

Maintenance: Safety, Reliability & Compliance

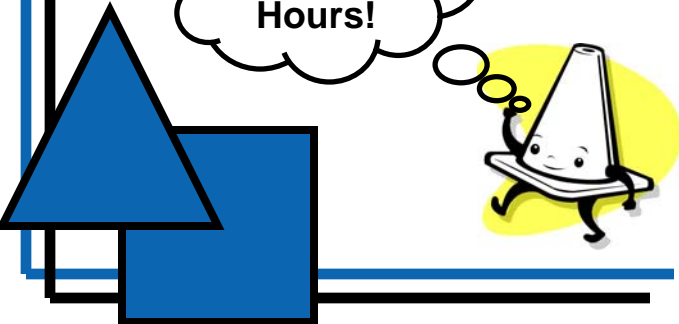
A CWEA One-Day Specialty Conference

Learning Objectives:

- Maintenance practices for control panels and PLC systems that will enhance the reliability of your facility
- Appropriate measures to make your facility compliant with current arc-flash regulations and keep your staff safe
- Maintenance approaches to keep the equipment running smoothly and earn new-found respect for your maintenance staff

Thursday May 26th, 2011
Fountain Valley, CA
<http://www.cwea.org/conferences>

**Earn 6
Contact
Hours!**






CALLING ALL LAB RATS



CWEA Presents:
Another One-Day Specialty Workshop
Methods Update Rule and 12 Essential
QC Elements for the Top Ten
Procedures in Wastewater Labs

Learning Objectives:

-  Gain Access to industry-recognized references to use for implementing the 12 essential QC elements
-  Find out what to do when wastewater testing methods are silent and industry-recognized references are unavailable.
-  Be part of an open forum to discuss difficulties encountered at the bench and share best practices to assure accurate and precise data.

Thursday May 19th, 2011
Playa del Rey, CA
<http://www.cwea.org/conferences>

Don't Get Caught In The Rat Race
Earn 7.2 Contact Hours

JWPCP's Power Generation Facility and Steam Cycle Modifications

By Tom Fang, PE and Alec Mackie

Where can LA County get more green energy for the future? One source is an extensive power generation project at the Joint Water Pollution Control Plant (JWPCP) in Carson. When completed, the state-of-the-art facility will turn wastewater sent into Los Angeles County Sanitation Districts' (LACSD) sewer system into as much as 36 megawatts (MW) of clean, green power every day.



Tom Fang Presenting at the March LABS Dinner Meeting

When JWPCP flips the switch later this year, the Power Generation Facility, known as the Total Energy Facility, will produce enough electricity to run the entire plant and, at times, sell surplus to the power grid. Turning sewage biogas into electricity is the goal of the Steam Cycle Modifications Project, according to LACSD Engineer Tom Fang who spoke during a March 17th dinner meeting of the Los Angeles Basin Section (LABS) of CWEA.



JWPCP Total Energy Facility In Construction

JWPCP's Total Energy Facility dates back to the 1980s and is an important source of power for the facility. Steam can be produced at the facility to heat the anaerobic digesters, and methane from the digesters, in turn, is used to fuel the power plant.

What's unique about the Total Energy Facility is the combined cycle power plant. First, up to three 9.9 MW gas turbines burn digester gas much like a jet engine to directly generate electricity (the Brayton power cycle). The exhaust heat is then tapped to make steam that powers an 8.7 MW steam turbine generator (the Rankine cycle). Known as cogeneration or combined heat and power (CHP), the upgraded facility will have 36 MW capacity and is expected to generate 23 MW on average. That's enough power for the entire JWPCP and then some.

Tom explained, project planning dates back to late 1990s when LACSD expanded JWPCP to full secondary treatment. As part of the expansion, digesters were added requiring more heat and generating more digester gas.

In 2008 the upgrade took on greater urgency when the former steam turbine generator suffered a catastrophic failure. The reduced capacity meant more purchased power, raising the facility's electric bill by \$2-million per year.



***LABS Dinners: Good Food and Good Times, Always!
A Festive Basil Hewitt Eagerly Awaits the Presentation.***

Tom took the audience step by step through the project's phased construction and major elements. The equipment being replaced in the project includes a steam turbine generator (STG), heat recovery steam generators (HRSGs), cooling towers, condenser, steam-to-steam generator, HVAC Chillers, High Pressure Gas Treatment System, and the Plant Control System. The three combustion turbines were previously upsized in 2001 and thus not part of recent upgrades. Startup is planned in late 2011.

Tom pointed out the project has taken years to become reality, but the payoff for the agency and its customers will be huge. Benefits include energy savings, reliable power and steam for the plant, less dependence on the grid, and avoiding utility emissions – thus fulfilling LACSD's commitment to cost-effective, environmentally friendly operations.

In January, the project team was honored by LABS with the Engineering Achievement Award for 2010. Tom's presentation is available on the LABS website at www.labsofcwea.com

Walt Disney Concert Hall – LABS Tour February 17, 2011

By Amanda Schmidt

The Walt Disney Concert Hall, located in downtown Los Angeles, is unlike any other building in Los Angeles. It was designed by Frank Gehry, using a Spanish computer program. The building has a contrast of cold steel exterior with a warm organic interior. Natural light flows in through the ceiling illuminating all five levels of the building. The exterior is comprised of 6,600 stainless steel panels shaped in curves. Each stainless steel panel has an angel hair buffer texture to it, which was all done in Italy.

In 1987, Lillian Disney donated \$50 million to build the concert hall; with the caveat that construction had to begin within five years. The parking structure below the concert hall was constructed within 5 years in order for the County to keep the money, although the concert hall had not been designed yet. The design of the concert hall began in 1995 after the Northridge earthquake. The concert room itself is designed for optimum acoustics. Those sitting in the front row and back row can hear the same quality of sound. The seats of the hall absorb the same amount of sound as a person, so the orchestra does not have to change the way they play during their rehearsals and performances. The concert hall has a 6,100 pipe organ that is endearingly compared to a basket of French fries (based on its shape). The organ was manufactured in Germany and designed by a local Los Angeles artist.

The concert hall also had a garden, which is open to the public. The garden has plants from around the world so that at least one plant will be in bloom all seasons of the year. A fountain in the shape of a lotus flower composed of broken pieces of china is the centerpiece of the garden. Near the garden is a children's amphitheater that hosts multiple performances per year. It is free for adults and children to attend.

The Grand Ave Lobby is open to the public and self-guided tours are free. One can even buy food in the cafeteria and watch a concert live on television screens. The Disney Concert Hall can be enjoyed by all ages.





ON THE FARM: BIOSOLIDS AND PATHOGEN CONTROL



6:00pm Thursday, May 19th



Please note: From 605 northbound - Take Peck Road Exit, Left onto Pellissier Place which turns into Workman Mill Road.
Photo credit: Paul Cockrell

Professor **Marylynn V. Yates** of the Dept. of Environmental Sciences at University of California, Riverside will Summarize EPA's Part 503 Rule, which sets pathogen and indicator density limits to verify pathogens are killed through the wastewater and biosolids treatment processes. She will discuss disease-causing microorganisms that may be present in biosolids and the factors that control their survival and movement in the environment. The results of recent studies on indicator organisms and the routes microorganisms take to contaminate water and food will be presented.

Please pay at the door: \$35 CWEA members / \$40 Non-members / \$20 Students or retirees

Dinner:

Buffet! Your choice of meat lasagna or chicken piccata (or both), plus salad, veggies and rice. Lemon bars for dessert.

RSVP:

RSVP by 5/13 please:
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or call Alec Mackie
(714) 428-4614

Restaurant:

**Swiss Park
Banquet Center**
1905 Workman Mill Road
Whittier 90601-1457
(Adjacent to LACSD HQ)





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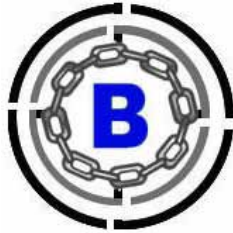
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800 Wilshire Blvd. #600
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Joseph A. Wojlaw, P.E.
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618 Michilinda Ave. Ste. 200
Arcadia, California 91007
ph: 626-796-9141
Direct: 626-568-6194
Fax: 626-568-6101



www.pacificprocess.com • lgordano@pacificprocess.com

Lou Giordano
1146 N Central Ave. Ste 123
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Chuck Parsons
5841 Engineer Dr.
Huntington Bch., CA 92649
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Matthew Copeland
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SPECIAL EVENTS CALENDAR

May 14 th	Agency and Engineering Volunteers for LA Student Outreach; Los Angeles; michael.simpson@lacity.org
May 19 th	Methods Update Rule and 12 Essential QC Elements for Wastewater Labs; Playa Del Rey, www.cwea.org/conferences
May 26 th	Maintenance: Safety, Reliability & Compliance; Fountain Valley, www.cwea.org/conferences
June 16 th	Get Your Mind In The Gutter, Mark Gold, Marina del Rey, www.labsofcwea.com

VOLUNTEER OPPORTUNITIES

On-going	LABS Flyer Artist, Monthly, From the comfort of your chair, alecm@jwce.com
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