EWT LLC
ESSENTIAL WATER TECHNOLOGIES

TECHTALK

MAY 2012 | NEWSLETTER

VOL 101

DELIVERING WORLD-CLASS WATER TREATMENT PRODUCTS AND SERVICES LOCALLY

NALCO
Product Partner

FIX THE DRIPS!!!

How much does a drip (50 ml or 0.013 gal) per minute leak of chilled water cost you?

ASSUMPTIONS

Make-up water temperature: 60 F

- Energy Cost: $0.07 per kilowatt – hour
- Energy Efficiency: 0.60 kw/ton
- Water Cost: $3.00 per 1000 gallons
- Inhibitor Costs: $122.55 per 1000 gallons

WATER

(0.013 gal/min x 60 min/hour x 24 hours/day x 365 days/year)
x $3.00/1000 gal= $20.49/year

INHIBITOR

6832.8 gal/year x $122.50/1000 gal = $837.02/year

ENERGY

(6832.80 gal/year x 8.34 pounds/gal x 10 BTU/lb)/ 3415 KW/BTU
x $0.07/KW = $11.68/year

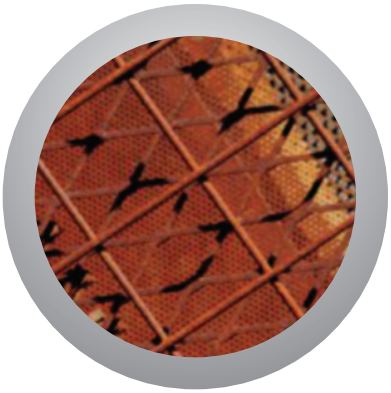
Savings you can see when you FIX THE DRIPS
by repairing a 50 ml or 0.013 gal per minute leak:
$869.19 per year and 18.72 gallons of water per day

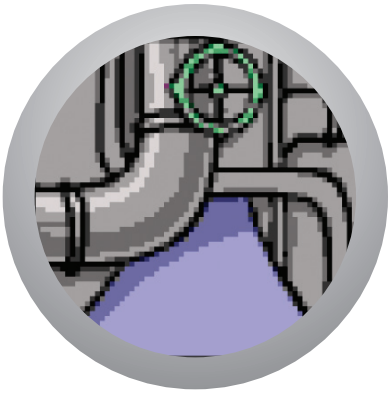
YEARLY MAKE-UP WATER RATES EXCEEDING 10% OF SYSTEM VOLUME INCREASES THE CORROSION POTENTIAL OF THAT SYSTEM BY 100%!

KEEP CLOSED LOOP SYSTEMS CLOSED!

FOR AN EVALUATION OF YOUR BOILER AND CHILLER CLOSED LOOPS, CONTACT EWT TODAY!!

1761 S. Naperville Road Wheaton, IL 60189 ▪ Phone: 630.344.6770 ▪ Fax: 630.344.6780 ▪ essentialwatertech.com





PROTECTING IDLE BOILERS

The challenge to many managers is to protect the integrity of their steam generating equipment while the boilers are not being used. A significant amount of damage that occurs to boilers during their lifetime can be associated with idle periods and extended downtime. The typical processes in place that provide protection for boiler from scale and corrosion during operational times many not be available when the boiler is not running. Plants that have several boilers sometime choose to cycle all their boilers on a regular basis. This routine sometimes causes short two or three day run times. The number of startups and shutdowns influences boiler life. The heating and cooling of the boilers due to short run times increases the mechanical stress on the boiler. Ultimately, frequent expansion and contraction along various joints and welds can lead to leaks. When possible minimize short run times. Instead, consider the following wet lay-up options.

WET LAYUPS: LESS THAN 30 DAYS

Chemistry guidelines for wet layups of less than 30 days are sulfite: 200-400 PPM; hydroxide alkalinity: 600-800 PPM; and scale inhibitor that is in normal operating range. This chemistry can vary but the goal of the program is to maintain a boiler pH of 11 and an oxygen free environment. To achieve the proper wet lay-up chemical levels in the boiler, begin increasing chemical dosages to the boiler at least one week prior to shutdown. Keep in mind that high alkalinity levels can cause foaming during on-line operations; to minimize the potential for foaming, adjust hydroxide alkalinity just prior to shutdown. Once the boiler is shut down, it is difficult to achieve adequate mixing of chemicals unless the boiler is placed on line to increase circulation. Initially, maintain 400 PPM sulfite because air intrusion will cause the sulfite level to drop. To prevent oxygen pitting, do not let sulfite levels drop below 200 PPM.

WET LAYUPS: MORE THAN 30 DAYS

Wet layup periods exceeding 30 days have the greatest potential for significant corrosion. Meticulous implementation of the guidelines, weekly monitoringare critical to the success of wet layups exceeding 30 days. Dry lay-up provides the best boiler protection for extended periods of downtime. Water Sampling and Inspection: Water sampling should be performed at least once per week. Since the water is stagnant, it is difficult to obtain accurate samples. Test from several locations. If the chemistry falls below any of the recommended levels, add more chemicals.

DRY LAYUPS: MORE THAN 30 DAYS

Dry lay-up procedures are as follows:

- Thoroughly rinse out all boiler internals with clean water
- Dry the waterside with warm air (may take several days)
- Blank all valves to ensure water cannot leak into the boiler
- Install a desiccant to maintain low humidity levels in the boiler. Desiccants include commercial grade silica gel. Follow manufacturer guidelines for proper amount

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PROTECT THE CAPITAL ASSETS OF YOUR FACILITY!!
CALL ESSENTIAL WATER TECHNOLOGIES FOR A COMPLETE REVIEW OF YOUR EQUIPMENT LAY-UP PROCEDURES!!

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