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Newsletter Article Links

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EPA Seeks Public Input on National Enforcement Priorities Through Online Forum



WASHINGTON - The U.S. Environmental Protection Agency has launched an online discussion forum to receive public input on the future priorities for EPA's national enforcement program.

The public will be able to provide feedback through the EPA Web site until December 1, giving them a forum to submit ideas for EPA to consider for new areas of enforcement focus. All ideas will be evaluated and considered for recommendation to the EPA administrator about the future direction of EPA's national enforcement and compliance priorities.

The current enforcement priorities through 2010 focus on significant environmental problems, including pollution from stormwater runoff, air toxics, concentrated animal feeding operations, and mineral processing.

To submit suggestions for potential priorities:
<http://blog.epa.gov/enforcementnationalpriority/>

Information on the enforcement priorities:
<http://www.epa.gov/compliance/data/planning/priorities/index.html>

Swamp Coolers

By: Todd R. LaPlant

The Swamp Cooler, officially known as the Evaporative Cooler is a relatively simple device that cools the air through the simple evaporation of water. They are different than refrigerant or absorption air conditioning units and are well suited for climates where the humidity is low and the air is hot. The term "Swamp Cooler" was derived due to the odor of algae in early units.

Evaporative Coolers are used primarily in the western mountain states such as Colorado, Utah, Arizona, and are used abundantly by military installations in the Middle East. In these dry, arid climates, the cost of operating an evaporative cooling system can be up to 80% less than that of refrigerative air

conditioning. They can also be used in moderate humidity locations such as commercial kitchens, laundries, dry cleaners, greenhouses, and confinement farming.

The evaporative cooler received numerous U.S. patents starting around 1906, using excelsior (wood wool) pads as elements to collect the water to come in contact with the moving air. A squirrel cage fan was used to draw air over the wood wool pads, to blow the cooled air into the establishment.

Evaporative cooling is a phenomenon in which evaporation of liquid into the surrounding air, cools the surrounding objects or liquids in contact with it. Latent heat is the amount of heat needed to evaporate the liquid which is provided from the liquid itself, surrounding gases, and surfaces. The difference between wet bulb temperature and the dry bulb temperature of the air, is a measure of potential for evaporative cooling- i.e. the greater the difference between the two, the greater the evaporative cooling effect. Two simple examples of simple evaporative cooling are the human body's perspiration and the self refrigerating beverage can.

There are 3 types of evaporative coolers: Direct Evaporative Cooling, Indirect Evaporative cooling, and Two-Stage Evaporative Cooling (or Indirect-Direct). The Direct Evaporative Cooler uses the latent heat of evaporation to change the water to vapor, changing warm air to cool moist air. Indirect Evaporative Cooling is similar to direct evaporative cooling, except it uses some type of heat exchanger and the moist air never comes in contact with the area to be cooled. Lastly, the Two-Stage Evaporative Cooler, has two stages, as one would deduct. In the first stage the warm air is pre-cooled by passing through a heat exchanger, without adding humidity. The heat exchanger is cooled by evaporation on the outside. In the direct stage, pre-cooled air passes through water soaked pads and picks up humidity as it cools. Much less humidity is needed in the direct stage, because the air supply was cooled in the first stage. The Two-Stage design eliminates the high humidity you would attain in not-so-dry climates, from indirect or direct designs.

A residential or industrial unit is primarily a direct evaporation unit, and is enclosed in a metal or plastic box, with a centrifugal blower, and a water pump to wet the evaporative cooling pads. The unit is mounted on a roof or wall of a building, and has vents on its sides, in which the fan draws the outside air through the damp pads, into the building. The building needs to have large exhaust vents to move the air, once circulated, from inside to the outside of the building and the air should only be allowed to pass through the system once due to the air reaching it's saturation point.

A popular version of the Evaporative Cooler that we as Power Engineers may be familiar with is the Evaporative Cooling Tower. This cooling tower is used to cool water or other working media to near- ambient wet bulb temperature. They are used to cool water rather than air, and are found on large buildings or industrial sites.

More information on Evaporative Coolers will be studied if you choose to take one of the Power Engineer Licensing Courses offered by one of the ASOPE approved training companies.



Small Residential/Commercial Swamp Cooler



Swamp Cooler-Misting Fan



Larger Industrial/Commercial Swamp Cooler



Myth.... These are Nuclear Reactors. TRUTH: These are Evaporative Cooling Towers used often as cooling mediums for nuclear power plants and fossil plants as well. They cool the cooling-water for the reactor, but are NOT the actual reactor and are NOT Radioactive.

Generating Stations around the World;

By Dave Preston

Wikinews, Associated Press and CNN first reported on August 17, 2009 of the Accident at a Russian Hydroelectric plant. Since then there have been numerous updates in Wikipedia. The following is an update from August 30th.

The **2009 Sayano–Shushenskaya hydroelectric power station accident** occurred at 00:13 GMT on 17 August 2009, (08:13 AM local time) when an explosion brought down the ceiling of the [Sayano–Shushenskaya hydroelectric power station](#)'s turbine hall, leading to the flooding of the turbine hall and

engine room. As of 30 August 2009 , 72 people have been found dead and 3 were still missing, presumably dead. The cause of the accident is still being investigated.

Sayano–Shushenskaya hydroelectric power station is located on the Yenisei River, near Sayanogorsk in Khakassia, Russia. Before the accident, it was the largest power plant in Russia and the sixth-largest hydroelectric plant in the world, by average power generation.



EPA Challenges American School Districts to Save Energy and Money with Energy Star

Join schools that are already using 30 percent less energy and teaching students about energy efficiency

WASHINGTON — During the back to school season, EPA is challenging school administrators and building managers to improve energy efficiency throughout their facilities. School districts can answer EPA's call-to-action by taking the Energy Star Challenge, a pledge to improve the energy efficiency of our nation's buildings. Schools that accept the challenge will join more than 500 school districts across the country that are helping to fight climate change by committing to reducing their energy use with help from Energy Star.

“Our schools are doing their best to prepare our children for the future, and now they can help make sure that future includes a clean, safe environment,” said EPA Administrator Lisa P. Jackson. “Taking the Energy Star Challenge will help participating districts cut down on their electricity bills. Money they would have spent on energy can go back into the classroom, where it really belongs.”

The annual energy bill to operate America’s primary and secondary schools totals nearly \$8 billion — more than is spent on textbooks and computers combined. Schools that take the Energy Star Challenge can use energy tracking tools, technical guidance, case studies, and other Energy Star tools and resources to help them improve their energy efficiency.

Nearly 2,000 schools have earned EPA’s Energy Star label for superior energy efficiency, including some in Oregon’s Gresham-Barlow School District, which cut energy use by 48 percent. In one year, the district saved more than \$1.3 million in utility costs, the equivalent of 24 fulltime teachers’ salaries. Council Rock, a school district in Pa., has reduced its energy use by 40 percent since 2005, mostly through improved operations and maintenance of building systems. In a three-year period, the district saved more than \$4.7 million.

EPA is also asking parents, teachers and students to work together to save energy at home and at school. To engage youth and families in learning about changes they can make in their homes and schools to save energy and protect the environment, Energy Star has teamed with Parent Teacher Organization (PTO) Today, a national organization dedicated to supporting family involvement in education. Together with Energy Star, PTO Today offers “Go Green Night” activities to the nation’s parent-teacher organizations, to help families learn about saving energy together.

Sign up your school for the Energy Star Challenge: <http://energystar.gov/challenge>
See map of Energy Star qualified schools near you: <http://www.energystar.gov/buildinglist>

From the Chairman

Larry Tarvin

I hope this craze of going green and saving money someone uses their head. I have been working with some schools to help the employees running the boilers get up to speed. It’s a disgrace what you see! They used to have boiler technicians and/or operators running the boilers and now some salesperson comes in, tells them they would save all this money if they put in hot water boilers and no operators would be needed which these facilities did and told the janitor lunch room aid to check the boilers.

Now lets look at all the money they saved. I will use three schools only in my example and believe me it’s only the top of the icing: Example 1 during a discussion the person taking care of the boilers, this person made the statement they new nothing about those humidifiers they put in, only once a week a company comes in and adds some chemical to them (steam leaks make them humidifiers). Example 2 the water softener was shut off because the person checking the boilers did not know what it was for they were using city water direct, also replacing the boilers, Example 3 the hot water boilers circulating pumps were turned off because they did not need the heat, a real surprise came when they found out they had radiant heat and cooling and the building would not get cool. It set four months so they started up the pumps, the water was black, and the response I received was it will clear up.

These are schools with our children in attendance, does anyone care? If you know of a school pulling this crap please get hold of any ASOPE BOD member

and we'll try to correct this problem. I guess it takes a tragedy to make changes and **I don't want to wait that long do You!**

ASOPE™ Cross Word Puzzle 6

Visit the link below for new ASOPE™ Cross Word Puzzle Fun.

<http://asope.org/Crossword6.html>

Answers will be posted in next month's newsletter.

Answers to last month's Cross Word Puzzle 5 is listed on the following page.

Answers to ASOPE™ Cross Word Puzzle 5

