

**FACT SHEET - COOLING TOWER AND FLARE RULES**

**“Subchapter H - Highly-Reactive VOC”**

**Cooling Tower Rule**

**Highly-reactive volatile organic compound (VOC)** - Acetaldehyde; 1,3-butadiene; all butenes (butylenes); ethylene; all ethyltoluenes; formaldehyde; isoprene; all pentenes; propylene; toluene; all trimethylbenzenes; and all xylenes.

**Dates:**

- Rule Proposal: June 5, 2002
- Rule Adoption: December 2002
- Compliance Date: December 2003 (all requirements except those for 2005)
- Compliance Date: December 2005 (emission limit, control requirements)

**Applicability:**

- All cooling tower heat exchange systems in the Houston/Galveston area which emit or have the potential to emit a highly-reactive volatile organic compound (VOC). This rule applies to industrial process cooling towers (CTs) and does not apply to fin-fan coolers or comfort cooling towers which are used exclusively in cooling, heating, ventilation, and air conditioning systems.

**Emission Specification: (each cooling tower)**

- Emission rate set at 8 pounds per hour for all highly-reactive VOC emitted from each cooling tower at an account.
  - < *Solicit comment during the proposal phase of this rule on the concept of establishing a site wide emission rate cap for all cooling tower heat exchange systems at an account.*
  - < *Solicit comment during the proposal phase of this rule on the concept of combining emissions from all cooling tower heat exchange systems, flares, and continuously monitored vents at an account in order to establish a site wide emission rate cap for all highly-reactive VOC for these facilities.*

**Control Requirements:**

- Repair shall be completed within 24 hours from when a sample is collected that shows emissions in excess of the established limit.

**Alternative Compliance Requirement:**

- Alternate compliance with the emission specifications (i.e. emission cap set for all CTs at an account), or control requirements may be approved by the Executive Director.

**Monitoring Requirements:**

- CTs  $\geq$  8,000 gpm circulated- Continuous flow monitor and continuous highly-reactive VOC monitors.
- CTs  $<$  8,000 gpm circulated- Continuous flow monitor and daily sampling for all highly-reactive VOC.

**Reporting Requirements:**

- Quarterly reporting requirements with respect to highly-reactive VOC monitored values and chlorine usage.

**Testing Requirements:**

- All CTs- Use approved test methods as appropriate.

**Recordkeeping Requirements:**

- CTs  $\geq$  8,000 gpm circulated- hourly records for all highly-reactive VOC emitted.
- CTs  $<$  8,000 gpm circulated- weekly records for all highly-reactive VOC emitted.
- If §101.201 (*Emission Event Reporting and Recordkeeping*) is claimed as an exemption from this rule, one must use the records that are required to be retained under §115 (Cooling Tower Heat Exchange Systems) as justification in order to demonstrate compliance with §101.222 (*Demonstrations*).

**Exemptions:**

- CTs in which highly-reactive VOC comprise less than 1.0% by weight of the total VOC in each heat exchanger and whose emissions are below 8 pounds per hour are exempt from the control requirements.
- CTs which operated with the minimum pressure on the cooling water side at least five pounds per square inch gauge (psig) greater than the maximum pressure on the process side.

**“Subchapter B- General VOC Sources”**  
**Cooling Tower Rule**

**Dates:**

- Rule Proposal: June 5, 2002
- Rule Adoption: December 2002
- Compliance Date: December 2003

**Applicability:**

- All cooling tower heat exchange systems in the Houston/Galveston area which emit or have the potential to emit a VOC. This rule applies to industrial process cooling towers and does not apply to fin-fan coolers or comfort cooling towers which are used exclusively in cooling, heating, ventilation, and air conditioning systems.

**Monitoring Requirements:**

- All CTs- Continuous flow monitors and sampling twice a week for VOC.

**Reporting Requirements:**

- Quarterly reporting requirements with respect to VOC monitored values and chlorine usage.

**Testing Requirements:**

- All CTs- Use approved test methods as appropriate.

**Recordkeeping Requirements:**

- Continuous flow rate recording.
- Weekly records that document the speciated VOC concentration in the process fluid.

**“Subchapter H - Highly-Reactive VOC”**  
**Flare Rule**

**Highly-reactive volatile organic compound (VOC)** - Acetaldehyde; 1,3-butadiene; all butenes (butylenes); ethylene; all ethyltoluenes; formaldehyde; isoprene; all pentenes; propylene; toluene; all trimethylbenzenes; and all xylenes.

**Dates:**

Rule Proposal: June 5, 2002

- Rule Adoption: December 2002
- Compliance Date: December 2003 (all requirements except those for 2005)
- Compliance Date: December 2005 (emission limit, control requirements (repair))

**Applicability:**

- All flares in the Houston/Galveston area which emit or have the potential to emit a highly-reactive VOC.

**Emission Specifications:**

- Total highly-reactive VOC emissions from each flare at an account shall not exceed 7.4 pounds per hour.
  - < *Solicit comment during the proposal phase of this rule on the concept of establishing a site wide emission rate cap for all flare at an account.*
  - < *Solicit comment during the proposal phase of this rule on the concept of combining emissions from all flares, cooling tower heat exchange systems, and continuously monitored vents at an account in order to establish a site wide emission rate cap for all highly-reactive VOC for these facilities.*

**Control Requirements:**

- All flares shall continuously comply with 40 CFR 60.18.
- Repair shall be completed within 24 hours from when emission rate exceeds rule limits.

**Alternative Compliance Requirement:**

- Alternate compliance with the emission specifications (i.e. emission cap set for all flares at an account), or control requirements may be approved by the Executive Director.

**Monitoring Requirements:**

- Continuous on-line flow monitors for all flares.
- Use an on-line device for determining all highly-reactive VOC constituents in the flare header gas, at least once every 15 minutes.

**Reporting Requirements:**

- Quarterly reporting requirements with respect to highly-reactive VOC monitored values.

**Recordkeeping Requirements:**

- Daily records to show compliance with the emission specification.
- If §101.201 (*Emission Event Reporting and Recordkeeping*) is claimed as an exemption from

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this rule, one must use the records that are required to be retained under §115 (Flares) as justification in order to demonstrate compliance with §101.222 (*Demonstrations*).

**Exemptions:**

- The total of all the gas streams that are routed to a flare in which highly-reactive VOC comprise less than 1.0% by weight of the total VOC in the gas stream and whose highly-reactive VOC emissions are below 7.4 pounds per hour are exempt from the repair procedures within the control requirements.

**“Subchapter B- General VOC Sources”**  
**Flare Rule**

**Dates:**

- Rule Proposal: June 5, 2002
- Rule Adoption: December 2002
- Compliance Date: December 2003

**Applicability:**

- All flares in the Houston/Galveston area which emit or have the potential to emit a VOC.

**Control Requirements:**

- All flares shall continuously comply with 40 CFR 60.18.

**Monitoring Requirements:**

- Continuous on-line flow monitors for all flares.

**Reporting Requirements:**

- Quarterly reporting requirements with respect to VOC monitored values.

**Sampling Requirements:**

- Sampling every four hours to determine the net heating value and speciated VOC concentration in flare header gas.

**Recordkeeping Requirements:**

- Daily records of the net heating value of the gas stream routed to the flare and the exit velocity at the flare tip.
- Daily records of the speciated VOC concentration in the flare header gas.