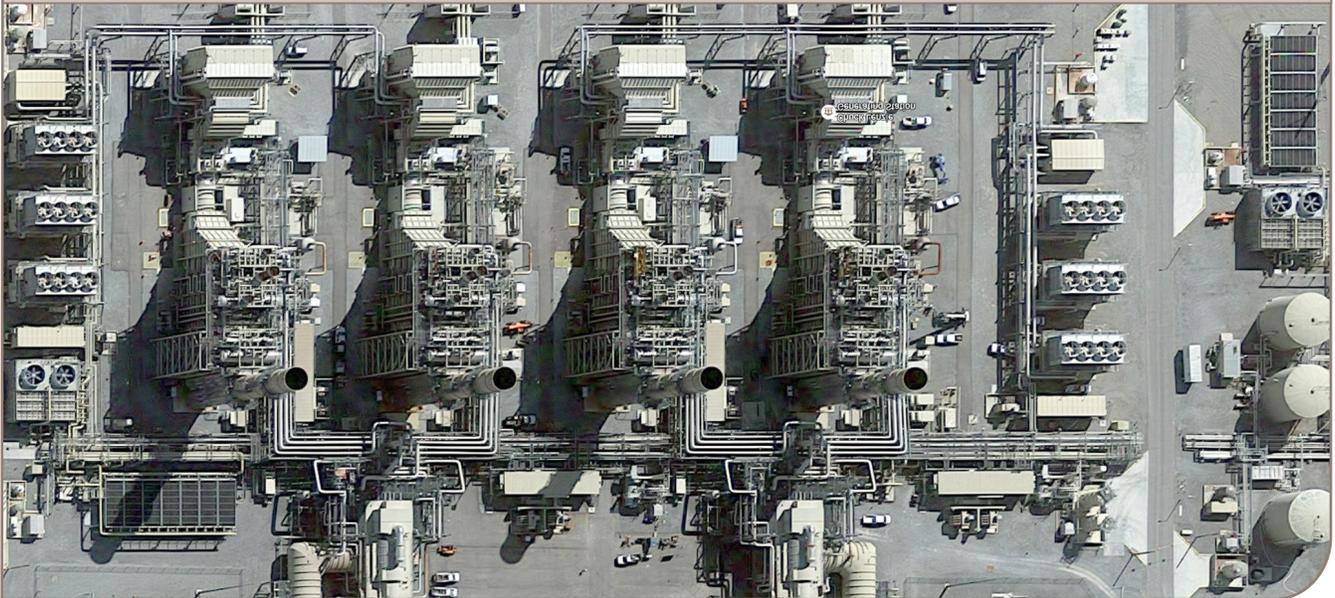




## Wet/dry auxiliary cooling system for 1,100 MW power plant reduces water consumption

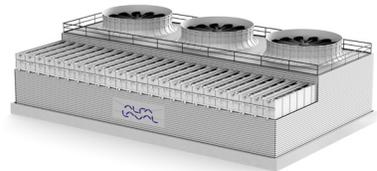
Chuck Lenzie Generating Station, Nevada, U.S.

Case story



The Chuck Lenzie Generating Station, a combined cycle power plant near Las Vegas, Nevada was challenged to cool the closed loop auxiliary water while conserving make-up water based on allowed annual limitations of water availability.

Considering annual weather data and water availability it was decided to design a wet/dry system to operate dry below 80°F (26.66°C) ambient and wet/dry above 80°F (26.66°C) ambient to achieve the site water limitations. A large fin-fan dry cooler was supplied with a large field erected Alfa Laval Wet Surface Air Cooler (WSAC®) to operate together automatically in a wet/dry system. The resulting hybrid solution reduced the site's water consumption to only seven percent of a conventional water only cooling solution.



### Results

- Achieved the aux cooling water temperature needed even at the hottest summer periods of over 100°F (37.77°C) ambient while still staying within the extreme water limitations.
- Simultaneous design of both the wet and dry side of the system.
- Alfa Laval Niagara designed, supplied and warrants the entire hybrid wet/dry system with a single source of responsibility.



#### WetSurface

Maximum cooling efficiency and lowest possible outlet temperature.

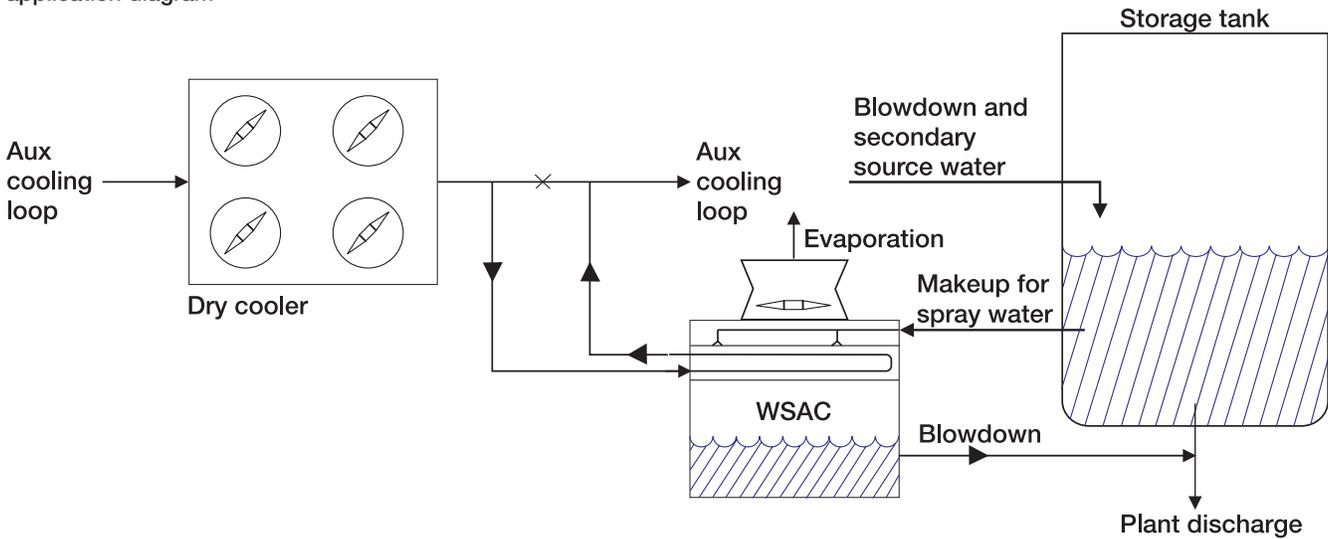


#### FlexWater

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

Learn more at [www.alfalaval.com/wsac](http://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 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

**Why Alfa Laval Wet Surface Air Coolers (WSAC®)**

<p><b>Maximize uptime</b></p> <ul style="list-style-type: none"> <li>• High reliability</li> <li>• Minimal maintenance</li> </ul>	<p><b>Cut costs</b></p> <ul style="list-style-type: none"> <li>• Minimal energy consumption</li> <li>• Reduced maintenance costs</li> </ul>	<p><b>Increase capacity</b></p> <ul style="list-style-type: none"> <li>• WSAC maximizes cooling performance for increased production</li> </ul>
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