation of any conditions of this permit.
 - (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.

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- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of 326 IAC 2-1 (Permit Review Rules).

Availability of Permit

6. That pursuant to 326 IAC 2-1-3(l), the Permittee shall maintain the applicable permit on the premises of this source and shall make this permit available for inspection by the IDEM, other public official having jurisdiction.

Performance Testing

7. That pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements) compliance stack tests shall be performed for a representative boiler; and the representative process heaters for oxides of nitrogen (NOx) and carbon monoxide (CO); and sulfur dioxide (SO₂), carbon monoxide (CO), and oxides of nitrogen (NOx) emissions, respectively, within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. These tests shall be performed according to 326 IAC 3-2.1 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner.
- (a) A test protocol shall be submitted to the OAM, Compliance Data Section, 35 days in advance of the test.
 - (b) The Compliance Data Section shall be notified of the actual test date at least two (2) weeks prior to the date.
 - (c) All test reports must be received by the Compliance Data Section within 45 days of completion of the testing.
 - (d) If the results of the stack test performed exceed the level specified in the permit, the following actions shall be taken:
 - (i) Implement appropriate corrective actions within thirty (30) days of receipt of the test results. These actions shall be implemented immediately unless notified by OAM that they are not acceptable. The Permittee shall minimize emissions while the corrective actions are being implemented.
 - (ii) A follow-up second test to demonstrate compliance shall be performed within 120 days. Failure of the second test to demonstrate compliance may be grounds for enforcement action.

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- (e) The boiler and the heaters will be tested for the following emissions limit, only when combusting the natural gas.

NOx Emissions Rate Limit

| | | |
|---------|-------|------------------|
| Boiler | ----- | 30.0 lbs/MM Cuft |
| Heaters | ----- | 55.6 lbs/MM CUFT |

CO Emissions Rate Limit

| | | |
|---------|-------|------------------|
| Boiler | ----- | 34.0 lbs/MM CUFT |
| Heaters | ----- | 61.0 lbs/MM CUFT |

Malfunction Condition

8. That pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

- (a) A record of all malfunctions, including startups or shutdowns of any emission unit or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) or appointed representative upon request.
- (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAM, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
- (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).
- (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

Emission Offset Synthetic Minor Limit

9. That the sulfur dioxide (SO₂) emissions from the source shall be limited to 10.83 tons per month (130 tons per year). Therefore, the Emission Offset rule, 326 IAC 2-3, will not apply.

10. That

- (a) the combined sulfur dioxide emissions from the four process heaters, H-201 (45 MMBtu/hr), H-301 (19.5 MMBtu/hr), H-302 (16.5 MMBtu/hr), and H-303, (16.5 MMBtu/hr) shall not exceed 0.3 pounds per million Btu actual heat input, and 14 lbs/hr;

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- (b) the combined sulfur dioxide emissions from the two process heaters, H-200 (84 MMBtu/hr), and H-701, (17 MMBtu/hr) shall not exceed 0.3 pounds per million Btu actual heat input, and 14 lbs/hr;
- (c) the combined sulfur dioxide emissions from the process heaters, H-401 (15.3 MMBtu/hr), H-402 (19.3 MMBtu/hr), H-404 (10 MMBtu/hr), H-405 (10 MMBtu/hr), H-451 (16.3 MMBtu/hr), H-452 (10 MMBtu/hr), and H-453 (8 MMBtu/hr) shall not exceed 0.3 pounds per million Btu and 16.67 lbs/hr;
- (d) the process heaters H - 200, H - 201, H - 301, H - 302, H - 303, H - 401, H - 402, H - 404, H - 405, H - 451, H - 452, H - 453, and H - 701 shall operate low NOx burners at all times they are in operation, at the parameters established in the compliance stack tests;
- (e) the boilers SB - 820, SB - 821, and SB - 822 shall fire only natural gas; and
- (f) the flue gas recirculation systems controlling the boilers SB - 820, SB - 821, and SB - 822 shall operate at all times these boilers are in operation.

The source can comply with conditions (d), and (f) by keeping the record of the malfunction reports of the NOx burners, and the flue gas recirculation system.

These conditions are necessary to, and will make Emission Offset rule, 326 IAC 2-3, inapplicable to this modification.

11. That the compliance with Operation Condition Nos. 9, 10 (a), (b), and (c) shall be demonstrated in the following manner:
- (a) the quantity of natural gas and No. 2 fuel oil equivalent consumed in each group of process heaters listed in conditions 10 (a), (b), and (c) shall be measured by the flow meters;
 - (b) the average sulfur content of the fuel oils shall be analyzed based on collecting the weekly samples, and analyzing one composite of the weekly samples once every 30 days;
 - (c) the quantity of the off gases consumed, shall be determined by
 - (i) calculating the total combined fired duty for each group of process heaters;
 - (ii) calculating the contribution of the heat duty from natural gas and fuel oils metered data; and
 - (iii) calculating the off gases consumption from the difference between the total heat input and the contribution from natural gas, and fuel oils. This determination shall be made once every 30 days;

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- (d) the annual stack tests shall be conducted to determine sulfur content of the off-gases from the distillation operations, and from hydro treater operations by measuring sulfur dioxide emissions from selected process heaters while combusting off-gases, and natural gases;
 - (e) the sulfur dioxide emissions from the source shall be determined from the total heat input; and amount of sulfur dioxide emissions calculated from the emissions factors from AP - 42 for natural gas, and No. 2 fuel oil equivalent; and
 - (f) the compliance shall be determined using a calendar month average sulfur dioxide emission rate in pounds per million Btu., and pounds per hour for the group of heaters, and the monthly sulfur dioxide limit in tons.
12. That pursuant to 326 IAC 2-1-3(i)(8)
- (a) the bleach shall be added to the scrubber in a continuous mode,
 - (b) the flow rate of the bleach added to the scrubber shall be measured each working shift, and
 - (c) the carbon canisters change-outs shall be done at least twice a month.
13. That a log of information necessary to document compliance with operation permit condition nos. 9,10 (a), (b), (c), and (d), and 12 shall be maintained. These records shall be kept for at least the past 36 month period and made available upon request to the Office of Air Management (OAM).
- (a) A quarterly summary for sulfur dioxide emissions from the source, shall be submitted to:

**Compliance Data Section, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015**

within 30 days after the end of the quarter being reported in the format attached.
 - (b) Unless otherwise specified in this permit, any notice, report, or other submissions required by this permit shall be timely if:
 - (i) delivered by U.S. mail and postmarked on or before the date it is due; or
 - (ii) delivered by any other method if it is received and stamped by IDEM, OAM (and local agency if applicable), on or before the date it is due.
 - (c) All instances of deviations from any requirements of this permit must be clearly identified in such reports.
 - (d) Any corrective actions taken as a result of an exceedance of a limit, an excursion from the parametric values, or a malfunction that may have caused excess emissions must be clearly identified in such reports.

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- (e) The first report shall cover the period commencing the postmarked submission date of the Affidavit of Construction.
- 14. That pursuant to 326 IAC 12 and 40 CFR 60.110b - 60.117b, the petroleum liquid storage tanks (Items 15 through 33) located at this source shall
 - a) keep readily accessible records, each showing the dimensions of the storage tank and an analysis showing the capacity. These records shall be kept for the life of the source, and
 - b) notify the Office of Air Management (OAM) within 30 days, when the maximum true vapor pressure of the liquid exceeds the respective true vapor pressure values for each volume range. This means that the owner or operator shall notify the OAM any time when the owner or operator changes the volatile organic liquid stored in any tank such that the true vapor pressure of the volatile organic liquid stored in the respective tank is increased to a level that exceeds the applicable true vapor pressures of 40 CFR 60.110b(c).
- 15. That pursuant to 326 IAC 12, and 40 CFR 60.48c(g), Subpart Dc, the owner or operator shall record and maintain the records of the amounts of natural gas combusted in the boiler (SB-822) during each day. These records shall be maintained by the owner or operator for a period of two years following the date of such record.
- 16. That pursuant to 326 IAC 7-4-1.1(b), the process heaters H - 200 (H - 101), H - 201, H - 301, H - 302, H - 303, H - 401, H - 402, H - 451 (H - 501), H - 452 (H - 502) H - 404, H - 405 (H - 403), H - 453, and H - 701 may use a combination of natural gas, #2 fuel oil equivalent, and off - gases.

Annual Emission Reporting

- 17. That pursuant to 326 IAC 2-6 (Emission Reporting), the owner/operator of Safety Kleen must annually submit an emission statement for the source. This statement must be received by April 15 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. A copy of this rule is enclosed. The annual statement must be submitted to:

**Technical Support and Modeling Section, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015**

The annual emission statement covers the twelve (12) consecutive month time period starting December 1 and ending November 31.

- 18. That
 - (a) the low NOX burners shall be installed on the existing/new process heaters H-404, 405, 301, 302, 401, 402, 201;
 - (b) the flue gas recirculation systems are installed on the boilers SB-820, and SB-821; and

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- (c) the boiler SB-801, and existing process heater (H-403) shall be removed from the service before the new boilers and heaters are in service. These conditions are necessary to, and will make Emission Offset rule, 326 IAC 2-3, inapplicable to this modification.

Emergency Reduction Plans

19. Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

- (a) The Permittee shall prepare written emergency reduction plans (ERPs) consistent with safe operating procedures.
- (b) These ERPs shall be submitted for approval to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

within 180 calendar days from the issuance date of this permit.

- (c) If the ERP is disapproved by IDEM, OAM, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP. If after this time, the Permittee does not submit an approvable ERP, IDEM, OAM, shall supply such a plan.
- (d) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.
- (e) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.
- (f) Upon direct notification by IDEM, OAM, that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate level. [326 IAC 1-5-3]

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MALFUNCTION REPORT

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
FAX NUMBER - 317 233-5967**

This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE: IT HAS POTENTIAL TO EMIT 25 LBS/HR PARTICULATE ? _____, 100 LBS/HR VOC ? _____, 100 LBS/HR SULFUR DIOXIDE ? _____ OR 2000 LBS/HR OF ANY OTHER POLLUTANT ? _____ EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY Safety Kleen PHONE NO. (219) 397-1131

LOCATION: East Chicago, Indiana
PERMIT NO. 089-4399 AFS PLANT ID: 089-00301 AFS POINT ID: _____ INSP: _____
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____

DATE/TIME MALFUNCTION STARTED: ____/____/19____ _____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE ____/____/19____ _____ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO₂, VOC, OTHER: _____

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____

MEASURES TAKEN TO MINIMIZE EMISSIONS: _____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES:

CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO
PERSONS: _____
CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO
EQUIPMENT: _____
INTERIM CONTROL MEASURES: (IF APPLICABLE)

MALFUNCTION REPORTED BY: _____ TITLE: _____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME: _____

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Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. The requirements of this rule (326 IAC 1-6) shall apply to the owner or operator of any facility which has the potential to emit twenty-five (25) pounds per hour of particulate, one hundred (100) pounds per hour of volatile organic compounds or SO₂, or two thousand (2,000) pounds per hour of any other pollutant; or to the owner or operator of any facility with emission control equipment which suffers a malfunction that causes emissions in excess of the applicable limitation.

326 IAC 1-2-39 “Malfunction” definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. (Air Pollution Control Board; 326 IAC 1-2-39; filed Mar 10, 1988, 1:20 p.m. : 11 IR 2373)

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

Safety- Kleen Corp.
East Chicago, Indiana

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| Month | Heater No. | Total heat input (MMBtu) | Nat. gas burned (MM Cuft) | Off gases burned (MMBtu contributed) | Wt % S in off-gases | No. 2 oil equiv. (1000 gals) | Wt % S in No. 2 oil equiv. | SO ₂ emiss. | | SO ₂ emiss. (tons) |
|-------|------------|--------------------------|---------------------------|---------------------------------------|---------------------|------------------------------|----------------------------|------------------------|-----------|-------------------------------|
| | | | | | | | | (lbs /MM Btu) | (lbs /hr) | |
| | H-201 | | | | | | | | | |
| | H-301 | | | | | | | | | |
| | H-302 | | | | | | | | | |
| | H-303 | | | | | | | | | |
| | H-200 | | | | | | | | | |
| | H-701 | | | | | | | | | |
| | H-401 | | | | | | | | | |
| | H-402 | | | | | | | | | |
| | H-404 | | | | | | | | | |
| | H-405 | | | | | | | | | |
| | H-451 | | | | | | | | | |
| | H-452 | | | | | | | | | |
| | H-453 | | | | | | | | | |
| | Boiler s | | | | | | | | | |
| | Total | | | | | | | | | |

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| Month | Heater No. | Total heat input (MMBtu) | Nat. gas burned (MM Cuft) | Off gases burned (MMBtu contributed) | Wt % S in off-gases | No. 2 oil equiv. (1000 gals) | Wt % S in No. 2 oil equiv. | SO ₂ emiss. | | SO ₂ emiss. (tons) |
|-------|------------|--------------------------|---------------------------|---------------------------------------|---------------------|------------------------------|----------------------------|------------------------|-----------|-------------------------------|
| | | | | | | | | (lbs /MM Btu) | (lbs /hr) | |
| | H-201 | | | | | | | | | |
| | H-301 | | | | | | | | | |
| | H-302 | | | | | | | | | |
| | H-303 | | | | | | | | | |
| | H-200 | | | | | | | | | |
| | H-701 | | | | | | | | | |
| | H-401 | | | | | | | | | |
| | H-402 | | | | | | | | | |
| | H-404 | | | | | | | | | |
| | H-405 | | | | | | | | | |
| | H-451 | | | | | | | | | |
| | H-452 | | | | | | | | | |
| | H-453 | | | | | | | | | |
| | Boilers | | | | | | | | | |
| | Total | | | | | | | | | |

Equations:

a) Nat. Gas: $SO_2 \text{ emissions} = 0.6 \text{ lbs/MMBtu} * \text{MM Cuft} * (1000 \text{ Btu/Cuft}) / (2000 \text{ lbs/ton})$

b) No. 2 oil equiv.: $SO_2 \text{ emissions} = (142 * \text{Wt. \% S lb}) / 1000 \text{ gals} * \text{gals} / (2000 \text{ lbs/ton})$

c) Off-gases:: $SO_2 \text{ emissions} = (\text{Heat input contributed by Off-gases in MMBtu}) * (\text{cuft}/1 \text{ MMBtu}) * (\text{lbs}/\text{cuft}) / (\text{Wt}\% \text{ S}) * 64/32$

$SO_2 \text{ emission rate} = SO_2 \text{ emitted in the month} / \text{Total heat input for the month}$

Submitted by: _____

Title/Position: _____

Signature: _____

Date: _____

**Indiana Department of Environmental Management
Office of Air Management**

Technical Support Document (TSD) for New Construction and Operation

**Safety- Kleen Corp.
601 Riley Road
East Chicago, IN 46312**

The Office of Air Management has reviewed an application from Safety- Kleen Corp. relating to the construction and operation of its proposed expansion to their lube oil re-refinery plant to increase the production rate from 75 to 150 million gallons of lube oil per year.

Stack Summary

| Stack ID | | Operation | Height (feet) | Diameter (feet) | Flow Rate (acfm) | Temperature (°F) |
|----------|------|----------------|---------------|-----------------|------------------|------------------|
| SB-822 | New | Boiler | 53 | 3.25 | 19,130 | 780 |
| H-201 | Mod. | Process heater | 100 | 4.5 | 57,070 | 1485 |
| H-200 | New | Process heater | 100 | | 106,531 | 1485 |
| H-303 | New | Process heater | 110 | 3.0 | 11,942 | 600 |
| H-451 | New | Process heater | 110 | 3.0 | 11,942 | 600 |
| H-452 | New | Process heater | 100 | 3.0 | 14,138 | 1,400 |
| H-453 | New | Process heater | 100 | 3.0 | 14,138 | 1,400 |
| H-402 | Mod. | Process heater | 100 | 3.0 | 14,138 | 1,400 |
| H-701 | New | Process heater | 100 | 2.3 | 8,321 | 800 |

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, the information used in this review was derived from the application and additional document submitted by the applicant.

Lake County was designated as Severe Nonattainment for ozone on December 12, 1993. The initial application for modifications included in this proposal was received on November 15, 1992, which was before the redesignation of Lake County to Severe Nonattainment for ozone was promulgated. However, the U.S. EPA effective date for this redesignation was January 22, 1992, which predates the application submittals date. A number of supplemental submittals were received and to ensure that the application was complete and clear, IDEM requested that a consolidated application be submitted. Additional information was received on April 11, 1995, and August 1, 1995 to fulfill that request. Additional information was also received on December 9, 10, and 16, 1996.

Emissions Calculations

See Appendix A (Emissions Calculation Spreadsheets) for detailed calculations.

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Total Allowable Emissions

Indiana Permit Allowable Emissions Definition (after compliance with applicable rules, based on 8,760 hours of operation per year at the rated capacity and SO₂ emissions limit):

| Pollutant | Emissions (tons/year) |
|------------------------------------|--------------------------|
| Particulate Matter (PM) | 25.6 |
| Particulate Matter (PM10) | 25.6 |
| Sulfur Dioxide (SO ₂) | 352 |
| Volatile Organic Compounds (VOC) | 15.3 |
| Carbon Monoxide (CO) | 76.3 |
| Nitrogen Oxides (NO _x) | 4.78 |

Allowable emissions (as defined in the Indiana Rule) of SO₂, CO, PM, and PM10 are greater than 25, 25, and 15 tons per year respectively. Therefore, pursuant to 326 IAC 2-1, Sections 1 and 3, a construction permit is required.

County Attainment Status

VOC and NO_x are precursors for the formation of ozone. Therefore, VOC and NO_x emissions are considered when evaluating rule applicability relating to the ozone standards. Lake County was designated as severe nonattainment for ozone on December 12, 1993. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3, with major source levels of these pollutants being 25 tons per year, each.

This portion of Lake County has been classified as nonattainment for SO₂, total suspended particulate, and PM10. Therefore, these emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

This portion of Lake County has been classified as attainment for CO. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Source Status

Existing Source PSD and Emission offset Definition (emissions after controls, based on actual emission data submitted by Safety Kleen for NO_x and SO₂ for the last two years at the rated capacity, and 8,760 hours of operation for all other criteria pollutants, at the rated capacity):

| Pollutant | Emissions (ton/yr) |
|-----------------|-----------------------|
| PM | 2.4 |
| PM10 | 2.4 |
| SO ₂ | 92 |
| VOC | 1.96 |
| CO | 25.7 |
| NO _x | 87.5 |

This existing source is not a major stationary source for PM, PM10, and SO₂, because these nonattainment pollutants are not emitted at a rate of 100 tons per year or more.

This existing source is a major stationary source for ozone, because NO_x is emitted at a rate of more than 25 tons per year.

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This existing source is not a major stationary source for CO, because it is not being emitted at a rate of 100 tons per year (significant level) or more.

Proposed Modification

PSD and Emission offset emissions from the proposed modification (after compliance with the applicable rules, based on 8,760 hours of operation per year at the rated capacity and SO₂ emissions limit taken by the applicant):

| Pollutant | PM (ton/yr) | PM10 (ton/yr) | SO ₂ (ton/yr) | VOC (ton/yr) | NOX (ton/yr) | CO (ton/yr) |
|-----------------------------|-------------|---------------|--------------------------|--------------|--------------|-------------|
| Proposed Modification | 25.6 | 25.6 | 38 | 7.66 | 4.78 | 76.3 |
| Contemporaneous increases | - | - | - | 0.0 | 0.0 | - |
| Contemporaneous decreases | - | - | - | - | - | - |
| Net emissions increase | 25.6 | 25.6 | 38 | 7.66 | 4.78 | 76.3 |
| VOC or NOX deminimis levels | - | - | - | 25 | 25 | - |
| Offset threshold levels | 100 | 100 | 100 | - | - | - |
| PSD Significant Level | - | - | - | - | - | 100 |

This modification to an existing major source is not major for PM, PM10, SO₂; and VOC, and NOX because the emissions increases are less than the Emission offset threshold levels; and Emission offset deminimis levels respectively. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply.

This modification to an existing major source for NOX, and VOC is not major for CO because the emissions increase is less than the PSD significant level. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

Federal Rule Applicability

The following storage tanks are subject to the New Source Performance Standard, 326 IAC 12, (40 CFR Part 60.116 (a), (b), and (d) Subpart Kb), Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels).

Pursuant to 40 CFR 60.116(b) (a) and (b), readily accessible records of the tanks showing the dimension of the storage tanks and an analysis showing the capacity of the storage tanks shall be kept for the life of the source.

Pursuant to 40 CFR 60.116(b) (d), the owner or operator shall notify the OAM within 30 days, when the maximum true vapor pressure of the liquid exceeds the respective true vapor pressure values for each volume range.

| Tank No. | Capacity (gals) | True vapor pressure (kPa) |
|----------|-----------------|---------------------------|
| T-111 | 30,030 | 0.00372 |
| T-112 | 30,030 | 0.00372 |
| T-501 | 30,030 | 0.00372 |
| T-502 | 30,030 | 0.00372 |
| T-503 | 30,030 | 0.00372 |

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| | | |
|-------|---------|---------|
| T-504 | 175,000 | 0.00372 |
| T-505 | 30,000 | 0.00372 |
| T-506 | 30,000 | 0.00372 |
| T-507 | 30,000 | 0.00372 |
| T-508 | 175,000 | 0.00372 |
| T-513 | 30,000 | 0.00372 |
| T-514 | 30,000 | 0.00372 |
| T-917 | 30,000 | 0.00372 |
| T-971 | 30,000 | 0.00372 |
| T-972 | 30,000 | 0.00372 |
| T-973 | 30,000 | 0.00372 |
| T-974 | 30,000 | 0.00372 |
| T-975 | 200,000 | 0.00372 |
| T-980 | 670,000 | 0.00372 |

The facilities under this modification are not subject to Emission Standard For Hazardous Air Pollutants, 326 IAC 14 and 40 CFR 61, as no hazardous air pollutants covered under these rules are emitted from these facilities.

The natural gas fired boiler, SB-822, rated at 44.6 MMBtu/hr, is subject to the New Source Performance Standard, 326 IAC 12, (40 CFR Part 60.48c, Subpart Dc). Pursuant to this rule the company has to keep the record of the fuel usage for the boiler.

State Rule Applicability

326 IAC 2-6 (Emission Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting), because the source is located in Lake County, and has the potential to emit volatile organic compounds, and oxides of nitrogen into the ambient air at levels greater than ten tons per year. Pursuant to this rule, the owner/operator of this source must annually submit an emission statement of the source. The annual statement must be received by April 15 each year and must contain the minimum requirements as specified in 326 IAC 2-6-4. A copy of the applicable rule will be enclosed with the permit.

326 IAC 6-1-2 (Nonattainment area particulate limitations: applicability)

The boiler (SB-822) is not specifically listed in 326 IAC 6-1-7, (2) and does not have the potential to emit one hundred (100) tons or more of particulate matter per year or have actual emissions of ten (10) tons or more of particulate matter per year. Therefore, this boiler is not subject to 326 IAC 6-1-2.

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326 IAC 7-1.1-1(Sulfur dioxide emission limitations: applicability)

The new boiler (SB-822), and the existing boilers (SB-820 and SB-821); and the new process heaters (H-303, H-451, H-452, H-453, and H-701), and the existing process heaters (H-201, H-301, H-401, H-402, H-404 and H-405), do not have the potential to emit twenty five (25) tons or more of sulfur dioxide per year or have actual emissions of ten (10) pounds or more of sulfur dioxide per hour each. Therefore, these boilers and process heaters are not subject to 326 IAC 7-1.1-1.

The new process heater (H-200) has the potential to emit 40.7 tons per year, which is more than 25 tons per year. Therefore, this process heater will comply with rule 326 IAC 7-2-1(c)(2). The company has submitted the fuel sampling and reporting data, which is deemed to comply with the above rule.

326 IAC 7-4 (Sulfur dioxide emission limitations: Lake County)

The new boiler (SB-822) burns only natural gas. Therefore, this boiler complies with the rule 326 IAC 7-4.

The existing boilers (SB-820 & SB-821), and process heaters (H-404 & H-405), after modification will burn only natural gas. Therefore, this boiler complies with the rule 326 IAC 7-4.

The existing process heaters (H-301, H-302, H-401, H-402,.) and new process heaters (H-303, H-451, H-452, H-453, and H-701), after modification, have the maximum capacity of less than 20 million Btu per hour.

A variance to burn distillate oil No. 2 equivalent has been issued to Safety- Kleen Corp. for the process heaters H-200, and H-201. Therefore, these process heaters, by this variance, complies with the rule 326 IAC 7-4.

326 IAC 8-4-3 (Petroleum sources: petroleum liquid storage facilities)

Since none of the tanks that store petroleum liquids has a true vapor pressure greater than 1.52 psia, the rule 326 IAC 8-4-3 does not apply to these tanks.

326 IAC 8-1-6 (General provisions relating to VOC rules: general reduction requirements for new facilities)

Since no 326 IAC 8 rule applies to the storage tanks that store VOC, and the potential VOC emissions from each storage tank are less than 25 tons per year; the rule 326 IAC 8-1-6 does not apply to these facilities.

326 IAC 8-4-4 and 8-4-6 (Petroleum sources: bulk gasoline terminals and gasoline dispensing facilities)

The loading racks are not subject to these rules, because the material loaded and unloaded is lube oil, not gasoline.

326 IAC 8-4-2 and 8-4-8 (Petroleum sources: refineries, and leaks from petroleum refineries)

These rules apply to petroleum refineries only. Safety Kleen is determined to be a refinery that is engaged in producing lubricants through redistillation, but it is not a "petroleum " refinery because the materials that are refined, are waste oils from the industry that have already been reclaimed; not the crude oil removed from the earth, and the oils derived from tar sands, shale, and coal.

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 189 hazardous air pollutants set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Construction Permit Application Form Y.

This modification will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Amendments to Clean Air Act.

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Conclusion

The construction of this modification will be subject to the conditions of the attached proposed **Construction Permit No. CP-089-4399, Plt ID No. 089-00301.**

**Indiana Department of Environmental Management
Office of Air Management**

Addendum to the
Technical Support Document for New Construction and Operation

Source Name: Safety- Kleen Corp
Source Location: 601 Riley Road, East Chicago, IN 46312
County: Lake
Construction Permit No.: CP- 089-4399-00301
SIC Code: 2993
Permit Reviewer: Dr. T. P. Sinha

On June 26, and 27, 1997, the Office of Air Management (OAM) had notice published in The Hammond Times, Hammond, Indiana, and The Gary Post Tribune, Gary, Indiana, stating that Safety-Kleen Corp had applied for a construction permit to construct and operate an expansion to its lube oil re-refinery plant to increase the production rate from 75 to 150 million gallons of lube oil per year. The notice also stated that OAM proposed to issue a permit for this installation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On July 24, and July 22, 1997, Mr. Charles Greskovich, a citizen of Whiting, Indiana, and Safety-Kleen Corp., respectively, submitted comments on the proposed construction permit. The summary of the comments and corresponding responses is as follows:

Mr. Charles Greskovich Comments

1. Comment

The commentor is of the opinion that the program portion of public awareness and participation of the IDEM is sadly lacking as evidenced by public input and participation, and non involvement in the permitting process.

The commentor is of the opinion that the staff should not have recommended to the Commissioner that the construction and operation be approved, before the comment period has ended.

The IDEM has failed to protect the health and welfare of humans from hazardous and toxic pollutants. The Lake County is a non-attainable county for air and water. This proposed expansion will add more tons of hazardous air contaminants, which will increase the risk to our health and well being.

1. OAM Response

The purpose of the public notice of the permit is to involve public in permitting process. The comment period allowed by the rule is 30 days. Any one can comment related to the air pollution. The Office of Air Management (OAM) is bound to evaluate each and every comment from the public, elected officials, and the applicant. If there is enough interest, then an open hearing is setup in which written or oral comments are heard. The decision to grant or deny the permit is done after all these processes of public input are evaluated very carefully. The draft permit is a preliminary determination based on an evaluation of the rules.

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The Office of Air Management (OAM) has been granted authority by the General Assembly, and by rules passed by the Air Pollution Control board, to regulate air emissions. These rules do allow facilities to emit controlled amounts of air pollutants. OAM has programs in place to control air pollution to the extent it has regulatory authority, and to minimize air emissions and impact on public health. The proposed permit for Safety-Kleen Corp. complies with all state and federal air regulations. Therefore, the staff is obligated to recommend the proposed permit. The proposed permit is not final until the comments are reevaluated. All comments are evaluated to determine that the permit is sound and meets all rules and regulations.

The U.S. Environmental Protection Agency (EPA) has established health-based National Air Ambient Quality Standards (NAAQS) to protect public health. These air quality standards are established using health-based criteria at a level that allows an adequate margin of safety to protect public health. Lake County currently is designated as a severe non attainment area for volatile organic compounds (VOC), and nitrogen oxides (NOx). It means that Lake County is exceeding the NAAQS emissions levels for VOC, and NOx. In order to reduce the emissions of this county, the rule requires that the source, whose construction or modification of facilities which results in an increase of 25 tons per year for the last five years, shall be restricted to the lowest achievable emission rate, and must offset the emissions in a ratio of 1.3.

The net NOx, and VOC emissions increase from this modification is less than the deminimis value of 25 tons/yr for the last five years. Therefore, this modification is not subject to lowest achievable emission rate, and Emission Offset.

The last two years of sulfur dioxide (SO₂) emissions from this source are 92 tons per year, and the source never emitted SO₂ above the threshold level for a major source. Since the source is minor source for SO₂, the SO₂ emissions from the new equipment are allowed to be emitted up to 99 tons per year. However, the source has opted to limit the SO₂ emissions to 130 tons per year from the existing and new equipment per the variance granted to the company on 12/6/96.

Increase in SO₂ emissions due = Limit taken by the applicant - Actual Emissions
to limit taken by the applicant = (130 - 92) tons/yr
= 38 tons/yr

Other pollutants emissions are below the significant emissions numbers.

Therefore, this modification to an existing plant is minor modification.

The area where the plant is situated is non-attainment for PM, PM10, VOC, NOX, SO2, and CO. It means that the area does not meet the national ambient air quality standard. These emissions increases are not large enough to degrade the air quality further. Had it been a major modification for any of the pollutants, the company would have been required to offset the emissions increase by a ratio larger than 1.0 dependent on the pollutant.

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Under Section 112 of the Clean Air Act, a source is considered a major source if it would emit over ten tons per year of a single hazardous air pollutant or 25 tons per year of combined hazardous air pollutants. The various hazardous air pollutants are emitted in negligible amounts. There is no evidence that at this low level of emissions there would be any health risk.

2. Comment

There is no analysis of ambient air quality in the area affected as required by 326 IAC 2-2-4(a), and 2-2-5 (a).

2. OAM Response

The area where this plant is located in a non-attainment area. It means that the area is not meeting the National Ambient Air Quality Standard (NAAQS). Rules 326 IAC 2-2-4(a) and 2-2-5(a) do not apply to this area. These rules requires the analysis of ambient air due to the increase in emissions due to construction or modification of a source in an attainment or unclassifiable areas only.

3. Comment

The future usage rate and the disposal of chemicals such as ammonia, lube oils, PCB, aluminum chlorohydrate, aluminum oxide, sodium hydroxide, sodium hypochlorite, sulfuric acid, triphenylene, used oils, zinc, Cl-Cl4 are not given in the permit.

3. OAM Response

Generally, the used oils do not contain these chemicals in detectable amounts except PCBs. The disposal of PCB contaminated oils are regulated by the IDEM's Office of Solid and Hazardous Waste Management (OSHWMM). The permit issued by OSHWM restricts the PCB contaminated waste oil to be stored in the designated guard tanks, waste oil to be processed and disposed of using the catalytic hydro treating system normally used in the re-refining process of used oil, and the processed oils not to contain more than 2 ppm PCBs.

4. Comment

The sulfur dioxide emissions are stated as 99 tons per year on page 6 of 8 of Calculation Section, while the source opts to a limit of 130 tons per year of total plant discharge. On page 2 of 5 of the TSD shows sulfur dioxide emissions as 352 tons per year plus an additional 146.5 tons of other pollutants. Is this the process used in permit granting?

The permit allows to near one million pounds of hazardous and toxic discharge. Please explain it.

Is IDEM taking into account the specific sulfur dioxide emission limitations as provided for Lake County in 326 IAC 7-1-8 through 7-1-20?

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4. OAM Response

If the plant does not have any limitation on sulfur dioxide emissions, then it has the capability to emit 352 tons per year. The existing plant, currently, is emitting 92 tons per year of sulfur dioxide. Therefore, it is a minor source for sulfur dioxide, because it is not emitting 100 tons per year or more, the major source threshold. Since it is a minor source for sulfur dioxide, it is allowed to emit 99 tons per year more from the expansion. However, the company has taken a limit of 38 tons per year only from the proposed expansion, making the total emissions from the existing plant and the proposed expansion 138 tons per year.

These emissions are not hazardous or toxic pollutants, but criteria pollutants. The state and federal rules allow the plant to emit these pollutants in the amount given in the permit.

IDEM has taken into account the specific sulfur dioxide emission limitations as provided for Lake County in 326 IAC 7. The general rule 326 IAC 7-4-1.1 prohibits the burning of off-gases, a byproduct of the process, in the process heaters. The company asked for a variance from rule 326 IAC 7-4-1.1 for some of the heaters, when burning off gases produced in the plant.

The use of off-gases as fuel in the process heaters does not result in greater emissions of SO₂ or other pollutants than combustion of fuel currently allowed by the rule. In fact, requiring the combustion of off-gases in a pollution control device would increase emissions of NO_x. The costs of installing and operating a pollution control device are significant. Combusting the off-gases in a pollution control device is an inefficient use of energy usage because additional natural gas would have to be used to fuel the process heaters.

In light of these findings, the OAM, IDEM, granted a variance to Safety Kleen for a period of one year starting December 5, 1996. Subsequently the department commenced rule making to request that the Air Board amend 326 IAC 7-4-1.1 to be consistent with this variance. The Air Board amended the rule on May 1, 1998.

Pursuant to this rule, Safety Kleen is allowed to combust off-gases in the process heaters

Therefore, the proposed expansion is in compliance with these rules.

5. Comment

The present waste water treatment plant emits among other discharges very unpleasant and obnoxious odors. What will 100% increase in plant production generate? Are there VOC in this discharge?

5. OAM Response

The OAM contacted the company for the odor problem. The OAM insisted appropriate measures to combat the odor problem be taken.

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The company's review showed that the sources of odors were primarily from operations associated with the waste treatment plant, the volatile fuel, and asphalt extender. Subsequently, the company has implemented the following changes to both equipment and procedures to reduce the odor problem.

- (a) In October, 1997 Safety-Kleen Corp made an instrumentation upgrade to the waste treatment plant scrubber. Bleach is now added in a continuous mode instead of the previous batch mode. A flowmeter monitors the rate at which bleach is added. This will optimize the operation of the scrubber. This should continue to improve as the plant personnel monitor the performance of the scrubber.
- (b) A carbon canister odor control system has been added to the used oil feed tank.
- (c) The vent piping on two tanks have been redesigned to improve the effectiveness of the carbon canister odor control system.
- (d) The old API separator has been decommissioned and cleaned out. This unit was not completely an enclosed system. The oil is now directed through closed tanks with carbon canisters on the vents.
- (e) All tank relief vents were inspected and with the exception of two (2) were found to be in working order. The two (2) tanks that had defective vents, had new ones installed in November, 1997.
- (f) Three (3) tanks were identified as having roofs that were leaking. All three (3) roofs have been replaced.
- (g) The company made an evaluation of the effectiveness of the carbon canister systems for tanks with volatile fuel and asphalt expander (a material with a very low vapor pressure stored at elevated temperatures having a high potential for odors). This has resulted in an immediate increase in the frequency of carbon canister change-outs on 11 tanks to twice a month. The evaluation also resulted in an increase in the change-out frequency on the rest of the tanks with carbon canisters. Previously, all canisters on-site were changed twice a year.
- (h) A formal complaint log has been established. This will enable the company to investigate a complaint, take action to correct a problem and provide accountability in the company's response to public concerns.
- (i) The odors during upsets and shutdowns (opening units for maintenance and repairs) are inevitable. The company will work towards minimizing the effects of these occurrences.

The OAM has added the following condition no.12 in the permit to minimize the odor problems.

Safety- Kleen Corp.
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Note: Changes in Operations Conditions are crossed out, and the additions are bold faced for emphasis.

12. That pursuant to 326 IAC 2-1-3(i)(8)
- (a) the bleach shall be added to the scrubber in a continuous mode,
 - (b) the flow rate of the bleach added to the scrubber shall be measured each working shift, and
 - (c) the carbon canisters change-outs shall be done at least twice a month.

Preceding Conditions have been renumbered due to this addition.

6. Comment

The application notice by the IDEM for Safety-Kleen recognizes Safety-Kleen as being an oil re-refinery plant. On page 5 of 5 of TSD, Safety-Kleen refuses to admit that it is a refinery and be subject to 326 IAC 8-4-2 and 8-4-8. Please explain why. The extracting any substance from its impurities is refining.

6. OAM Response

Safety-Kleen is a rerefinery of used oils. It is not a refinery per the definition, therefore, rules 326 IAC 8-4-2 and 8-4-8 are not applicable.

7. Comment

Why is Safety-Kleen allowed presently to operate with no contingency plan?

7. OAM Response

A new condition no. 19 is being added to the permit for a contingency plan i. e. an emergency reduction plan for the source to curtail production in case of an episode alert.

Emergency Reduction Plans

19. Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

- (a) The Permittee shall prepare written emergency reduction plans (ERPs) consistent with safe operating procedures.
- (b) These ERPs shall be submitted for approval to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

within 180 calendar days from the issuance date of this permit.

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- (c) **If the ERP is disapproved by IDEM, OAM, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP. If after this time, the Permittee does not submit an approvable ERP, IDEM, OAM, shall supply such a plan.**
- (d) **These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.**
- (e) **Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.**
- (f) **Upon direct notification by IDEM, OAM, that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate level. [326 IAC 1-5-3]**

8. Comment

He requested for a public hearing on the proposed Safety-Kleen permit.

8. OAM Response

When there are a number of people requesting a hearing related to air pollution, then OAM arranges for the hearing. The OAM has limited resources, and it is not possible to have a hearing for every single commentor. The OAM has gone through your comments. After reevaluating your comments, the company was asked to make improvements to reduce odors. The company made the changes in the equipment and operating procedures. The OAM also added additional conditions for the operating procedures to the scrubber so that the scrubber is operating properly. Also an Emergency Reduction Plans (ERPs) was added to the permit condition so that whenever there is a requirement to cut emissions, the company shall curtail the production. The OAM has determined that a public hearing would not add any more benefit to the permit decision.

Safety-Kleen Corp. Comments

Construction Permit

Page 1 of 17 (Now, it has been changed to 18 pages due to addition of some conditions.)

1. Comment

Safety-Kleen Corp. would prefer the source to be known as "an used oil re-refinery". The company will be increasing its used oil re-refining capacity from 75 million to 150 million gallons per year.

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1. OAM Response

The permit has been revised accordingly.

Proposed

Safety- Kleen Corp.....lube oil recovery plant as listed on pages 2 through 4 to increase the lube oil product recovery capacity from 75 million to 150 million gallons per year.

Final

Safety- Kleen Corp..... ~~lube oil recovery~~ **used oil re-refinery** plant as listed on pages 2 through 4 to increase the ~~lube oil product recovery~~ **used oil re-refining** capacity from 75 million to 150 million gallons per year.

Page 2 of 17, Item (2)

2. Comment

Safety-Kleen Corp. proposes that the following verbiage be used to indicate what is intended:

“Replacement of one (1) natural gas fired process heater currently identified as H-403, with one (1) natural gas fired process heater, including the installation of a low NOx burner and an increase in the maximum capacity to 10.0 million Btu per hour. Subsequent to replacement, H-403 will be referred to as H-405 and exhausting at stack Pt. H-405.”

2. OAM Response

The permit has been revised accordingly.

Proposed

(2) modification of one (1) natural gas fired process heater with low NOx burner (H - 405), maximum capacity to be increased to 10.0 million Btu per hour, and exhausting at stack Pt. H-405;

Final

(2) ~~modification~~ **replacement** of one (1) natural gas fired process heater ~~with low NOx burner (H - 405),~~ **currently identified as H-403, with one (1) natural gas fired process heater with a low NOx burner**, maximum capacity to be increased to 10.0 million Btu per hour, **and now identified as (H -405)**, and exhausting at stack Pt. H-405;

Page 2 of 17, Item (11)

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3. Comment

Safety-Kleen Corp. proposes that the following verbiage be used to indicate what is intended:

The new caustic scrubber is properly identified as V-456.

3. OAM Response

The permit has been revised accordingly.

Proposed

(11) one (1) caustic scrubber (V-506);

Final

(11) one (1) caustic scrubber (~~V-506~~) **(V-456)**;

Page 2 of 17, Item (14)

4. Comment

Safety-Kleen Corp. plans to build six (6) hydro treater reactors. They are properly identified as R-451A/B, R-453, R-452A/B, and R-454. These are not emission units. This change is proposed merely for clarification.

4. OAM Response

The permit has been revised accordingly.

Proposed

(14) four (4) Hydro treater reactors @ -501, 502, 503, and 504);

Final

(14) ~~four (4)~~ **six (6)** Hydro treater reactors @ ~~-501, 502, 503, and 504~~(R -451A/B, R-453; R-452A/B, and R-454);

Page 4 of 17, Item 35(c)

5. Comment

H-405 should not be identified as an existing process heater.

5. OAM Response

The permit has been revised accordingly.

Proposed

- (35) the following existing process heaters shall be equipped with low NOx burners:
- (a) H -301
 - (b) H -302
 - (c) H -401
 - (d) H -404
 - (e) H -405

Final

- (35) the following existing **/new** process heaters shall be equipped with low NOx burners:
- (a) H -301
 - (b) H -302
 - (c) H -401
 - (d) H -404
 - (e) H -405

Page 12 of 17, Operations Condition Nos. 17(a) And (c), now 18(a) and (c)

6. Comment

As noted previously, H-405 should not be identified as an existing process heater.

The existing process heater H-403 should also be included in the equipment to be removed from service before new boilers and heaters are in service.

6. OAM Response

The Operations Condition Nos. 17(a) and (c), now 18 (a) and (c) have been revised accordingly.

Proposed

17. That
- (a) the low NOX burners shall be installed on the existing process heaters H-404, 405, 301, 302, 401, 402, 201;

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- (c) the boiler SB-801 shall be removed from the service before the new boilers and heaters are in service. These conditions are necessary to, and will make Emission Offset rule, 326 IAC 2-3, inapplicable to this modification.

Final

~~4718.~~ That

- (a) the low NOX burners shall be installed on the existing **/new** process heaters H-404, 405, 301, 302, 401, 402, 201;
- (c) the boiler SB-801, **and existing process heater (H-403)** shall be removed from the service before the new boilers and heaters are in service. These conditions are necessary to, and will make Emission Offset rule, 326 IAC 2-3, inapplicable to this modification.

Quarterly Report Format and Content

Page 15, 16, and 17 of 17, now page 16, 17, and 18 of 18

7. Comment

The proposed reporting format is not consistent with the sulfur dioxide emission limits for the heater groups as specified on page 9 of 17, Operations Condition Nos. 10 (a) and (b). Specifically H-303 appears to be grouped with the units in Operations Condition No. 10 (b). Safety-Kleen Corp. requests that IDEM allow the source to develop its own reporting format with equivalent information which presents the data needed to document compliance with the sulfur dioxide emission limits.

7. OAM Response

The proposed reporting format has been revised to be consistent with the sulfur dioxide emission limits for the heater groups as specified on page 9 of 18, proposed Operation Condition Nos. 10 (a) and (b), and now Operation Condition Nos. 10 (a), (b), and (c).

It is necessary to provide the format in such a manner that the OAM can determine the compliance status of the source. If Safety-Kleen Corp. proposes the format, the OAM will accept the Safety-Kleen Corp.'s format if it can be determined that the format will verify the compliance with the permit conditions.

Proposed format

| Month | Heater No. | Total heat input (MMBtu) | Nat. gas burned (MM Cuft) | No. 2 oil equiv. (1000 gals) | Wt % sulfur in No. 2 oil equiv. | SO2 emiss. (lbs /MMBtu) | SO2 emiss. (tons) |
|-------|------------|--------------------------|---------------------------|------------------------------|---------------------------------|-------------------------|-------------------|
| | H-200 | | | | | | |
| | H-201 | | | | | | |

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| | | | | | | | | | |
|---------|--|--|--|--|--|--|--|--|--|
| H-451 | | | | | | | | | |
| H-452 | | | | | | | | | |
| H-453 | | | | | | | | | |
| Boilers | | | | | | | | | |
| Total | | | | | | | | | |

Affidavit of Construction

8. Comment

If the IDEM makes changes to the permit based on Safety-Kleen Corp. comments, these changes should be reflected in the Affidavit of Construction.

8. OAM Response

The Affidavit of Construction has been revised accordingly.

Proposed

Item Nos.

- (2) modification of one (1) natural gas fired process heater with low NOx burner (H -405), maximum capacity to be increased to 10.0 million Btu per hour, and exhausting at stack Pt. H-405;
- (11) one (1) caustic scrubber (V-506);
- (14) four (4) Hydro treater reactors

Final

- (2) ~~modification of~~ one (1) natural gas fired process heater with low NOx burner (H -405), maximum capacity ~~to be increased to of~~ 10.0 million Btu per hour, and exhausting at stack Pt. H-405;
- (11) one (1) caustic scrubber ~~(V-506)~~ (V-456);
- (14) ~~four (4)~~ **six (6)** Hydro treater reactors ~~@ -501, 502, 503, and 504~~ (R -451A/B, R-453; R-452A/B, and R-454);

9. Comment

Safety-Kleen Corp. requests concurrence from IDEM that changes can be made during construction of the emission units as long as emissions are not increased and changes are identified as per Condition No. 5 on page 3 of the Affidavit of Construction.

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9. OAM Response

The OAM concurs with Safety-Kleen Corp that changes can be made during construction as long as emissions do not increase.

The OAM has determined that the following additions, and modifications are necessary.

Construction Permit

1. For the performance testings for NOx and CO from the boilers, and heaters, the emissions factors limits for these pollutants have been specified in Operations Condition No. 7.

Proposed

Performance Testing

7. That pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements) compliance stack tests shall be performed for a representative boiler; and process heater for oxides of nitrogen (NOx) and carbon monoxide (CO); and sulfur dioxide (SO₂), carbon monoxide (CO), and oxides of nitrogen (NOx) emissions , respectively ,within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. These tests shall be performed according to 326 IAC 3-2.1 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner.
 - (a) A test protocol shall be submitted to the OAM, Compliance Data Section, 35 days in advance of the test.
 - (b) The Compliance Data Section shall be notified of the actual test date at least two (2) weeks prior to the date.
 - (c) All test reports must be received by the Compliance Data Section within 45 days of completion of the testing.
 - (d) If the results of the stack test performed exceed the level specified in the permit, the following actions shall be taken:
 - (i) Implement appropriate corrective actions within thirty (30) days of receipt of the test results. These actions shall be implemented immediately unless notified by OAM that they are not acceptable. The Permittee shall minimize emissions while the corrective actions are being implemented.
 - (ii) A follow-up second test to demonstrate compliance shall be performed within 120 days. Failure of the second test to demonstrate compliance may be grounds for enforcement action.

Final

Performance Testing

- 7. That pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements) compliance stack tests shall be performed for a representative boiler; and process heater for oxides of nitrogen (NOx) and carbon monoxide (CO); and sulfur dioxide (SO₂), carbon monoxide (CO), and oxides of nitrogen (NOx) emissions, respectively, within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. These tests shall be performed according to 326 IAC 3-2.1 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner.
 - (a) A test protocol shall be submitted to the OAM, Compliance Data Section, 35 days in advance of the test.
 - (b) The Compliance Data Section shall be notified of the actual test date at least two (2) weeks prior to the date.
 - (c) All test reports must be received by the Compliance Data Section within 45 days of completion of the testing.
 - (d) If the results of the stack test performed exceed the level specified in the permit, the following actions shall be taken:
 - (i) Implement appropriate corrective actions within thirty (30) days of receipt of the test results. These actions shall be implemented immediately unless notified by OAM that they are not acceptable. The Permittee shall minimize emissions while the corrective actions are being implemented.
 - (ii) A follow-up second test to demonstrate compliance shall be performed within 120 days. Failure of the second test to demonstrate compliance may be grounds for enforcement action.
 - (e) The boiler and the heaters will be tested for the following emissions limit, only when combusting the natural gas.**

NOx Emissions Rate Limit

| | | |
|---------|-------|------------------|
| Boiler | ----- | 30.0 lbs/MM CUFT |
| Heaters | ----- | 55.6 lbs/MM CUFT |

CO Emissions Rate Limit

| | | |
|---------|-------|------------------|
| Boiler | ----- | 34.0 lbs/MM CUFT |
| Heaters | ----- | 61.0 lbs/MM CUFT |

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2. The condition no. 10 has been revised to be consistent with the 326 IAC 7-4-1.1(b). This will not change the emissions of any pollutant.

Proposed

10. That

- (a) the combined sulfur dioxide emissions from the process heaters, H -201, H -301, and H - 302; and from process heaters H -303, and H -200 individually shall not exceed 0.3 pounds per million Btu;
- (b) the combined sulfur dioxide emissions from the process heaters, H -401, H -402, H -451, H -452, H - 453 and process heater H - 701 individually shall not exceed 0.3 pounds per million Btu;
- (c) the process heaters H - 200, H - 201, H - 301, H - 302, H - 303, H - 401, H - 402, H - 404, H - 405, H - 451, H - 452, H - 453, and H - 701 shall operate low NOx burners at all times they are in operation, at the parameters established in the compliance stack tests;
- (d) the boilers SB - 820, SB - 821, and SB - 822 shall fire only natural gas; and
- (e) the flue gas recirculation systems controlling the boilers SB - 820, SB - 821, and SB - 822 shall operate at all times these boilers are in operation.

The source can comply with conditions (c), and (e) by keeping the record of the malfunction reports of the NOx burners, and the flue gas recirculation system.

These conditions are necessary to, and will make Emission Offset rule, 326 IAC 2-3, inapplicable to this modification.

Final

10. That

- (a) the combined sulfur dioxide emissions from the **four** process heaters, H-201 (**45 MMBtu/hr**), H-301 (**19.5 MMBtu/hr**), H-302 (**16.5 MMBtu/hr**), ~~and from process heaters H-303, (16.5 MMBtu/hr) and H-200~~ individually shall not exceed 0.3 pounds per million Btu **actual heat input, and 14 lbs/hr**;
- (b) **the combined sulfur dioxide emissions from the two process heaters, H-200 (84 MMBtu/hr), and H-701, (17 MMBtu/hr) shall not exceed 0.3 pounds per million Btu actual heat input, and 14 lbs/hr**;
- © ~~b~~) the combined sulfur dioxide emissions from the process heaters, H-401 (**15.3 MMBtu/hr**), H-402 (**19.3 MMBtu/hr**), **H-404 (10 MMBtu/hr), H-405 (10 MMBtu/hr)**, H-451 (**16.3 MMBtu/hr**), H-452 (**10 MMBtu/hr**), **and H-453 (8 MMBtu/hr)** ~~and process heater H-701~~ individually shall not exceed 0.3 pounds per million Btu **and 16.67 lbs/hr**;

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- (d e) the process heaters H - 200, H - 201, H - 301, H - 302, H - 303, H - 401, H - 402, H - 404, H - 405, H - 451, H - 452, H - 453, and H - 701 shall operate low NOx burners at all times they are in operation, at the parameters established in the compliance stack tests;
- (e e) the boilers SB - 820, SB - 821, and SB - 822 shall fire only natural gas; and
- (f e) the flue gas recirculation systems controlling the boilers SB - 820, SB - 821, and SB - 822 shall operate at all times these boilers are in operation.

The source can comply with conditions (d e), and (f e) by keeping the record of the malfunction reports of the NOx burners, and the flue gas recirculation system.

These conditions are necessary to, and will make Emission Offset rule, 326 IAC 2-3, inapplicable to this modification.

- 2. The condition no. 11 has been revised to be consistent with the revised Operation Condition no. 10. This will not change the emissions of any pollutant.

Proposed

- 11. That the compliance with Operation Condition Nos. 9, 10 (a), and (b) shall be demonstrated in the following manner:
 - (a) the quantity of natural gas and No. 2 fuel oil equivalent consumed in each group of process heaters listed in conditions 10 (a) and (b), shall be measured by the flow meters;
 - (b) the average sulfur content of the fuel oils shall be analyzed based on collecting the weekly samples, and analyzing one composite of the weekly samples once every 30 days;
 - (c) the quantity of the off gases consumed, shall be determined by
 - (i) calculating the total combined fired duty for each group of process heaters;
 - (ii) calculating the contribution of the heat duty from natural gas and fuel oils metered data; and
 - (iii) calculating the off gases consumption from the difference between the total heat input and the contribution from natural gas, and fuel oils. This determination shall be made once every 30 days;
 - (d) the annual stack tests shall be conducted to determine sulfur content of the off-gases from the distillation operations, and from Hydro treater operations by measuring sulfur dioxide emissions from selected process heaters while combusting off-gases, and natural gases;

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- (e) the sulfur dioxide emissions from the source shall be determined from the total heat input; and amount of sulfur dioxide emissions calculated from the emissions factors from AP - 42 for natural gas, and No. 2 fuel oil equivalent; and
- (f) the compliance shall be determined using a calendar month average sulfur dioxide emission rate in pounds per million Btu. for the group of heaters, and the monthly sulfur dioxide limit in tons.

Final

- 11. That the compliance with Operation Condition Nos. 9, 10 (a), ~~and~~ (b), **and (c)** shall be demonstrated in the following manner:
 - (a) the quantity of natural gas and No. 2 fuel oil equivalent consumed in each group of process heaters listed in conditions 10 (a) ~~and~~ (b), **and (c)** shall be measured by the flow meters;
 - (b) the average sulfur content of the fuel oils shall be analyzed based on collecting the weekly samples, and analyzing one composite of the weekly samples once every 30 days;
 - (c) the quantity of the off gases consumed, shall be determined by
 - (i) calculating the total combined fired duty for each group of process heaters;
 - (ii) calculating the contribution of the heat duty from natural gas and fuel oils metered data; and
 - (iii) calculating the off gases consumption from the difference between the total heat input and the contribution from natural gas, and fuel oils. This determination shall be made once every 30 days;
 - (d) the annual stack tests shall be conducted to determine sulfur content of the off-gases from the distillation operations, and from hydro treater operations by measuring sulfur dioxide emissions from selected process heaters while combusting off-gases, and natural gases;
 - (e) the sulfur dioxide emissions from the source shall be determined from the total heat input; and amount of sulfur dioxide emissions calculated from the emissions factors from AP - 42 for natural gas, and No. 2 fuel oil equivalent; and
 - (f) the compliance shall be determined using a calendar month average sulfur dioxide emission rate in pounds per million Btu., **and pounds per hour** for the group of heaters, and the monthly sulfur dioxide limit in tons.
- 3. The condition no. 16 has been revised to be consistent with the 326 IAC 7-4-1.1(b). This rule adopted on May 1, 1998, allows all the process heaters to use a combination of natural gas, #2 fuel oil equivalent, and off-gases produced as a byproduct of the process. This will not change the emissions of any pollutant.

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Proposed

16. That pursuant to 326 IAC 7, the process heaters H - 200 (H - 101), H - 201, H - 301, H - 302, H - 303, H - 401, H - 402, H - 451 (H - 501), H - 452 (H - 502) H - 404, H - 405 (H - 403), H - 453, and H - 701 may not burn off gases.

Final

16. That pursuant to 326 IAC ~~7~~ **7-4-1.1(b)**, the process heaters H - 200 (H - 101), H - 201, H - 301, H - 302, H - 303, H - 401, H - 402, H - 451 (H - 501), H - 452 (H - 502) H - 404, H - 405 (H - 403), H - 453, and H - 701 may ~~not burn~~ **use a combination of natural gas, #2 fuel oil equivalent, and** off -gases.
4. The condition no. 13 has been revised to be consistent with the revised Operation Condition no. 10. This will not change the emissions of any pollutant.

Proposed

13. That a log of information necessary to document compliance with operation permit condition nos. 9,10 (a), and (b), and 12 shall be maintained. These records shall be kept for at least the past 36 month period and made available upon request to the Office of Air Management (OAM).

Final

13. That a log of information necessary to document compliance with operation permit condition nos. 9,10 (a), ~~and (b)~~, **(c), and (d)**, and 12 shall be maintained. These records shall be kept for at least the past 36 month period and made available upon request to the Office of Air Management (OAM).

Technical Support Document

1. Proposed

326 IAC 7-4 (Sulfur dioxide emission limitations: Lake County)

The new boiler (SB-822) burns only natural gas. Therefore, this boiler complies with the rule 326 IAC 7-4.

The existing boilers (SB-820 & SB-821), and process heaters (H-404 & H-405), after modification will burn only natural gas. Therefore, these boilers comply with the rule 326 IAC 7-4.

The existing process heaters (H-301, H-302, H-401, H-402,) and new process heaters (H-303, H-451, H-452, H-453, and H-701), after modification, have the maximum capacity of less than 20 million Btu per hour.

A variance to burn distillate oil No. 2 equivalent has been issued to Safety- Kleen Corp. for the process heaters H-200, and H-201. Therefore, these process heaters, by this variance, complies with the rule 326 IAC 7-4.

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Review Engineer: Dr. T. P. Sinha

Final

326 IAC 7-4 (Sulfur dioxide emission limitations: Lake County)

The new boiler (SB-822) burns only natural gas. Therefore, this boiler complies with the rule 326 IAC 7-4.

The existing boilers (SB-820 & SB-821), ~~and process heaters (H-404 & H-405),~~ after modification will burn only natural gas. Therefore, these boilers comply with the rule 326 IAC 7-4.

The existing process heaters (H-301, H-302, H-401, H-402,) and new process heaters (H-303, H-451, H-452, H-453, and H-701), after modification, have the maximum capacity of less than 20 million Btu per hour. Therefore, these heaters comply with the rule 326 IAC 7-4.

A variance to burn distillate oil No. 2 equivalent ~~has been~~ **was** issued to Safety- Kleen Corp. for the process heaters H-200, and H-201. **The Air Board adopted final rule 326 IAC 7-4-1.1(b)(19), allowing these heaters to burn a combination of natural gas, distillate oil No. 2 equivalent, and off-gases .** Therefore, these process heaters, ~~by this variance,~~ comply with the rule 326 IAC 7-4.

2. The following state rule applicability has been added, because it is a Title V source.

State Rules Applicability

326 IAC 2-7 (Part 70 Permit Program)

This existing source has submitted their Part 70 (089-7556-00301) application on February 12, 1996. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

Mail to: Permit Administration & Development Section
Office Of Air Management
100 North Senate Avenue
P. O. Box 6015
Indianapolis, Indiana 46206-6015

Safety- Kleen Corp.
601 Riley Road
East Chicago, IN 46312

Affidavit of Construction

I, _____, being duly sworn upon my oath, depose and say:
(Name of the Authorized Representative)

1. I live in _____ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.

2. I hold the position of _____ for _____
- (Title) (Company Name)

3. By virtue of my position with _____, I have personal
(Company Name)

knowledge of the representations contained in this affidavit and am authorized to make these representations on behalf of _____

(Company Name)

4. I hereby certify that Safety- Kleen Corp., 601 Riley Road, East Chicago, IN 46312, has constructed the following

- (1) one (1) natural gas fired boiler with flue gas recirculation system (SB -822), maximum capacity of 44.6 million Btu per hour, and exhausting at stack Pt. SB -822;
- (2) one (1) natural gas fired process heater (H -405), with a low NOx burner, maximum capacity of 10.0 million Btu per hour, and exhausting at stack Pt. H-405;
- (3) modification of one (1) process heater with low NOx burner (H -201), natural gas only, maximum capacity to be increased to 45.0 million Btu per hour, and exhausting at stack Pt. H-201;
- (4) modification of one (1) process heater with low NOx burner (H-402), burning natural gas and distillate oil No. 2 equivalent, maximum capacity to be increased to 19.3 million Btu per hour, and exhausting at stack Pt. H -402;
- (5) one (1) process heater (H -200) with low NOx burner, burning natural gas, maximum capacity of 84.0 million Btu per hour, and exhausting at stack Pt. H-200;
- (6) one (1) process heater (H -303) with low NOx burner burning natural gas and distillate oil No. 2 equivalent, maximum capacity of 16.5 million Btu per hour, and exhausting at stack Pt. H-303;
- (7) one (1) process heater (H -451) with low NOx burner burning natural gas and distillate oil No. 2 equivalent, maximum capacity of 16.3 million Btu per hour, and exhausting at stack Pt. H-451;

- (8) one (1) process heater (H -452) with low NOx burner burning natural gas and distillate oil No. 2 equivalent, maximum capacity of 10.0 million Btu per hour, and exhausting at stack Pt. H-452;
- (9) one (1) process heater (H -453) with low NOx burner burning natural gas and distillate oil No. 2 equivalent , maximum capacity of 8.0 million Btu per hour, and exhausting at stack Pt. H-453;
- (10) one (1) process heater (H -701) with low NOx burner burning natural gas only, maximum capacity of 17.0 million Btu per hour, and exhausting at stack Pt. H-701;
- (11) one (1) caustic scrubber (V456);
- (12) nine (9) Propane De-Asphalting Tower and Ancillary units (V-701, 702, 703, 705, 706, 707, 708, 709, and 710);
- (13) two (2) Ethylene Glycol Recovery units (V-501, 502);
- (14) six (6) Hydro treater reactors ® -451A/B, R-453, R-452A/B, and R-454);
- (15) one (1) 30,030 gallon fixed roof used oil storage tank (T-111), with a maximum true vapor pressure of 0.00372 psi;
- (16) one (1) 30,030 gallon fixed roof used oil storage tank (T-112), with a maximum true vapor pressure of 0.00372 psi;
- (17) one (1) 30,030 gallon fixed roof ethylene glycol storage tank (T-501);
- (18) one (1) 30,030 gallon fixed roof ethylene glycol storage tank (T-502);
- (19) one (1) 30,030 gallon fixed roof ethylene glycol storage tank (T-503);
- (20) one (1) 175,000 gallon fixed roof ethylene glycol storage tank (T-504);
- (21) one (1) 30,000 gallon fixed roof ethylene glycol storage tank (T-505);
- (22) one (1) 30,000 gallon fixed roof ethylene glycol storage tank (T-506);
- (23) one (1) 30,000 gallon fixed roof ethylene glycol storage tank, (T-507);
- (24) one (1) 175,000 gallon fixed roof ethylene glycol storage tank, (T-508);
- (25) one (1) 30,000 gallon fixed roof ethylene glycol storage tank, (T-513);
- (26) one (1) 30,000 gallon fixed roof ethylene glycol storage tank, (T-514);
- (27) one (1) 30,000 gallon fixed roof lube oil storage tank, (T-917), with a maximum true vapor pressure of 0.00004 psi;
- (28) one (1) 30,000 gallon fixed roof propane de-asphalting storage tank, (T-971), with a maximum true vapor pressure of 0.00004 psi;
- (29) one (1) 30,000 gallon fixed roof propane de-asphalting storage tank, (T-972), with a maximum true vapor pressure of 0.00004 psi;
- (30) one (1) 30,000 gallon fixed roof propane de-asphalting storage tank, (T-973), with a maximum true vapor pressure of 0.00004 psi;
- (31) one (1) 30,000 gallon fixed roof propane de-asphalting storage tank, (T-974), with a maximum true vapor pressure of 0.00004 psi,

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- (32) one (1) 200,000 gallon fixed roof propane de-asphalting storage tank, (T-975), with a maximum true vapor pressure of 0.00004 psi;
- (33) one (1) 670,000 gallon fixed roof lube oil storage tank, (T-980);, with a maximum true vapor pressure of 0.00004 psi;
- (34) one (1) truck loading area for plant #1, designated as L-16, loading heavy fuel oil at a maximum rate of 300 gallons per minute;
- (35) the following existing process heaters will be equipped with low NOx burners:
 - (a) H -301
 - (b) H -302
 - (c) H -401
 - (d) H -404
 - (e) H -405
- (36) the following existing boilers will be equipped with flue gas recirculation system:
 - (a) SB -820
 - (b) SB -821

in conformity with the requirements and intent of the construction permit application received by the Office of Air Management on November 15, 1992 and as permitted pursuant to **Construction Permit No. CP-089-4399, Plant ID No. 089-00301** issued on _____

- 5. Additional (?operations/facilities) were constructed/substituted as described in the attachment to this document and were not made in accordance with the construction permit. (Delete this statement if it does not apply.)
- 6. I hereby certify that Safety- Kleen Corp. is now subject to the Title V program and will submit a Title V (or FESOP) operating permit application within twelve (12) months from the postmarked submission date of this Affidavit of Construction.

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Further Affiant said not.
I affirm under penalties of perjury that the representations contained in this affidavit are true, to the best of my information and belief.

Signature

Date

STATE OF INDIANA)
)SS

COUNTY OF _____)

Subscribed and sworn to me, a notary public in and for _____
County and State of Indiana on this _____ day of _____, 19 ____
_____ .

My Commission expires: _____

Signature

Name (typed or printed)

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APPENDIX A

The emissions after the modification will be generated by the following:

- A. Existing and new boilers
- B. Existing and new process heaters
- C. Existing and new tanks
- D. Loading racks
- E. Oil water separators
- F. Blowdown system
- G. Cooling towers

Methodology:

Ef = Emissions factor

For natural gas:
$$\frac{(\text{MMBtu/hr} * 8760 \text{ hr/yr} * \text{Ef lb/MMcf})}{(1000 \text{ Btu/cf} * 2000 \text{ lb/ton})} = (\text{ton/yr})$$

For distillate oil :
$$\frac{(\text{MMBtu/hr} * 8760 \text{ hr/yr} * \text{Ef lb/Tgal})}{(140,000 \text{ Btu/gal} * 2000 \text{ lb/ton})} = (\text{ton/yr})$$

no.2 equivalent

The NOx emission factor was given by the manufacturer of the low NOx burner, which is claimed to be 33% less than that given by AP-42 factor.

A. Existing and new boilers:

All boilers combust natural gas only.
These boilers will be equipped with the flue gas recirculation systems.
The emissions factors were taken from AP-42, Tables 1.4-1, 2, and 3

| | | | | | | |
|-----------------------------|-----------|-----------|------------|-------------|-----------|-----------|
| | PM | PM10 | SO2 | VOC | CO | NOx |
| Emiss. factor, Ef (lb/MMcf) | 14 | 14 | 0.6 | 2.78 | 34 | 30 |

| Boilers | | Capacity (MMbtu/hr) | PM (ton/yr) | PM10 (ton/yr) | SO2 (ton/yr) | VOC (ton/yr) | CO (ton/yr) | NOx (ton/yr) |
|--------------|---------|------------------------|----------------|------------------|-----------------|-----------------|----------------|-----------------|
| Existing | SB-801* | 36.0 | 2.21 | 2.21 | 0.09 | 0.44 | 5.36 | 4.73 |
| Existing | SB-820 | 44.6 | 2.73 | 2.73 | 0.12 | 0.54 | 6.64 | 5.86 |
| Existing | SB-821 | 44.6 | 2.73 | 2.73 | 0.12 | 0.54 | 6.64 | 5.86 |
| New | SB-822 | 44.6 | 2.73 | 2.73 | 0.12 | 0.54 | 6.64 | 5.86 |
| Total | | | 10.41 | 10.41 | 0.45 | 2.07 | 25.29 | 22.31 |

* Operation will be discontinued

| | | | | | | | | |
|-----------------|--|--|-------------|-------------|-------------|-------------|--------------|--------------|
| New | | | 2.73 | 2.73 | 0.12 | 0.54 | 6.64 | 5.86 |
| Existing | | | 7.68 | 7.68 | 0.33 | 1.52 | 18.64 | 16.45 |

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B. Existing and new process heaters :

1. Natural gas-fired process heaters:

The potential emissions are based on natural gas combustion, 8,760 hours of operation, and emission factors obtained from EPA AP-42, except for NOx . The NOx emission factor was given by the manufacturer of the low NOx burner, which is claimed to be 33% less than that given by AP-42 factor.

| | | | | | | |
|-----------------------------|----|------|-----|------|----|------|
| | PM | PM10 | SO2 | VOC | CO | NOx |
| Emiss. factor, Ef (lb/MMcf) | 14 | 14 | 0.6 | 2.78 | 61 | 55.6 |

| | | Capacity (MMBtu/hr) | PM (ton/yr) | PM10 (ton/yr) | SO2 (ton/yr) | VOC (ton/yr) | CO (ton/yr) | NOx (ton/yr) |
|-------------------------|--------|-------------------------|----------------|------------------|-----------------|-----------------|----------------|-----------------|
| Existing | H-404 | 10.00 | 0.61 | 0.61 | 0.03 | 0.12 | 2.67 | 2.44 |
| Existing | H-405* | 3.65 | 0.22 | 0.22 | 0.01 | 0.04 | 0.98 | 0.89 |
| Increase | H-405* | 6.35 | 0.39 | 0.39 | 0.02 | 0.08 | 1.70 | 1.55 |
| | | Total | 1.23 | 1.23 | 0.05 | 0.24 | 5.34 | 4.87 |
| New | | | 0.39 | 0.39 | 0.02 | 0.08 | 1.70 | 1.55 |
| Existing | | | 0.84 | 0.84 | 0.04 | 0.17 | 3.65 | 3.32 |
| Exist & Incr | | | 1.23 | 1.23 | 0.05 | 0.24 | 5.34 | 4.87 |

*Prev H-403

2. Process heaters combusting natural gas, no. 2 distillate oil equivalent and off-gases produced in the plant.

Based on the emissions factors of AP-42, Tables 1.3-2, 1.3-12, and 1.4-3 the worst case pollutants that are generated by these fuels are PM, PM10, and NOx, for no. 2 fuel oil; and VOC, and CO for natural gas. The SO2 emissions is based on emissions limit of 0.3 lbs/MMbtu. Low NOx burners will be installed to all of these process heaters.

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| | | | | | | |
|--------------------------------------|----------|----------|------------|-------------|-------------|-------------|
| | PM | PM10 | SO2* | VOC | CO | NOx |
| Nat. gas emiss. factor (lb/MMCuft) | - | - | | 2.78 | | |
| Dist. oil #2 emiss. factor (lb/Kgal) | 2 | 2 | 0.3 | | 5.00 | 13.4 |

| | Capacity | PM (ton/yr) | PM10 (ton/yr) | SO2 (ton/yr) | VOC (ton/yr) | CO (ton/yr) | NOx (ton/yr) | |
|---|---------------|----------------|------------------|-----------------|-----------------|----------------|-----------------|---------------|
| Existing | H-301 | 19.50 | 1.22 | 1.22 | 25.62 | 0.24 | 3.05 | 8.17 |
| Existing | H-302 | 16.50 | 1.03 | 1.03 | 21.68 | 0.20 | 2.58 | 6.92 |
| Existing | H-401 | 15.30 | 0.96 | 0.96 | 20.10 | 0.19 | 2.39 | 6.41 |
| Existing | H-402 | 11.70 | 0.73 | 0.73 | 15.37 | 0.14 | 1.83 | 4.90 |
| Existing | H-201 | 27.30 | 1.71 | 1.71 | 35.87 | 0.33 | 4.27 | 11.44 |
| Increase | H-402 | 7.60 | 0.48 | 0.48 | 9.99 | 0.09 | 1.19 | 3.19 |
| Increase | H-201 | 17.70 | 1.11 | 1.11 | 23.26 | 0.22 | 2.77 | 7.42 |
| New | H-200 | 84.00 | 5.26 | 5.26 | 110.38 | 1.02 | 13.14 | 35.22 |
| New | H-303 | 16.50 | 1.03 | 1.03 | 21.68 | 0.20 | 2.58 | 6.92 |
| New | H-451 | 16.30 | 1.02 | 1.02 | 21.42 | 0.20 | 2.55 | 6.83 |
| New | H-452 | 10.00 | 0.63 | 0.63 | 13.14 | 0.12 | 1.56 | 4.19 |
| New | H-453 | 8.00 | 0.50 | 0.50 | 10.51 | 0.10 | 1.25 | 3.35 |
| New | H-701 | 17.00 | 1.06 | 1.06 | 22.34 | 0.21 | 2.66 | 7.13 |
| Total | | | 16.73 | 16.73 | 351.36 | 3.26 | 41.83 | 112.10 |
| New | | | 11.08 | 11.08 | 232.71 | 2.16 | 27.70 | 74.25 |
| Existing | | | 5.65 | 5.65 | 118.65 | 1.10 | 14.13 | 37.86 |
| Exist. & Incr. | | | 7.23 | 7.23 | 151.90 | 1.41 | 18.08 | 48.46 |
| All burning nat. gas only | 267.40 | | 16.40 | 16.40 | 0.70 | 3.26 | 71.44 | 65.12 |
| All burning nat. gas only, existing and increase | | | | | | | | 28.15 |

The applicant has taken a SO2 limit of 130 tons per year from the whole plant.

$$\begin{aligned}
 \text{Potential NOx emissions due to this project to achieve the operational goal} &= \text{Pot NOx emiss.} \\
 &= [(\text{Pot. NOx emiss./Pot. SO2 emiss.}) * (\text{Limited SO2 emiss.})] \\
 &\quad + \text{NOx emiss. due to nat. gas in heaters and boilers} \\
 &= \{ (112.1/351.4) * 130 \} + 22.31 + 4.87 \\
 &= 68.7 \text{ tons/yr}
 \end{aligned}$$

However, when burning only nat. gases in all boilers and heaters

$$\begin{aligned}
 \text{NOx emissions} &= (22.31 + 4.87 + 65.12) \text{ tons/yr} \\
 &= 92.3 \text{ tons/yr}
 \end{aligned}$$

C. Existing and new storage tanks:

The VOC emissions from the existing and new equipment have been calculated by the applicant.

Total VOC emissions from the existing and new equipment = 3.0 tons/yr

Increase in VOC emissions = (3.0/2.0) = 1.5 tons/yr

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D. Loading racks:

The emissions factor for the loading rack is taken from AP-42, Table 5.2.

The volatile organic compound (VOC) emissions will be generated from the loading racks.

$$LL = 12.46 * ((S * P * M) / (T))$$

where:

- LL = Loading loss, lb/Tgal
- M = Molecular weight of vapor, lb/lbmol
- P = True vapor pressure of liquid, psia
- T = Temperature of bulk liquid, R
- S = Saturation factor

Based on the above equation, the VOC emissions can be determined.

The maximum annual throughput rate is 150 million (MM) gallons per year.

$$\text{Controlled VOC emissions} = LL * \text{Loading rate} * [(100 - \text{Cap. Eff.}) / 100] * [(100 - \text{Cont eff.}) / 100]$$

There are no controls on the loading racks.

| Liquid | S (No dim) | M (lb/lbmol) | P (psia) | T (R) | LL (lb/Tgal) | Uncont. emiss. (ton/yr) |
|---------------|---------------|-----------------|-------------|----------|-----------------|----------------------------|
| lube oil etc. | 0.6 | 50 | 0.00372 | 560 | 0.0025 | 0.19 |

$$\text{Total VOC Emissions} = (150 \text{ MM gals/yr}) / (75 \text{ MM gals/yr}) * 0.19 \text{ tons/yr} = 0.38 \text{ tons/yr}$$

$$\text{Increase in VOC emissions} = (0.38 \text{ tons/yr}) / 2.0$$

$$= \mathbf{0.19 \text{ tons/yr}}$$

E. Oil water separator emissions:

AP-42 Chapter 5.1 suggests several computer programs that can be used to determine the VOC emissions that are generated due to wastewater treatment. Based on Water 8 program, the VOC emissions increase is estimated to be 2.8 tons per year from the proposed operations.

$$\text{Uncontrolled VOC emissions} = 2.8 \text{ tons/yr}$$

F. Blowdown system:

The re-refinery has a vapor collection system to collect all off-gases from the process units and pressure relief devices. The collected offgases are then combusted in the process heaters.

These off-gas emissions are estimated as part of the process unit emission

G. Cooling Towers:

Existing cooling tower water flow rate is 4000 gallons per minute.

It is not expected to increase due to the facilities expansion.

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NOx Emissions:

The applicant has taken a SO2 limit of 130 tons per year from the whole plant.

Increase in NOx emissions due to this project to achieve the operational goal = Pot NOx emiss. - Actual NOx emiss. (Avg. of two years)

$$= [92.3 - (89.46 + 85.58)/2]$$

$$= 4.78 \text{ tons/yr} < 25 \text{ tons/yr}$$

Total controlled NOx emissions from the existing facilities after the modification = (16.45 + 4.87 + 68.7*48.46/112) tons/yr = 51.1 tons/yr

The existing facilities are limited to NOx emissions limit of 99 tons/yr, therefore, the source NOx emissions limit is not relaxed due to this modification.

There are no NOx emissions increases from this source during the last 5 years. Therefore, the net NOx emissions increase from this modification is less than the the deminimis value of 25 tons per year.

This modification is not major for NOx.

VOC Emissions:

Increases in VOC are not scaled down, because the VOC emissions may stay the same at reduced SO2 emissions.

Increase in VOC emissions due to this project to achieve the operational goal excluding the fug. emiss. = Future VOC emissions - Actual VOC emissions (Avg. of two years)

$$= [(2.07 - 0.44 + 0.24 + 3.26 + 1.5 + 0.19 + 2.8) - (1.92 + 2.003)/2] \text{ tons/yr}$$

$$= (9.62 - 1.96) \text{ tons/yr}$$

$$= 7.66 \text{ tons/yr}$$

$$< 25 \text{ tons/yr}$$

There are no VOC emissions increases from this source during the last 5 years. Therefore, the net VOC emissions increase from this modification is less than the deminimis value of 25 tons per year.

This modification is not major for VOC.

PM, PM10, and CO Emissions

Future PM emissions = (10.41 + 1.23 + 16.40) tons/yr = 28.0 tons/yr

Future PM10 emissions = (10.41 + 1.23 + 16.40) tons/yr = 28.0 tons/yr

Future CO emissions = (25.3 + 5.34 + 71.4) tons/yr = 102.0 tons/yr

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SO2 emissions

The last two years of SO2 emissions from this source are 92 tons per year, and the source never emitted SO2 above the threshold level for a major source.

Since the source is minor source for SO2, the SO2 emissions from the modification are allowed to be emitted up to 99 tons per year. However, the source has opted to limit the SO2 emissions to 130 tons per year from the total plant per the variance issued on 12/5/96.

$$\begin{aligned} \text{Increase in SO2 emissions due} &= \text{Limit taken by the applican} - \text{Actual emissions} \\ \text{to limit taken by the applicant} &= (130 - 92) \text{ tons/yr} \\ &= 38 \text{ tons/yr} \end{aligned}$$

PM, PM10, and CO Emissions:

| | PM* (ton/yr) | PM10* (ton/yr) | CO*(ton/yr) |
|------------------------|--------------|----------------|-------------|
| Existing emissions | 2.40 | 2.40 | 25.70 |
| Future cont. emissions | 28.00 | 28.00 | 102.00 |
| Increase in emissions | 25.60 | 25.60 | 76.30 |

*As provided by the applicant (Avg. emissions of 1994 and 1995)

Fugitive VOC emissions from the valves, flanges, and pumps

Most of the equipment at this plant are in heavy liquid service. The emission factors for the equipment in heavy liquid factors are provided in USEPA document EPA-450/3-86-002, "Emission factors for Equipment Leaks of VOC and HAP" (January 1986)

The fugitive VOC emissions are calculated by the applicant to be 76 tons per year from the existing equipment.

The applicant has estimated the fugitive emissions increase from the valves, flanges, and pumps to be 10 % of the existing emissions.

$$\begin{aligned} \text{Increase in VOC emissions} &= 10\% * 76 \text{ tons/yr} \\ &= 7.6 \text{ tons/yr} \end{aligned}$$

Finally, since this source is determined not to be a petroleum refinery, this source is determined not to be one of the 28 listed source categories. Thus, the fugitive VOC emissions are not counted towards PSD or Emission Offset emissions.

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| | | Molybdenum | Nickel | Vanadium |
|-----------------------------|---------------------|---------------------|-----------------|-------------------|
| Emiss. factor, Ef (lb/MMcf) | | 5.81E-04 | 3.61E-03 | 3.21E-03 |
| | Capacity (MMbtu/hr) | Molybdenum (ton/yr) | Nickel (ton/yr) | Vanadium (ton/yr) |
| SB-822 | 44.6000 | 0.0000 | 0.0000 | 0.0000 |
| H-200 | 84.0000 | 0.0000 | 0.0000 | 0.0000 |
| H-303 | 16.5000 | 0.0000 | 0.0000 | 0.0000 |
| H-451 | 16.3000 | 0.0000 | 0.0000 | 0.0000 |
| H-452 | 10.0000 | 0.0000 | 0.0000 | 0.0000 |
| H-453 | 8.0000 | 0.0000 | 0.0000 | 0.0000 |
| H-701 | 17.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 |

No significant HAPs are being emitted from this source.

Petroleum refinery definition:

40 CFR 60.101(a), defines a petroleum refinery as any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking or reforming of unfinished petroleum derivatives.

Further, 40 CFR 60.101(b) defines the petroleum as the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

Based on the above definitions, Safety Kleen is determined to be a refinery because it produces lubricants through redistillation, but it is not a "petroleum" refinery because the materials that are refined, are waste oils from industry that have already been reclaimed, not crude oils from the earth.