

# LODGING

## Reducing Hotel Pool Operating Costs During a Closure

By Ralph Kittler, P.E.

Due to the current situation in North America, many hotels have closed or have opted to close some of their common areas including the pool facilities. As cashflow is a concern in these challenging times, it is wise to find ways to reduce costs as much as possible when facilities are on standby.

Pools certainly consume lots of energy and the good news is there are some ways facility engineers can reduce the cost of keeping hotel pools on standby with a few simple steps.

### Lowering Evaporation Rate

The number one topic of interest with reducing pool operating costs while keeping systems on standby is to reduce the evaporation rate from the pool. Unless you drain the basin, the water will not stop evaporating. However, the rate of evaporation can be slowed down a lot with some measures.

If you are able to, cover the pool. This reduces the evaporation rate to an absolute minimum and brings with it some added benefits. The Department of Energy estimates you can lower water heating costs by as much as 70% by covering the pool (for normal use, this number is likely higher when the pool is always covered and at-rest.)

When the pool is covered, the minimal evaporation rate means the dehumidifier will not be placing many dehumidification calls throughout the day which saves on compressor runtime. In addition to using the cover, or if your hotel pool does not have a cover, you can make some other changes to save energy costs.

### Changing Water Temperature

Changing setpoints is a tricky subject, because it could backfire if done improperly. One thing you can do is lower the water temperature. You can drop it quite a bit, even down to 60°F if you

want. This will drop your water heating demand by a significant amount. Water has a high specific heat capacity which means pools respond very slowly to temperature changes. For larger pools it could take days for a water temperature setpoint adjustment to fully take effect.

Changing air setpoints take effect very quickly. While it may be tempting to lower the air temperature, keep in mind that lower air temperatures correspond with higher rates of evaporation. As a result, it isn't recommended to lower the air temperature.

If a facility wishes to lower the air temperature they should ensure it is always at least two degrees warmer than the water temperature to minimize evaporation. Also do not go below 74°F room air as the dehumidifier will not operate well below that temperature. Drop the pool water temperature and then wait until it cools down before lowering the space temperature. Otherwise the RH will spike up and the dehumidifier may be unable to keep up with the moisture load until the pool finishes cooling down and evaporation slows.

### Don't Forget Maintenance

Regular preventative maintenance should continue to be a priority while a facility is on stand-by. If anything, it's a good opportunity to shut down the unit (following proper safety protocols including cutting power at the breaker) and wash the interior airpath and coils; this is normally recommended to be done twice a year to stave off corrosion. To clean, get a rag and a water/



dish soap solution and scrub the interior airpath. Rinse with fresh water and ensure drainage or dry with a towel. For the coils, start by brushing them with a soft brush in the direction of the fins. Be careful not to bend them. After, use a pressure washer (under 100 psig) to spray a lukewarm soapy water mix into the coil, being cautious to spray the coil in the direction opposite to where the air enters. Spraying them in this counter-airflow direction ensures any foreign objects collected at the front of the coil is pushed out rather than being driven deeper into them. Other good maintenance practices to keep in mind includes changing of the airside filters, checking the condensate drain pan for blockages, and ensuring the outdoor condenser is functioning properly.

### About the Author

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