

US EPA ARCHIVE DOCUMENT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JAN 21 2016

REPLY TO THE ATTENTION OF:

Jason R. Shoff
Refinery Manager
Safety-Kleen Systems, Inc.
601 Riley Road
East Chicago, Indiana 46312-1698

Dear Mr. Shoff:

The U.S. Environmental Protection Agency has received your request dated September 30, 2015, for approval of a demonstration run of PCB contaminated used oil through Safety-Kleen's hydrotreater at the East Chicago, Indiana facility. The intent of the demonstration run is to gather data to support your facilities request for modifications to the EPA October 2, 1998, approval for treatment of polychlorinated biphenyl (PCB) contaminated used oil via hydrotreatment. The request included a Demonstration Plan which identified the procedures you intend to follow during the demonstration. On November 20, 2015, EPA and the Indiana Department of Environmental Management (IDEM) visited your facility in East Chicago, Indiana, to discuss the details of the request.

Safety-Kleen conducted previously-approved demonstration runs in 2009 and 2012 for the purpose of increasing the feed rate to the hydrotreater. It is EPA's understanding that (1) the 2009 run was unsuccessful because of the low concentration of PCBs used during the demonstration and a feed rate lower than the desired demonstrated feed rate, and that (2) the 2012 run was unsuccessful because the desired feed rate of 175 gallons per minute (gpm) was not maintained because of difficulty with feeding the VFS fuel stream to the hydrotreater which in turn caused abnormal pressure drops in the guard reactors (VFS fuel is not fed to the hydrotreater during normal operations). Safety-Kleen plans to remedy this by slip-streaming the VFS fuel, into other distillation fractions from the original PCB impacted used oil, at a controlled rate into the Guard Reactors during the demonstration run. In addition, it is EPA's understanding that Safety-Kleen plans to use waste oil with a concentration of approximately 34 parts per million (ppm) PCBs for the requested demonstration run.

The EPA has considered your specific request for modification of the 1998 approval and for conducting a demonstration run. By this letter, EPA hereby approves your request to conduct a demonstration run as described in your request dated September 30, 2015, with the conditions noted in the paragraph below. In addition, EPA is approving the additional volume of approximately 423,000 gallons of PCB contaminated used oil to be processed as part of the demonstration run along with the batch quantity of 376,600 gallons (total of approximately 800,000 gallons).

Conditions for this approval of the demonstration run (as stated in the September 30, 2015 request) are as follows:

1. Pursuant to Condition 20 in the "Conditions of Approval" of the October 2, 1998, approval, Safety-Kleen must notify EPA 30 days prior to commencing this demonstration run. While finalizing this letter, Safety-Kleen has provided this notification and a tentative date of the Demonstration Run of January 26, 2016, which EPA approves.
2. The approximate 800,000 gallons of PCB contaminated used oil must be treated in two to three batches, depending on total volume (each batch must not exceed 376,600 gallons), and EPA must be notified of the date that each batch will be treated. This overall volume does not include liquids generated during the decontamination of the used oil re-refining system either between or at the completion. Those oils must be managed as PCB containing and also be treated as required by the original October 2, 1998 approval.
3. For the demonstration run, you must follow all of the conditions including **all of the sampling** required in Attachment II in the October 2, 1998, approval and the modification of May 23, 2003, and you must also follow the specific modifications to Condition No. 29, which are described in your September 30, 2015, demonstration request that are attached with this letter. Following the demonstration run, EPA will consider the request to eliminate some of the sampling requirements in the 1998 approval.
4. During the demonstration run, only the 34 ppm PCB-contaminated oil may be put through the distillation unit and hydrotreater. It may not be slip-streamed with other batches of non-PCB containing oil.
5. Only the feed rate and PCB concentrations demonstrated to successfully destroy PCBs will be used in setting hydrotreater conditions in any modification to the 1998 approval.
6. A report for this Demonstration Run must be submitted to EPA and IDEM within 120 days following the completion of the processing of the third batch regardless of whether the demonstration run was successful. The report must include the following sections at a minimum:
 - a. Report cover
 - b. Table of contents
 - c. Certification letter
 - d. Summary
 - e. Process Operation
 - f. Sampling and Monitoring Procedures
 - g. Analytical Procedures
 - h. Test Results
 - i. Quality Assurance Summary
 - j. Visits and Audits
 - k. Closure
 - l. Waste Disposal Manifests
 - m. Observations and Comments
 - n. Appendices

The analytical data must be validated and a data validation report submitted as an appendix to the report. The test results section should include a summary table of all results and a description of the results.

7. If the demonstration run is successful, revised permit language with conditions desired must be submitted within 90 days following the submittal of the demonstration run report.

If you have any questions regarding this letter, please contact Mary Setnicar of my staff at (312) 886-0976.

Sincerely,

Michael D. Harris ^{for M.G.}

Margaret M. Guerriero
Director
Land and Chemicals Division

Enclosure

cc: George Ritchotte, IDEM
Mary Setnicar, EPA
Lisa Graczyk, EPA

Modifications to Condition 29 for Demonstration Run

29. S-K must maintain the following key operating conditions during the processing of PCB contaminated waste oil.

Key Process Variable	Operating Range	Time Limit for Correcting excursion (Before waste oil feed cut-off)	Deviation that would require waste oil feed cut-off (1 minute)
Feed to Pre-treat/dehydration (FI201)	≤ 240 gpm 100-190 gpm	5 minutes	---
Feed to Distillation (FI208)	≤ 220 gpm 100-180 gpm	5 minutes	---
Feed Concentration to Distillation (FI208)	≤ 200 ppm	---	---
Feed Rate to Evaporator#1 (FI 330)	≤ 100 gpm 50-80 gpm	5 minutes	---
Light Vacuum Oil Heater Outlet Temp. (TI 3018)	@ or above by 5% 530-550 °F	5 minutes	---
Light vacuum Tower Pressure (PIC 306)	≤ 30 mm Hg 10-14 mm Hg	15 minutes	4 mm Hg
Medium Vacuum Oil Temp (TI391)	620-640 °F	15 minutes	15 °F
Medium Vacuum Oil Evapo-rator Pressure (PIC 304)	8-12 mm Hg	15 minutes	4 mm Hg
Heavy Vacuum Oil Heater Outlet Temp (TI 392)	>670 °F	5 minutes	10 °F

Key Process Variable	Operating Range	Time Limit for Correcting excursion (Before waste oil feed cut-off)	Deviation that would require waste oil feed cut-off (1 minute)
Heavy Vacuum Oil Evaporator Pressure (PIC 305)	3-9 mm Hg 6-9 mm Hg	15 minutes	2 mm Hg
Hydrotreater System Pressure	>800 psi	20 minutes	25 psi
Hydrotreater Feed Rate (FI 404)	≤120 gpm ≤175 gpm	5 minutes	15 gpm
Reactor R402 R-451/R-403/R-404 Temperature	>565 °F	5 minutes	10 °F
Reactor R-405 R404 Temperature	>570 °F	5 minutes	10 °F