



## Steam condenser for 100MW power plant

### Niagara Wet Surface Air Coolers (WSAC®) case study



#### Fossil fuel power plant

**Location:** Massachusetts

**Application:** Steam condensing

#### The challenge

Condense vacuum steam at a lower turbine back pressure.

#### The solution

A Niagara Wet Surface Air Cooler vacuum steam condenser was designed and manufactured to allow the customer to lower operating costs and increase plant capacity at a large fossil-fueled power plant.

#### Advantages

- Lower turbine back pressure allows increased plant capacity

- All 304 stainless steel tube bundle for long service life
- Bolted, removable cover to access and service inside of tubes
- Field-erected installation
- Also included separate auxiliary loop cooler in same structure

#### What is a WSAC?

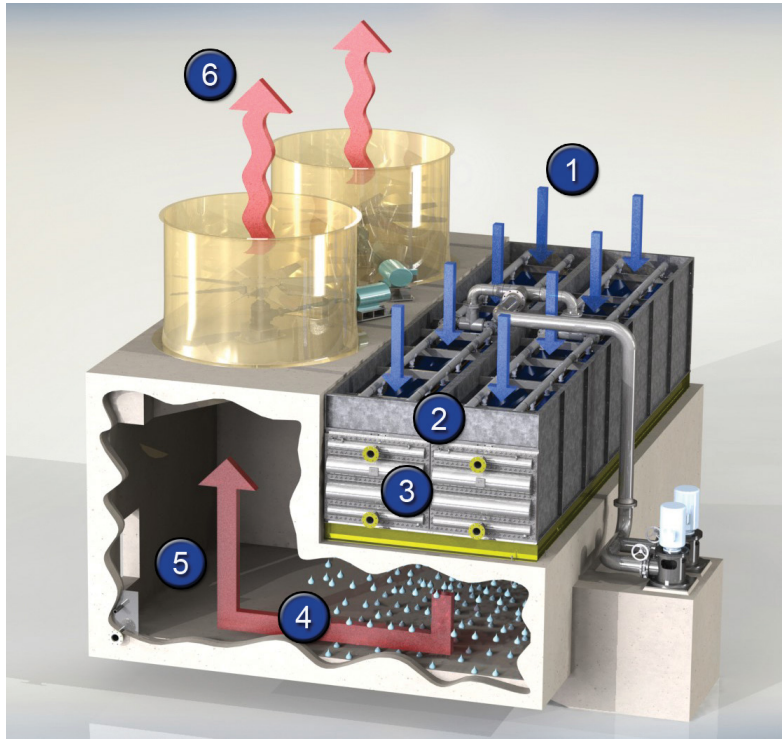
Alfa Laval Niagara Wet Surface Air Coolers (WSAC®) are efficient closed-loop, evaporative cooling systems designed for the power, process, wastewater, natural gas and petrochemical industries.

These fluid cooling and vapor condensing systems are optimized for industrial applications where rugged designs, and cost-effective, efficient closed-loop cooling and condensing duties are required.

## Niagara WSAC® - How it works

The closed-loop design ensures that the process liquid, vapor or gas flows through the inside of the heat exchanger tubes, with the cooling air and the spray water flow in the same direction on the outside of the tubes.

1. Air is induced downward over tube bundles
2. Water flows downward along with the air
3. Heat from the process stream is released to the cascading water
4. Vaporization transfers heat from cascading water to the air stream
5. The air stream is forced to turn 180° providing maximum free water removal
6. Fans discharge air vertically at a high velocity to minimize recirculation



Alfa Laval Niagara

Phone +1 716-875-2000

Email: [sales.niagara@alfalaval.com](mailto:sales.niagara@alfalaval.com)

Web: [www.niagarablower.com](http://www.niagarablower.com)

[www.alfalaval.com/air](http://www.alfalaval.com/air)

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

### How to contact Alfa Laval

Contact details for all countries are continually updated on our website.

Please visit [www.alfalaval.com](http://www.alfalaval.com) to access the information directly.