

mercury thermal recovery unit vent and fugitive emission sources associated with storage areas for mercury-containing wastes.

C. What Are the Emission Limitations?

For new or reconstructed mercury cell chlor-alkali production facilities, the final rule prohibits mercury emissions.

For existing mercury cell chlor-alkali production facilities with end box ventilation systems, the final rule requires that aggregate mercury emissions from all by-product hydrogen streams and end box ventilation system vents not exceed 0.076 g Hg/Mg Cl₂ for any consecutive 52-week period. For existing mercury cell chlor-alkali production facilities without end box ventilation systems, the final rule requires that mercury emissions from all by-product hydrogen streams not exceed 0.033 g Hg/Mg Cl₂ for any consecutive 52-week period.

For new, reconstructed, or existing mercury recovery facilities with oven type mercury thermal recovery units, the final rule requires that total mercury emissions not exceed 23 mg/dscm from each oven type unit vent. For new, reconstructed, or existing mercury recovery facilities with non-oven type mercury thermal recovery units, the limit in the final rule is 4 mg/dscm.

D. What Are the Work Practice Standards?

The final rule contains a set of work practice standards to address and mitigate fugitive mercury releases at mercury cell chlor-alkali plants. These provisions include specific equipment standards such as the requirement that end boxes either be closed (that is, equipped with fixed covers), or that end box headspaces be routed to a ventilation system. Other examples include requirements that piping in liquid mercury service have smooth interiors, that cell room floors be free of cracks and spalling (*i.e.*, fragmentation by chipping) and coated with a material that resists mercury absorption, and that containers used to store liquid mercury have tight-fitting lids. The work practice standards also include operational requirements. Examples of these include requirements to allow electrolyzers and decomposers to cool before opening, to keep liquid mercury in end boxes and mercury pumps covered by an aqueous liquid at a temperature below its boiling point at all times, to maintain end box access port stoppers in good sealing condition, and to rinse all parts removed from the decomposer for maintenance prior to transport to another work area.

A cornerstone of the work practice standards is the inspection program for equipment problems, leaking equipment, liquid mercury accumulations and spills, and cracks or spalling in floors and pillars and beams. Specifically, the final rule requires that visual inspections be conducted twice each day to detect equipment problems, such as end box access port stoppers not securely in place, liquid mercury in open containers not covered by an aqueous liquid, or leaking vent hoses. If a problem is found during an inspection, the owner or operator will need to take immediate action to correct the problem. Monthly inspections for cracking or spalling in cell room floors are also required as well as semiannual inspections for cracks and spalling on pillars and beams. Any cracks or spalling found will need to be corrected within 1 month.

Visual inspections for liquid mercury spills or accumulations are also required twice per day. If a liquid mercury spill or accumulation is identified during an inspection, the owner or operator will need to initiate cleanup of the liquid mercury within 1 hour of its detection. Acceptable cleanup methods include wet vacuum cleaning or a suitable alternative method approved upon petition.

In addition to cleanup, the final rule requires that an inspection of equipment in the area of the spill or accumulation be conducted to identify the source of the liquid mercury. If the source is found, the owner or operator is required to repair the leaking equipment as discussed below. If the source is not found, the owner or operator will be required to reinspect the area every 6 hours until the source is identified or until no additional liquid mercury is found at that location.

Inspections of specific equipment for liquid mercury leaks are required once per day. If leaking equipment is identified, the final rule requires that any dripping mercury be contained and covered by an aqueous liquid, and that a first attempt to repair leaking equipment be made within 1 hour of the time it is identified. The final rule requires that leaking equipment be repaired within 4 hours of the time it is identified, although there are provisions for delaying repair of leaking equipment for up to 48 hours.

Inspections for hydrogen gas leaks are required twice per day. For a hydrogen leak at any location upstream of a hydrogen header, a first attempt at repair is required within 1 hour of detection of the leaking equipment, and the leaking equipment is required to be repaired within 4 hours (with

provisions for delay of repair if the leaking equipment is isolated). For a hydrogen leak downstream of the hydrogen header but upstream of the final control device, a first attempt at repair is required within 4 hours, and complete repair required within 24 hours (with delay provisions if the header is isolated).

The work practice standards in the final rule require you to institute a floor-level mercury vapor measurement program. Under this program, mercury vapor levels are periodically measured and compared to an action level of 0.05 mg/m³. The final rule specifies the actions to be taken when the action level is exceeded. If the action level is exceeded during any floor-level mercury vapor measurement evaluation, you are required to take specific actions to identify and correct the problem.

As an alternative to the full set of work practice standards (including the floor-level monitoring program), the final rule also includes an optional requirement to institute a cell room monitoring program whereby owners and operators continuously monitor mercury concentrations in the upper portion of each cell room and take corrective actions as soon as practicable when elevated mercury vapor levels are detected.

The program is not designed to be a continuous monitoring system inasmuch as the results would be used only to determine relative changes in mercury vapor levels rather than compliance with a cell room emission or operating limit. The owner or operator is required to establish an action level for each cell room based on preliminary monitoring to determine normal baseline conditions. The action level, or levels if appropriate, will then be established as a yet-to-be-determined multiple of the baseline values. Once the action level(s) is established, continuous monitoring must be conducted. If an action level is exceeded, actions to correct the situation are required to be initiated as soon as possible. If the elevated mercury vapor level is due to a maintenance activity, the owner or operator must ensure that all work practices related to that maintenance activity are followed. If a maintenance activity is not the cause, inspections and other actions will be needed to identify and correct the cause of the elevated mercury vapor level. Owners and operators utilizing this cell room monitoring program option are required to develop site-specific cell room monitoring plans describing their monitoring system and quality assurance/quality control