



## **Cooling System Design & Chiller Efficiencies**

Understanding the operation, maintenance, troubleshooting, and application of the facility cooling systems is instrumental in ensuring a safe, reliable, and efficient operation of chillers. Cooling Systems design, operational efficiencies, and maintenance is reviewed in detail. Persons responsible for the operation or maintenance of the cooling system should attend.

Duration: 8 Hour Program

### **COOLING TOWER BASICS**

Type of Towers  
Evaporations  
Factors Affecting Cooling Tower  
Maintaining Water Quality  
Operation in Freezing

### **STRUCTURAL COMPONENTS**

Cold Water Basin  
Water Distribution System  
Fan Deck  
Fan Cylinders  
Heat Transfer  
Drift Eliminators

### **MECHANICAL COMPONENTS**

Cold Fans,  
Speed Reducers  
Drive Shafts  
Valves

### **ELECTRICAL COMPONENTS**

Motors  
Motor Controls  
Wiring  
Cycling of Motors

### **SPECIALIZED TOWER USAGE & MODIFICATIONS**

Water Conservation  
Plume Control  
Energy Management  
Temperature Control  
Noise Control  
Drift Reduction  
Abnormal Conditions  
Vibration Analysis  
Free Cooling

### **CHILLER EFFICIENCIES**

### **AUXILIARY COMPONENTS**

Extended Oil Fill  
Prevention of Freezing  
Filtering Systems  
Fan Brakes  
Air Inlet Screens  
Distribution  
Basin Covers

### **THERMAL PERFORMANCE**

Tower Preparation  
Instruments for Testing  
Operating Conditions for Test  
Conducting Tests  
Evaluation of Test