

Changes to Chapter 173-400 WAC

WAC 173-400-030 Definitions. The definitions in this section apply statewide except where a permitting authority has redefined a specific term. Except as provided elsewhere in this chapter, the definitions in this section apply throughout the chapter:

~~((+87+))~~ (93) **"Sulfur recovery unit" or "SRU"** means a process unit that recovers elemental sulfur from gases that contain reduced sulfur compounds and other pollutants, usually by a vapor-phase catalytic reaction of sulfur dioxide and hydrogen sulfide. An SRU is typically comprised of several components including a Claus unit, a tail gas unit, and an incinerator. This definition does not include a unit where the modified reaction is carried out in a water solution which contains a metal ion capable of oxidizing the sulfide ion to sulfur, e.g., the LO-CAT II process.

WAC 173-400-040 General standards for maximum emissions.

(1) **General requirements.**

(7) **Sulfur dioxide.**

(a) Except as allowed by (b) of this subsection, no person shall cause or allow the emission of a gas containing sulfur dioxide from any emissions unit in excess of one thousand ppm of sulfur dioxide on a dry basis, corrected to seven percent oxygen for combustion sources, and based on the average of any period of sixty consecutive minutes.

(b) Alternative SO₂ emission standards for sulfur recovery units (SRU or SRUs). This provision takes effect on the effective date of EPA's approval in the SIP. The alternative emission standard applies to SRUs that were in operation before January 24, 2018.

(i) Applicability. The alternative emission standard applies when the tail gas treatment unit (TGTU) is bypassed as part of a planned SRU shutdown that ends in a cold state.

(A) A planned SRU shutdown starts when sulfur rich sour gas feed to the SRU stops.

(B) A planned SRU shutdown ends when the feed to the catalytic reactor, TGTU and incinerator of the SRU stops.

(C) Hot standby. The alternative emission standard does not apply to hot standby of the SRU. Hot standby means the SRU is not receiving sulfur-rich sour gas but is maintained at elevated temperatures, typically using natural gas to prevent a complete shutdown and cold restart of the sulfur recovery unit.

(D) TGTU bypass. As part of a planned SRU shutdown, the TGTU bypass is allowed when:

(I) Visual observations indicate that no significant amount of sulfur is left in the catalytic reactor system. To determine this, all of the following conditions must occur:

- No sulfur is dripping from the condensers or sulfur traps;
- The sulfur level in the sulfur tank is not increasing;
- Liquid sulfur does not appear dark; and

(II) The ratio monitor analyzer for H₂S and SO₂ ratio concentrations documents sulfur levels below [insert actual limit] [or no higher than...].

(ii) **Requirements during a planned shutdown.** To qualify as a planned shutdown, the owner or operator of an SRU shall:

10/10/18

(A) Notify the permitting authority in writing at least twenty-four hours before the shutdown begins;

(B) Follow written procedures approved by the permitting authority to minimize sulfur dioxide emissions during shutdown periods while considering the need for personnel and equipment safety;

(C) Maintain a log showing that written procedures were followed for each planned shutdown;

(D) If the written procedures were not followed, submit a report to the permitting authority and document in the log the following:

(I) A description of each variance from the written procedures and the reason for that variance; and

(II) A calculation of the quantity of sulfur dioxide emissions and the emission estimate from each variance.

(III) Revision of the written procedures to include the applied procedure for future use if appropriate. The revised procedure must be submitted to, and approved by the permitting authority.

(iii) **Alternative emission standard.**

- (A) Total SO₂ emissions. The SO₂ emission rate during TGTU bypass shall not exceed 1.35 pounds per hour (lb/hr) on a daily long ton sulfur production capacity for each SRU, OR the maximum SO₂ emission during the TGTU bypass shall not exceed 4 pounds per daily long ton sulfur production capacity of the SRU.
- (B) Frequency. The alternative emission standard applies during one planned shutdown for every three years on a rolling average for each SRU.
- (C) Duration. The alternative emission standard may be applied during three separate one-hour periods during bypass of the TGTU. The fourth hour over 1000ppm would be a violation.
- (D) Measure and record. Measure and record sulfur dioxide emission concentrations for the entire planned shutdown using a sulfur dioxide continuous emissions monitoring system (CEMS). The CEMS must have a range that registers the lowest emissions and 1.25 times the highest known concentrations expected during planned shutdowns; or another level approved by the permitting

authority. The sulfur dioxide CEMS must document
compliance with the relative accuracy test audit
requirements in 40 C.F.R. Part 60, Appendix B,
Performance Specification 2, Section 8.4, within 12
calendar months immediately prior to the start date of
a planned shutdown.