

# Medical Center Benefits from Cost-Efficient MeeFog™ System



The Upper Peninsula Medical Center has undergone over four major expansions in the last few years.

## THE BENEFITS

- Reduced energy consumption
- Lower maintenance costs
- Improved IAQ
- \$26,000 savings per year
- \$3,000 reduction in annual maintenance costs

## THE SOLUTIONS

- Staging solenoids
- Droplet filters
- Reverse osmosis system

## Upper Peninsula Medical Center Marquette, Michigan, USA

The Upper Peninsula Medical Center is located in the growing and peaceful city of Marquette, which is located on the Southern shore of beautiful Lake Superior in Michigan's Upper Peninsula.

The Marquette Medical-Dental Center was established in 1965, originally housing 18 physicians. Today, with over four (4) major expansions over the years, the Upper Peninsula Medical Center provides private offices for over 120 physicians and other health care professionals.

Over one half of a million patients visit the Upper Peninsula Medical Center annually. Because of the extreme winter conditions and high humidifying loads, Steve Boettcher of Integrated Design knew they needed an energy efficient humidification system. Steve called on Mee Industries for input in designing the energy efficient humidification system.

The environment of the newest addition to the Medical Center is controlled by three air handlers with a total of 69,000 cfm and a humidifier capacity of 500 lbs/hr. The load is matched by using staging solenoids that bring on nozzle headers in various combinations. Excess moisture that is not absorbed into the air stream is collected on droplet filters and drained away. The total electrical load for this system is 2.25 kW. A complete reverse osmosis system to remove unwanted minerals from the water was also installed as part of the system.

Annual energy savings, as compared to gas fired steam generating humidifiers, is in excess of \$26,000, with a further reduction of \$3,000 in annual maintenance costs.

The building engineer is excited about the reduced maintenance requirements of the MeeFog system and is looking forward to many low maintenance years of humidifying the newest addition to the Upper Peninsula Medical Center.

Humidifier

ENERGY COST COMPARISON CHART (ANNUAL)		
MeeFog™ System	\$706	1%
Ultrasonic	\$8,467	6%
Compressed Air	\$13,054	9%
Steam to Steam	\$113,263	74%
Gas to Steam	\$74,966	49%
Electric Steam	\$153,931	100%
<b>Assumptions:</b> \$.10 per kWh, \$1.20 per therm, 3500 hours operation, 1000 lbs. per hour moisture output.		

A typical fog system uses one horsepower for every 600 lbs. of water, which is 3% of the energy usage of compressed air-type systems and about 1% of the energy usage of electric steam systems.

### About Mee Industries Inc.

For over 45 years Mee Industries has led the world with innovative water fog technology. MeeFog systems are used to humidify and cool many industrial, commercial and agricultural processes and to create interesting and dynamic special effects. Today there are over ten thousand MeeFog systems in use around the world. The MeeFog team looks forward to helping you with your fogging project.

### The Mee Advantage: Experience, Innovation, Performance

In 1969, Thomas Mee Jr. a former Cornell University research scientist, founded Mee Industries. The company originally manufactured high-tech electro-optical, meteorological instrumentation, but by the early 1980's, high-pressure water fogging had become the main focus of the company. Today, Mee Industries provides innovative, highly effective, economical fog solutions for many industrial applications including gas turbine inlet-air fogging, commercial and industrial building humidification and cooling, data center humidification, outdoor air conditioning, greenhouse climate control, wine barrel storage humidification, as well as dynamic special effects for the entertainment industry and theme parks.

### Industry Leaders — Focused on Fog Technology

Mee specializes in providing custom-engineered, turn-key high-pressure fog solutions. We are committed to researching, developing, marketing and supporting the most innovative and reliable fog systems available anywhere in the world.

### MeeFog™ System Applications

#### RO WATER TREATMENT

- HUMIDIFICATION
- Commercial HVAC
- Manufacturing

#### EVAPORATIVE COOLING

- Data Center Cooling
- Condenser Cooling
- Heat Exchanger Cooling

#### GAS TURBINE COOLING

- Power Generation
- Oil, Gas, Petrochemical
- Offshore Operations

#### SPECIAL EFFECTS

- Amusement Parks
- Themed Entertainment
- Zoos, Aquariums, Gardens
- Fountain Art
- Private Residence

#### AGRICULTURE/OTHER

- Greenhouses
- Conservatory
- Wine Barrel Storage
- Cold Storage
- Dust Suppression
- Odor Control
- Cement Curing

#### HEADQUARTERS

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