

CHAPTER 115 LEAK DETECTION AND REPAIR (LDAR) PROGRAM CHANGES

FOR ALL FOUR OZONE NONATTAINMENT AREAS:

- Delay of repair beyond the next process unit shutdown is allowed if the component is isolated from the process and does not remain in volatile organic compound (VOC) service.
- Previous language states that if the repair of a component would require a unit shutdown which would create more emissions than the repair would eliminate, the repair may be delayed until the next shutdown. The revisions require companies to maintain documentation that the total cumulative emissions from leaking components in the unit are less than the emissions resulting from shutdown of the unit. This new requirement is necessary because the emissions resulting from shutdown of the unit are most appropriately compared to the cumulative emissions from leaking components in the unit, rather than the emissions from a single leaking component, because all unrepaired leaking components will continue to emit until the next process unit shutdown.
- Valves which can be safely repaired without a process unit shutdown may not be placed on the shutdown list.
- All component monitoring must occur when the component is in contact with process material and the unit is in service. If a unit is not operating during the required monitoring period but a component in that unit is in contact with process fluid which is circulating or under pressure, then that component is considered to be in service and is required to be monitored.
- Weekly inspections required for process drains equipped with water seals to ensure that water seal controls are maintained, except daily inspections are required for water seals that fail three or more inspections in any 12-month period (see §115.144(5)).
- Monthly inspections required for process drains not equipped with water seals (see §115.144(6)).
- Data from dataloggers must be transferred on a daily basis to the master electronic database.
 - Collected monitoring data must include the identification of each component and each calibration run, the maximum screening concentration detected, the time of monitoring (beginning and end), a date stamp, an operator identification, an instrument identification, and calibration gas concentration and certification dates.
 - Each change to the database must be detailed in a log or inserted as a notation in the database. The changes must include the name of the person who made the change, the date of the change, and an explanation to support the change.
- Recordkeeping revised as follows:
 - Recordkeeping was revised to include additional items which are necessary to determine/document compliance with the rules.
 - Five year record retention instead of two years for consistency with Title V permits.
- Explicit statement added noting that all exemptions for <2" valves expired on 7/31/92.
- Compliance date for the new requirements: 12/31/03.

ADDITIONAL REQUIREMENTS APPLY TO UNITS IN HGA SUBJECT TO THE CURRENT CHAPTER 115 LDAR PROGRAM IF A HIGHLY-REACTIVE VOLATILE ORGANIC COMPOUND (HRVOC) IS A RAW MATERIAL, INTERMEDIATE, OR FINAL PRODUCT:

- Highly-reactive volatile organic compound (HRVOC) is defined as follows:
 - In Harris County: ethylene; propylene; 1,3-butadiene; and all isomers of butene.
 - In Brazoria, Chambers, Fort Bend, Galveston, Liberty, Montgomery, and Waller Counties: ethylene and propylene.
- Exemption for components which contact a process fluid that contains less than 5.0% HRVOC by weight.
- Components of each unit subject to the additional requirements must be identified.
- Exemptions in the current Chapter 115 LDAR program do not apply. Also, no leak-skip is allowed for valves.
- First attempt at repairing a leaking component required as follows:
 - No later than one business day after the leak is detected for leaks over 10,000 parts per million by volume (ppmv), with repair completed no later than seven calendar days after the leak is detected. (Examples: 1) a leak found on Monday must be repaired no later than Tuesday; and 2) a leak found on Friday must be repaired no later than Monday.)
 - For all other leaks, a first attempt at repairing the leaking component must be made no later than five calendar days after the leak is detected, and the component shall be repaired no later than 15 calendar days after the leak is detected. (Same as current rule.)
- Quarterly monitoring required for: blind flanges, plugs, or caps at the end of a pipe or line containing VOC; connectors; heat exchanger heads; sight glasses; meters; sampling connections; bolted manways; hatches; agitators; sump covers; junction box vents; covers and seals on VOC water separators; and process drains.
- Leak-skip similar to the HON is available for connectors; heat exchanger heads; bolted manways; hatches; and sump covers.
- Monitoring/inspection required for all components for which a repair attempt was made during a shutdown within 30 days or at the next monitoring period, whichever occurs first, after startup is completed following the shutdown.
- Weekly inspections required for all process drains equipped with water seals to ensure that water seal controls are maintained, except daily inspections are required for water seals that fail three or more inspections in any 12-month period.
- Monthly inspections required for all process drains not equipped with water seals.
- Monthly inspection of pumps, compressors, and agitators (or alarm that alerts operators of leaks).
- Valves (excluding pressure relief valves and automatic control valves) may be placed on the shutdown list in each of the following cases:

- after two unsuccessful attempts to repair a leaking valve through “extraordinary efforts” (such as drilling & injection of sealant);
 - the owner or operator maintains documentation that there is a safety, mechanical, or major environmental concern posed by repairing the leak by using “extraordinary efforts;”
 - the component is isolated from the process and does not remain in VOC service.
- Equipment standards:
 - Closed-vent systems containing bypass lines that could divert a vent stream away from the control device and to the atmosphere, must have either:
 - a flow indicator that determines whether vent stream flow is present at least once every 15 minutes; or
 - the bypass line valve secured in the closed position with a car-seal or a lock-and-key type configuration.
 - Control device requirements:
 - Recovery devices (e.g., condensers and absorbers): at least 95% efficiency.
 - Flares must meet the requirements of 40 CFR §60.18(b) or §63.11(b).
 - All other control devices must have a control efficiency of at least 98% or reduce emissions to a VOC concentration of no more than 20 ppmv (dry basis, corrected to 3.0% oxygen).
 - Stack testing required for control devices other than flares.
 - Pressure relief valves in gaseous HRVOC service venting to the atmosphere (i.e., not routed to a flare or other control device) which are equipped with a rupture disk must be equipped with a pressure sensing device between the pressure relief valve and the rupture disk. Failed rupture disks must be replaced or repaired no later than 30 calendar days after the failure is detected.
 - Shaft sealing system required for pumps, compressors, and agitators installed on or after July 1, 2003. Submerged pumps or sealless pumps (e.g., diaphragm, canned, or magnetic-driven pumps) are exempt. Acceptable shaft sealing systems include:
 - seals equipped with piping capable of transporting any leakage from the seal(s) back to the process;
 - seals with a closed-vent system capable of transporting to a control device any leakage from the seal or seals;
 - dual pump seals with a heavy liquid or non-VOC barrier fluid at higher pressure than process pressure; and
 - seals with an automatic seal failure detection and alarm system.
 - Process drains with water seals:
 - not allowed to use VOC rather than water as the sealing liquid. Exception: ethylene glycol, propylene glycol, or other low vapor pressure antifreeze, may be used during the period of November through February for freeze protection.
 - as an alternative to conducting weekly water seal inspections, the owner or operator may choose to equip the process drain with:

- an alarm that alerts the operator if the water level in the vertical leg of the drain falls below 50% of the maximum level; and a device that continuously records the status of the water level alarm, including the time period for which the alarm has been activated; or
 - a flow-monitoring device indicating either positive flow from a main to a branch water line supplying a trap or water being continuously dripped into the trap; and a device that continuously records the status of water flow into the trap.
 - Process drains with controls other than water seals:
 - hard piping with a gasketed seal or a tightly-fitting cap or plug.
- Audit every two years by an independent third-party organization (not the current LDAR contractor); report due within 30 days of audit completion.
 - Includes an audit of:
 - all components which:
 - were not tagged, but which should have been tagged; or
 - were not included in the list of components to be monitored or visually inspected, but which should have been included on that list;
 - the leak/no-leak status and measured VOC concentration for all components for which monitoring or visual inspection is required that monitoring period;
 - Must include monitoring of the following number of components required to be monitored in the unit, based on an average of the most recent four quarters:
 - * units with ≤ 100 components: audit all components.
 - * units with 101 to 9,999 components: audit the number of components based on a graph in the rule.
 - * units with $\geq 10,000$ components: audit ≥ 400 components.
 - For units with 1,000 components or more, can not include components which were included in either of the most recent two audits;
 - all data generated by monitoring technicians in the previous quarter. This shall include:
 - a review of the number of components monitored per technician;
 - a review of the time between monitoring events;
 - identification of abnormal data patterns; and
 - identification of any discrepancies between the data in the electronic database and the data in the datalogger and/or field notes.
 - An owner or operator may request approval of an alternative method which demonstrates equivalency with the independent third-party audit.
- Staff from the agency, EPA, or local programs may conduct an audit of the LDAR program.
- Compliance dates:

- 12/31/04 for the initial third-party audit; and
- 12/31/03 for all other requirements.