R307. Environmental Quality, Air Quality.

R307-326. Ozone Nonattainment and Maintenance Areas: Control of Hydrocarbon Emissions in Petroleum Refineries.

R307-326-1. Purpose.

The purpose of R307-326 is to establish Reasonably Available Control Technology (RACT), as required by section 182(2)(A) of the Clean Air Act, for the control of hydrocarbon emissions from petroleum refineries that are located in ozone nonattainment and maintenance areas. The rule is based on federal control technique guidance documents.

R307-326-2. Applicability.

R307-326 applies to the owner or operator of any petroleum refinery located in any ozone nonattainment or maintenance area.

R307-326-3. Definitions.

The following additional definitions apply to R307-326.

"Accumulator" means the reservoir of a condensing unit receiving the condensate from the condenser.

"Condenser" means any device that removes condensable vapors by a reduction in the temperature of captured gases.

"Control System" means any number of control devices, including condensers, that are designed and operated to reduce the quantity of VOCs emitted to the atmosphere.

"Hot Well" means the reservoir of a condensing unit receiving the warm condensate consisting primarily of water from the condenser.

"Petroleum Refinery Complex" means any source or installation engaged in producing gasoline, aromatics, kerosene, distillate fuel oils, residual fuel oils, lubricants, asphalt, or other products through distillation of petroleum or through redistillation, cracking, rearrangement, or reforming of unfinished petroleum derivatives.

"Process Drain" means any drain used in a refinery complex on equipment that processes or transfers a VOC or a mixture of VOCs.

"Process Unit Turnaround" means the procedure of shutting a refinery unit down after a run to do necessary maintenance and repair work and putting the unit back in operation.

"Vacuum Producing System" means any reciprocating, rotary, or centrifugal blower or compressor, or any jet ejector or device that takes suction from a pressure below atmospheric and discharges against atmospheric pressure.

R307-326-4. Vacuum Producing Systems.

The emission of noncondensable VOCs from the condensers, hot wells, or accumulators of vacuum producing systems shall be controlled by:

(1) piping the noncondensable vapors to a firebox or incinerator, or

(2) compressing the vapors and adding them to the refinery fuel gas, or

(3) other equally effective means provided the design and effectiveness of such means are documented and submitted to and approved by the executive secretary.

R307-326-5. Wastewater (Oil/Water) Systems.

Any wastewater separator handling VOCs shall be equipped with:

(1) covers and seals approved by the executive secretary on all separators and forebays,

(2) lids or seals on all openings in covers, separators, and forebays. Such lids or seals shall be in the closed position at all times except when in actual use.

R307-326-6. Process Unit Turnaround.

The owner or operator of a petroleum refinery shall insure that a minimum of VOCs are emitted to the atmosphere during process unit turnarounds. The owner or operator shall develop and submit to the executive secretary for approval a procedure for minimizing VOC emissions during turnarounds. At a minimum the procedure shall provide for:

(1) venting of the process unit or vessel during depressurization and purging to a vapor recovery system, flare or firebox, and

(2) preventing discharge to the atmosphere of emissions of VOCs from a process unit or vessel until its internal pressure is 136 kPa (19.7 psia) or less; or

(3) an equally effective system provided the design and effectiveness of such system are documented and submitted to and approved by the executive secretary.

(4) keeping records of the following items:

(a) every date that each process unit or vessel is shut down;

(b) the approximate vessel VOC concentration when the VOCs were first discharged to the atmosphere; and

(c) the approximate total quantity of VOCs emitted to the atmosphere.

(5) maintaining records. The records required in (4) above shall be kept for at least two years and shall be made available for review by the executive secretary or the executive secretary's representative.

R307-326-7. Catalytic Cracking Units.

Flue gas produced by catalytic cracker catalyst regeneration units shall be vented to a waste heat boiler or a process heater firebox, or incinerated, or controlled by other methods, provided the design and effectiveness of such methods are documented, submitted to, and approved by the executive secretary.

R307-326-8. Safety Pressure Relief Valves.

All safety pressure relief valves handling organic material shall be vented to a flare, firebox, or vapor recovery system, or controlled by the inspection, monitoring, and repair requirements described in R307-326-9.

R307-326-9. Monitoring of Leaks from Petroleum Refinery Equipment.

(1) The owner or operator of a petroleum refinery complex shall develop and conduct a VOC monitoring program

and shall follow the recording, reporting, and operating requirements consistent with R307-326-9. The monitoring program shall be submitted 30 days prior to start up of the petroleum refinery complex or as determined necessary by the executive secretary.

(2) Any affected component within a petroleum refinery complex found to be leaking shall be repaired and retested as soon as practicable, but not later than fifteen (15) days after the leak is detected. A leaking component is defined as one that has a concentration of VOCs exceeding 10,000 parts per million by volume (ppmv) when tested by a VOC detection instrument at the leak source in the manner described in 40 CFR 60, Appendix A, Reference Method 21, using methane or hexane as the calibration gas. Components not subject to New Source Performance Standards Subpart GGG shall use methane or hexane as calibration gas, provided a relative response factor for each individual instrument is determined for the calibration gas used. Those leaks that cannot be repaired until the unit is shut down for turnaround shall be identified with a tag and recorded as per (6) below and shall be reported as per (7) below. The executive secretary, in coordination with the refinery owner or operator, may require early unit turnaround based on the number and severity of tagged leaks awaiting turnaround.

(3) Monitoring Requirements.

(a) In order to ensure that all existing VOC leaks are identified and that new VOC leaks are located as soon as practicable, the refinery owner or operator shall perform necessary monitoring using visual observations when specified or the method described in 40 CFR 60, Appendix A, Reference Method 21, as follows:

(i) Monitor at least one time per year (annually) all pump seals, valves in liquid service, and process drains;

(ii) Monitor four times per year (quarterly) all compressor seals, valves in gaseous service, and pressure relief valves in gaseous service;

(iii) Monitor visually 52 times per year (weekly) all pump seals;

(iv) Monitor within 24 hours (with a portable VOC detection device) or repair within 15 days any pump seal from which liquids are observed dripping;

(v) Monitor any relief valve within 24 hours after it has been vented to the atmosphere;

(vi) Monitor immediately after repair any component that was found leaking;

(vii) For all other valves considered "unsafe-to-monitor" or inaccessible during an annual inspection, the owner or operator shall document to the executive secretary the number of valves considered "unsafe-to-monitor" or inaccessible, the dangers involved or reasons for inaccessibility, the location of these valves, and the procedures that the owner or operator shall follow to ensure that the valves do not leak. The documentation for each calendar year shall be submitted for approval to the executive secretary 15 days after the last day of each calendar year. At a minimum, the inaccessible valves shall be monitored at least once per year (annually).

(b) For the purpose of R307-326, gaseous service for pipeline valves and pressure relief valves is defined as the VOCs being gaseous at conditions that prevail in the components during normal operations. Pipeline valves and pressure relief valves in gaseous service and other components subject to leaks shall be noted or marked so that their location within the refinery complex is obvious to the refinery operator performing the monitoring and to the State of Utah, Division of Air Quality.

(4) Exemptions. The following are exempt from the monitoring requirements of (3) above:

(a) Pressure relief devices that are connected to an operating flare header, firebox, or vapor recovery devices, storage tank valves, and valves that are not externally regulated;

(b) Refinery equipment containing a stream composition less than 10 percent by weight VOCs; and

(c) Refinery equipment containing natural gas supplied by a public utility as defined by the Utah Public Service Commission.

(5) Alternate Monitoring Methods and Requirements.

(a) If at any time after two complete liquid service inspections and five complete gaseous service inspections, the owner or operator of a petroleum refinery can demonstrate that modifications to (3) above are in order, he may apply in writing to the Air Quality Board for a variance from the requirements of (3) above.

(b) This submittal shall include data that have been developed to justify the modification to (3) above. As a minimum, the submittal should contain the following information:

(i) the name and address of the company;

(ii) the name and telephone number of the responsible company representative;

(iii) a description of the proposed alternate monitoring procedures; and

(iv) a description of the proposed alternate operational or equipment controls.

(6) Recording Requirements. Identified leaks shall be noted and affixed with a readily visible and weatherproof tag bearing the identification of the leak and the date the leak was detected. The tag shall remain in place until the leaking component is repaired. The presence of the leak shall also be noted in a log maintained by the operator or owner of the refinery. The log shall contain, at a minimum, the name of the process unit where the component is located, the type of component, the tag number, the date the leak is detected, the date repaired, and the date and instrument reading when the recheck of the component is made. The log should also indicate those leaks that cannot be repaired until turnaround, and summarize the total number of components found leaking. The operator or owner of the refinery complex shall retain the leak detection log for two years after the leak has been repaired and shall make the log available to the executive secretary upon request.

(7) Reporting Requirements. The operator or owner of a petroleum refinery complex shall submit a report to the executive secretary by the 15th day of January, April, July, and October of each year listing the total number of components inspected, all leaks that have been located during the previous 3 calendar months but not repaired within 15 days, all leaking components awaiting unit turnaround and the total number of

components found leaking. In addition, the refinery operator or owner shall submit a signed statement with each report that all monitoring has been performed as stipulated in R307-326-9.

(8) Additional Requirements. Any time a valve, with the exception of safety pressure relief valves, is located at the end of a pipe or line containing VOCs, the end of the line shall be sealed with one of the following: a second valve, a blind flange, a plug or a cap. This sealing device shall only be removed when the line is in use for sampling.

R307-326-10. Alternate Methods of Control.

(1) Any person may apply to the executive secretary for approval of an alternate test method, an alternate method of control, an alternate compliance period, an alternate emission limit, or an alternate monitoring schedule. The application must include a demonstration that the proposed alternate produces an equal or greater air quality benefit than that required by R307-326, or that the alternate test method is equivalent to that required by these rules. The executive secretary shall obtain concurrence from EPA when approving an alternate test method, an alternate method of control, an alternate compliance period, an alternate emission limit, or an alternate monitoring schedule.

(2) Manufacturer's operational specifications, records, and testings of any control system shall use the applicable EPA Reference Methods of 40 CFR Part 60, the most recent EPA test methods, or EPA-approved state methods, to determine the efficiency of the control device. In addition, the owner or operator must meet the applicable requirements of record keeping for any control device. A record of all tests, monitoring, and inspections required by R307-326 shall be maintained by the owner or operator for a minimum of 2 years and shall be made available to the executive secretary or the executive secretary's representative upon request. Any malfunctioning control device shall be repaired within 15 calendar days after it is found by the owner or operator to be malfunctioning, unless otherwise approved by the executive secretary.

(3) For purposes of determining compliance with emission limits, VOCs and nitrogen oxides will be measured by the test methods identified in federal regulation or approved by the executive secretary. Where such a method also inadvertently measures compounds with negligible photochemical reactivity, an owner or operator may exclude these negligibly reactive compounds when determining compliance with an emissions standard.

R307-326-11. Compliance Schedule.

All sources within any newly designated nonattainment area for ozone shall be in compliance with this rule within 180 days of the effective date of designation to nonattainment.

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