



FECT cooling towers for forest biomass power generation plant

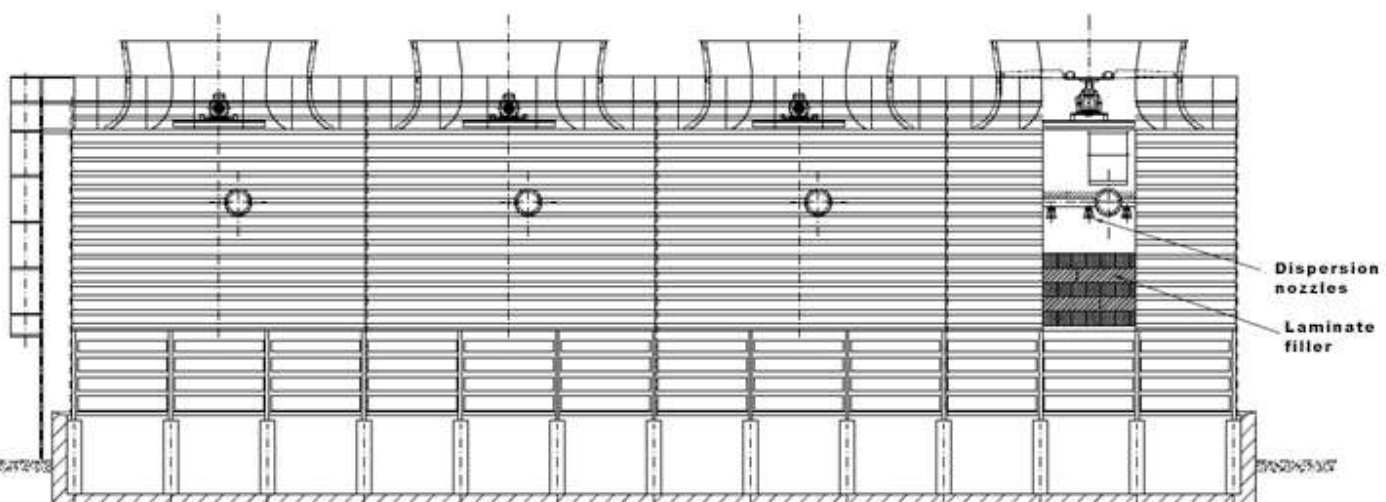
THE CHALLENGE

It's require a cooling equipment for an energy production plant located in Corrientes (Argentina) that uses forest biomass. The cooling towers will have the function of maintaining the cooling water temperature of the vapour turbo group with a flow of 3.330 m³/h. The cooling towers must work in continuous, in other words, 8.000 hours per year.

Conditions for the design

Electrically, the mode of operation of the vapour turbo group, is entering in parallel with the electrical production net, that maintains the frequency. For it, is a duty to cool the condenser pumping water from the pool of the cooling towers. Also, it can condense vapour of water of boiler proof up to half load of the boiler, with vapour turbogroup out of service to recover the treated water.

Diverse situations can cause the planned cease of vapour turbogenerator, so the axial **fans** that force the ascending air are speed variable and they are adjust according to the operational conditions, allowing to optimize the cooling towers behaviour, with the consequential energy saving.



THE SOLUTION

The company in charge of the project, **DOMINION**, entrusts TORRAVAL with the desing of a field erected cooling tower with induced draught and counter current flow, brewed in GRP treated against ultraviolet radiation.



THE RESULT

- Partitions included (separation walls) and windbreak to ensure the correct individual functioning of each cell, avoiding recirculations and inhomogeneous air distributions when fans aren't functioning.
- The superior **cover** is reinforced especially in areas where **mechanical devices** are located, for maintenance tasks.
- The **structure** fabricated in pultruded profiles is pinned to the foundation through steel plates.
- The **reducer** has an anti-rotation system to prevent the movement in an opposite direction than the fan, appropriate to avoid its rupture in startings with overexertion. Conical helical type, specially designed for cooling towers use, are capable to support the conditions of the humidity saturate air flow in a high temperature when it abandons the tower.
- The axial type **fans** and high efficiency with a circumferential maximum speed of 60 meter per second, dispose



vaned of low impulsion power and low noise emission level. The blades of the fan have an aerodynamic form, brewed in GRP.

Laminate **filler**. This type of filler increases the contact between air and water, in that way it is produced the heat transference.



CUSTOMER BENEFITS

- **Easy and safe maintenance**
- **Training** for Operation personnel
- **Strong and reliable** equipment
- **Tough to corrosion**
- **Access** hatches for **all components** in each cell
- **Operation** and ability **facility**
- Efficient cooling system with measures of **security in accesses** and **work platforms**.

PROJECT IMAGES











Parte de:

MITA
group



TORRAVAL Cooling S.L.
Avda. Autonomía, 4-1ª Planta - Edificio Vega de Lamiako
48940 Leioa (Vizcaya), Spain
Ph. +34 944 520 000 - torraval@torraval.com

