

Second session:

New components and equipment in relation with energy and refrigerants.

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1) How to use energy better?

Several points must be considered:

- efficient equipment: F Billiard has just presented practical examples showing how important the choice of equipment is; A. Mearini will explain in another session how European companies are dealing with the problem;
- a convenient planning of the use of equipment: equipment must be chosen not only in relation with their performance at a precise nominal condition but also in relation with whatever condition they have to operate in. This point is very important in industries that have to run in very different conditions, such as the food industry;
- a good design for the whole plant: each part of the plant may be energy-efficient, if the whole design is not accurate, we don't take full benefit of these qualities;
- good handling and maintenance: the best example may be offered by heat exchangers largely obstructed by dust; many other examples may be offered by non adapted control systems.

2) How to best handle the increase of air conditioning in Europe?

European countries need less air conditioning than countries that are warmer and more humid.

Nevertheless, air conditioning is considered more and more as part of comfort and its market has been expanding very rapidly in most European countries. This increase causes a peak in electricity demand during summer time, while, especially in France, the peak in electricity demand has happened during winter for decades.

There is no point to resist to the increasing demand but it is necessary to control energy efficiency and minimise energy demand for air conditioning.

The French government adopted a few weeks ago a national "plan climat", with an important part dealing with "durable climatisation".

Such an approach includes:

- more convenient rules for construction so as to minimise the need for air conditioning: orientation of the building, good insulation, convenient material for the peel of the building, shade design, etc.

- more convenient rules for the planning and the handling of air conditioning: convenient set of temperature control, convenient methods of humidity control, better maintenance, ...

Many standards have to be adapted to face better such objectives.

3) Legionella

after the death of veterans in the US in 1976 with 34 deaths, the role of micro-organisms, named legionella after this accident, has been detected and has become better understood. Many accidents happen in the UK (1985, 29 deaths in Stafford) and in Australia, leading to codes of good practices and sometimes to regulations in many countries.

Legionella has been an increasing concern in many countries, either in hot water and in cooling towers. In France where very few cases had been observed before, 17 people died late 2003 in Lens in the north of France; most curiously it happened during winter. A new regulation was adopted (decree 2004-131 of Dec 1, 2004).

Designers have to make comparison more and more often between evaporative and dry refrigerating towers. Both types have to be improved for both energy and microbiological aspects.