

## CASE NO. 30

LOCATION: *Chicago, Illinois*

OWNER/MANAGER: *Chicago Hilton*

APPLICATION: *Implimentation of Heat-Timer Electronic Tempering Valve (ETV) technology for domestic hot water temperature control.*



### Heat-Timer ETV-Plus Keeps Chicago Hilton Guests Showered In Comfort

The Chicago Hilton at 720 South Michigan Avenue is one of city's most historic and iconic landmarks. For nearly a century, the hotel has been synonymous with luxury and early 20<sup>th</sup> century architectural style. Staying true to both takes effort, especially when it comes to delivering the comfort and conveniences that hotel guests have come to expect. Make no mistake – *nothing* shatters the charm of a grand old hotel more abruptly than a cold shower.

That's why in 2011, the Chicago Hilton took measures to assure its guests of what *Condé Nast Traveller* lists among the "10 Basic Things" a hotel must offer its guests: proper and continuous hot running water.

It started with a major renovation to the hotel's entire boiler room. Old, inefficient water heaters were replaced, along with circulating pumps, hot and cold water piping, balancing valves, etc. It was the perfect time to implement advanced hot water tempering technology from Heat-Timer, technology that would further assure that Hilton guests would always have a steady supply of suitably hot water regardless of the time of day.

"We wanted to maintain 125°F hot water to all of our guestrooms and needed some kind of tempering device that would also meet city code. With 1600 guestrooms

and 1700 baths, our hot water load changes a lot. We wanted a device that would keep temperatures constant despite these fluctuations," said John Howard, Chief Engineer at the Chicago Hilton.

Don D'Agostino of Meilner Mechanical Sales, Inc., a manufacturer's representative of boiler room equipment, has provided equipment solutions to the Chicago Hilton for over 15 years. Howard turned to D'Agostino for help with the Hilton's boiler room renovation.

D'Agostino immediately suggested Heat-Timer ETV Electronic Tempering Valves.



*Chicago Hilton's Chief Engineer, John Howard, and an ETV Plus controller installed for domestic hot water control at the hotel.*

“They were in desperate need of a total system upgrade. The existing water heaters were very old and inefficient,” said D’Agostino. “I told John he could simply replace the water heaters, but that if he added the ETV, he would get better efficiency and help the hotel avoid a lot of tenant complaints about hot water.”

D’Agostino explained to Howard that the Heat-Timer ETV’s help “smooth out” hot water supply while assuring hot water on demand for the hotel guests.

### **How the ETV Plus Works**

The ETV Plus package includes a stainless-steel valve body, electronic actuator, and a control module with PID-type logic. The control module constantly monitors the outlet temperature of the valve, which in the Chicago Hilton’s case is mixing 140°F hot water from the water heaters and return hot water with domestic cold water to deliver a desired temperature of 125°F. Based on the control set point, which is adjustable in 1° increments, the control uses an anticipatory logic to adjust the signal sent to the actuator. This logic keeps the valve from over- or under-reacting to minor changes in load, so that the supply temperature remains even and efficiency is optimized. The actuator mounts directly to the valve body and mixes the hot and cold water required to produce the desired outlet temperature.

The ETV Plus quickly restores the desired water temperature, even after large changes in load conditions, with minimum fluctuation. This makes it ideal for large hotels or multi-unit applications where sudden load shifts occur throughout the day.

### **The Bottom Line: Guest Satisfaction**

The hot water system at the Chicago Hilton is divided into two main zones. Two water heaters serve the first eleven floors of the hotel, while the other 3 water heaters serve floors 12 to 25. Each zone is installed with two separate ETV controls and valves, one for back-up and



*Two 2-inch Heat-Timer ETV stainless steel valves installed in parallel in the Hilton’s domestic hot water piping.*

one for regular daily service. John Howard has the capability to switch service from one valve to the other at any time. The tempering valve control is also tied into the hotel’s energy management system.

Having passed the 2½ year operational point, Howard is pleased to report that the ETV valves have delivered exactly what was promised.

“For over two years we’ve had almost no complaints about our hot water service,” said Howard. “Bottom line, it keeps our customers happy.”

D’Agostino is not surprised. Having used the ETV package numerous times in similar applications in other hotels, schools apartment buildings and even assisted living facilities, he was already confident that it would meet the demands of the Chicago Hilton.

“These valves and controls work. They’re economical. And they are simple to service and install,” said D’Agostino. “Another successful project with a satisfied customer!”