



Cooling tower water use

WEpc17 | Possible 1 point

Intent

To conserve water used for cooling tower makeup while controlling microbes, corrosion, and scale in the condenser water system.

Pilot Credit Closed

This pilot credit was closed to new pilot credit registrations on 3/1/2015. It is now available in the [LEED Innovation Catalog](#) for ongoing use by project teams as an innovation point rather than a pilot credit.

Requirements

* This credit language is drawn from the LEED v4 draft. Where other point totals are noted, this pilot credit is worth 1 point in total. *

Establishment

For cooling towers and evaporative condensers, conduct a potable water analysis within five years of submission for certification, measuring at least the five control parameters listed in Table 1.

Table 1. Maximum concentrations for parameters in condenser water

| Parameter | Maximum level |
|----------------------------|---------------|
| Ca (as CaCO ₃) | 1000 ppm |
| Total alkalinity | 1000 ppm |
| SiO ₂ | 100 ppm |
| Cl ⁻ | 250 ppm |
| Conductivity | 2000 µS/cm |

ppm = parts per million

µS/cm = micro siemens per centimeter

Calculate the number of cooling tower cycles by dividing the maximum allowed concentration level of each parameter by the actual concentration level of each parameter found in the potable makeup water. Limit cooling tower cycles to avoid exceeding maximum values for any of these parameters.

Table 2. Points for cooling tower cycles

| Cooling tower cycles | Points (except data centers) | Points (data centers) |
|---|------------------------------|-----------------------|
| Maximum number of cycles achieved without exceeding any filtration levels or affecting operation of condenser water system (up to maximum of 10 cycles) | 2 | 2 |
| Achieve a minimum 10 cycles by increasing the level of treatment in condenser or make-up water OR Achieve the number of cycles for 1 point and use a minimum 20% recycled nonpotable water | 3 | 4 |

Performance

None

General Pilot Documentation Requirements

[REGISTER FOR THE PILOT CREDIT](#)

- Participate in the [LEEDuser pilot credit forum](#)
- Complete the feedback survey:

[CREDITS 1-14](#)

[CREDITS 15-27](#)

[CREDITS 28-42](#)

[CREDITS 43-56](#)

[CREDITS 57-67](#)

Credit specific

Provide the following:

1. A water analysis measuring as a minimum the five control parameters measured in ppm or mg/l.
2. Narrative describing the water treatment system and the number of cycles which the cooling tower can achieve without exceeding the control parameters. The narrative should also include the predicted acceptable corrosion rates for each pipe material within the condenser water system.

Additional questions:

none

Changes

- Changes made for 2nd Public Comment (08/01/2011):
 - Separate language for EBOM projects to conform with new EBOM rating system structure
 - Added Healthcare as an applicable rating system type.
 - Clarification of cooling tower analysis process which requires a one time potable water analysis, following by an assessment of the maximum number of cycles appropriate to the project, along with additional measures to improve cooling tower efficiency.
- Changes made for 3rd Public Comment (03/01/2012):
 - Removed CI & Retail CI from applicable rating systems
 - Removed equipment requirements from EB:O&M
 - Separated EBOM & BD+C submittal requirements to reflect change to EBOM requirements.
- Changes made for 5th Public Comment (1/15/2013):
 - Updated tables to align with 5th Public Comment changes to [LEED v4 WEc3](#).
 - Removed additional BD+C documentation requirements that correspond to WEp2 from v4 draft.