



WSAC[®] in world's largest water-starved solar facility

Niagara Wet Surface Air Coolers (WSAC[®]) case study



Ivanpah Solar Generating Facility

Description: 3 - 133 MW solar power plants

Location: Mohave Desert, California

Application: Auxiliary water cooler

The challenge

The need to deliver colder than dry ambient temperatures to sustain turbine performance without using any new source of fresh water.

The solution

A wet/dry hybrid cooling system was installed that limits water usage to approximately 10% of the year. The system uses recycled water from RO discharge and reclaimed water collected from mirror washing which is stored in collection tanks until needed by the WSAC system.

Advantages

- Runs dry below 90°F, partial wet/dry from 90°F-105°F and all wet above 105°F.
- Fully cleanable coils on both unit types for ease of internal cleaning of the pressure vessel.

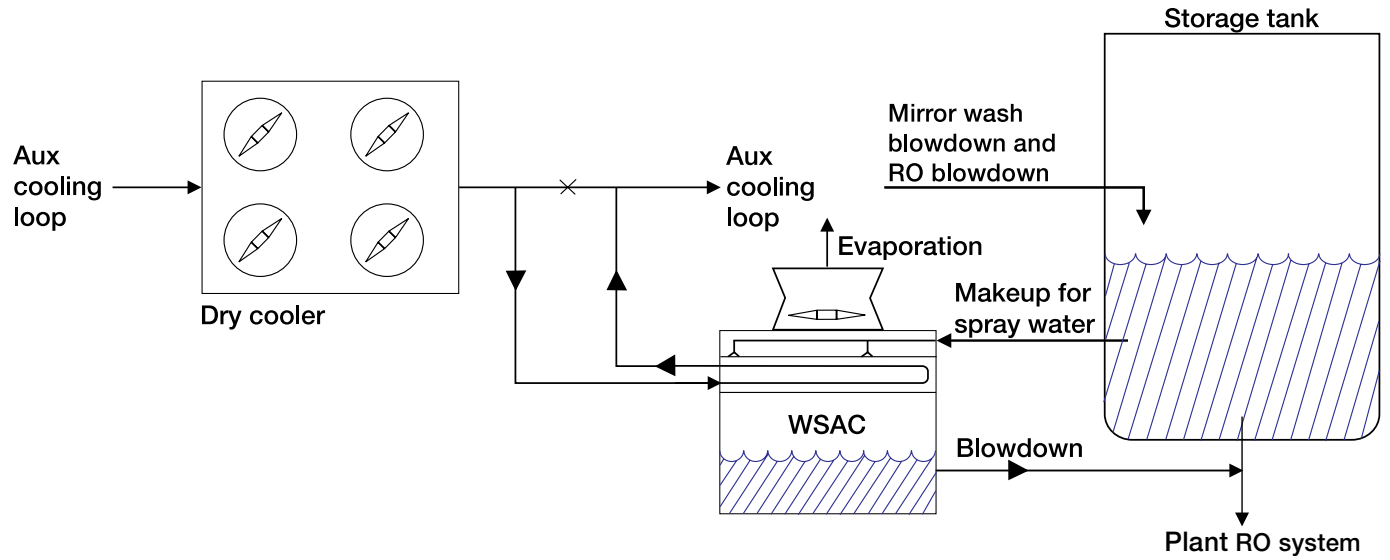
- Uses reclaimed water from both RO reject and mirror wash water as make-up source.
- Niagara designed, supplied and warrants the entire system with a single source of responsibility.

What is a wet/dry system?

In general, it is a system designed approach to maximize site water conservation while still utilizing the water available to achieve the lowest process outlet temperatures during periodic high temperature or critical situations. For example, an Alfa Laval Niagara Wet Surface Air Cooler could be combined with an Alfa Laval Ace dry air cooler to maximize consistent thermal performance while staying below the allowed water usage for any particular site.

The system approach allows for a consistent low process outlet temperature during all seasons by running dry during colder ambient periods; then utilizing water availability during the hotter ambient periods. Poor quality water sources can be considered and collected year round and used within this system. Total system responsibility for thermal performance is with Alfa Laval and not split between two different companies.

Application diagram



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Alfa Laval reserves the right to change specifications without prior notification.

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