



World's largest water-starved solar facility benefits from wet/dry hybrid cooling system

Ivanpah Solar Generating Facility, California, U.S.

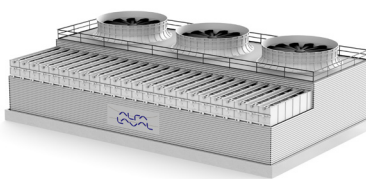
Case story



The Ivanpah Solar Generating Facility, located in the Mohave Desert, needed a cooling system to deliver colder than dry ambient temperatures to sustain turbine performance without using any new source of fresh water.

A wet/dry hybrid cooling system was designed and 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 Wet Surface Air Cooler (WSAC) system.

Alfa Laval designed, supplied and warrants the entire hybrid wet/dry system with a single source of responsibility. The design also included fully cleanable coils for ease of internal cleaning of the tubes or taking individual tubes out of service.



Results

- Runs dry below 90°F, partial wet/dry from 90°F-105°F and all wet above 105°F.
- Uses reclaimed water from both RO reject and mirror wash water as make-up source.
- Fully cleanable coils for ease of cleaning.
- Single source responsibility of entire system.



WetSurface

Maximum cooling efficiency and lowest possible outlet temperature.

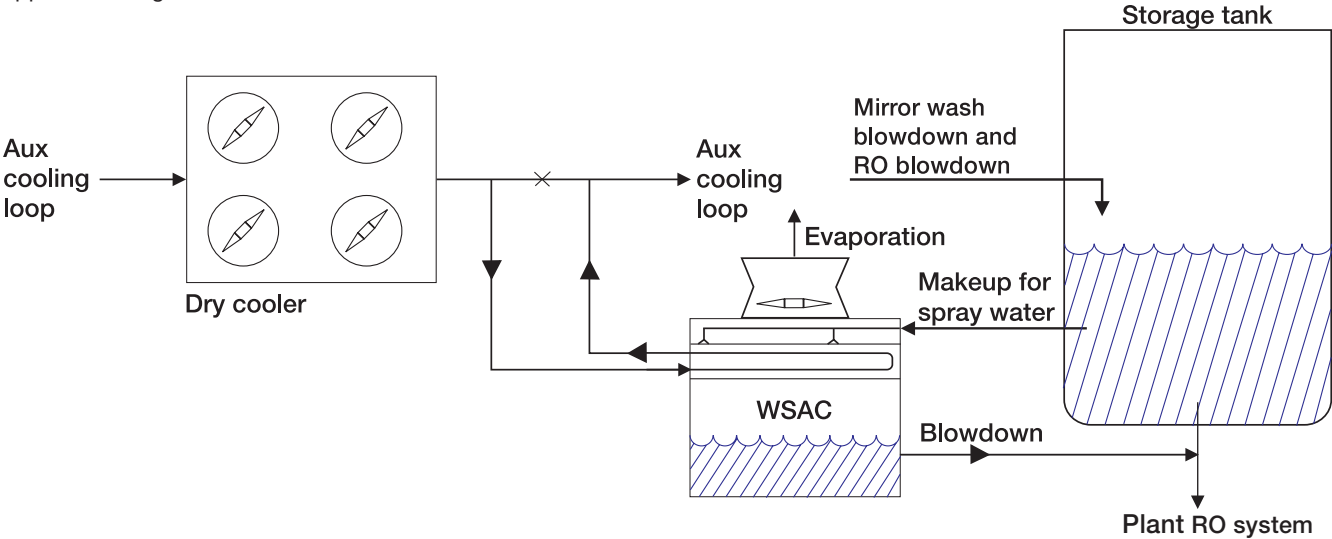


FlexWater

A WSAC can operate on recycled water of low quality such as blowdown water.

Learn more at www.alfalaval.com/wsac

Alfa Laval WSAC wet/dry system
application diagram



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 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.

Why Alfa Laval Wet Surface Air Coolers (WSAC®)		
Maximize uptime <ul style="list-style-type: none"> • High reliability • Minimal maintenance 	Cut costs <ul style="list-style-type: none"> • Minimal energy consumption • Reduced maintenance costs 	Increase capacity <ul style="list-style-type: none"> • WSAC maximizes cooling performance for increased production