

List of Questions and Answers for Heat Exchange Systems

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The Heat Exchange Provisions are found in 63.1328 and reference 63.104

Do I have to comply with the Heat Exchange Requirements?

These provisions do not apply to process cooling towers used in PET manufacturing.

You are also exempt if you meet at least one of the following conditions.

- S** The heat exchange system is operated with the minimum pressure the cooling water side at least 35 kilopascals greater than the maximum pressure on the process side.
- S** There is an intervening cooling fluid, containing less than 5 wt% of total hazardous air pollutants listed in Table 6 of 40 CFR Part 63 subpart JJJ. This intervening fluid serves to isolate the cooling water from the process fluid and the intervening fluid is not sent through a cooling tower or discharge. (Discharging does not include emptying for maintenance purposes.)
- S** The once-through heat exchange system is subject to a NPDES permit with an allowable discharge limit of 1 ppm or less above the influent concentration. Or is 10% or less above the influent concentration.

- S** The once-through heat exchange system is subject to a NPDES permit that requires monitoring of a parameter to detect a leak of process fluid into cooling water, specifies or includes the normal range for that parameter, requires monitoring of the parameter monthly for the first 6 months then quarterly thereafter, and requires the owner or operator to report and correct leaks when the parameter exceeds normal operation.

- S** The recirculating heat exchange system is used to cool process fluids that contain less than 5 wt% total hazardous air pollutants listed in Table 6 of 40 CFR Part 63 subpart JJJ.

- S** The once-through heat exchange system is used to cool process fluids that contain less than 5 wt% total hazardous air pollutants listed in Table 6 of 40 CFR Part 63 subpart JJJ.

What are my sampling requirements to detect a leak if I chose to monitor the cooling water for presence of HAPs?

The cooling water should be monitored monthly for the first 6 months and quarterly thereafter to detect leaks. Monitoring for components in Table 6 of 40 CFR Part 63 subpart JJJ.

The concentration of the monitored components in the cooling water should be determined by any EPA approved method found in Part 136 in 40 CFR, as long as the method is sensitive to concentrations as low as 10 pm and the same method is used to test the inlet and exit samples. These inlet and exit samples should be taken at the entrance and exit of each heat exchange system or at the location where the cooling water enters and leaves the system. For re-circulation systems the entrance is when it leaves the cooling tower, and the exit is before it is returned to the cooling tower.

At least three sets of samples must be taken at each of the sampling sites and used for an average, and a leak is detected if the exit mean concentration is found to be greater than the entrance mean using a one sided statistical procedure at the 0.05

level of significance and the amount by which it is greater is at least 1 ppm or 10% of the entrance mean, whichever is greater.

What are my requirements if I chose to monitor using a surrogate indicator (e.g. ion specific electrode monitoring, pH, conductivity, etc.) ?

Owner or operator should prepare and implement a monitoring plan that documents the procedures that will be used to detect leaks of process fluids into cooling water. This plan must include a description of the parameter or condition to be monitored and an explanation of how it reliably indicates a leak and a description of the parameter level that indicates a leak. This parameter should be monitored no less than monthly for the first 6 months and then quarterly thereafter.

If a leak is found by other means, the plan must be altered and an explanation for the changes must be included. This must be completed within 180 of finding the leak.

The plan must be easily accessible by computer (within two hours) or maintained on-site. If this plan is changed, the original plan must also be kept for at least 5 years and must be on-site or easily accessible for at least 6 months of the 5 years.

What do I need to do if I detect a leak?

The leak should be repaired within 45 calendar days after the results from the monitoring tests have been received. Once the leak has been repaired the owner or operator should confirm this within 7 calendar days of the repair or start-up (whichever is later).

Delay of repair is allowable if the heat exchange system is isolated from the process or if repair is technically infeasible without a process shut down. If a shut down is required, the shutdown must be within 2 months to avoid a special shut down. If a shut down is not within two months repair may be delayed again if the owner or operator demonstrates that a shut down would cause greater emissions than the potential emissions from delaying repair or delayed if the necessary parts or

personnel were not available.

What records do I need to keep and recordkeeping do I need to do?

You need to keep all monitoring data that indicates a leak, the date the leak was detected (when you received the report), if the leak was demonstrated not to be a leak the basis for that determination, the dates of all efforts to repair the leak, the method used to repair the leak and the date the leak was confirmed repaired.

If any delays of repair are requested, the next semi-annual report must contain the following and this information must be contained in each semi-annual report until the leak is repaired:

- S** A report indicating the presence of a leak
- S** The date the leak was detected
- S** Report whether or not the leak was repaired
- S** Report the reasons why a delay is necessary. If it is estimated that fixing the leak would have higher emissions than allowing the leak to occur until the next shut down, these calculations must be included.
- S** If the leak remains unrepaired, the expected date of repair.
- S** If the leak was repaired, the date the leak was successfully repaired.