

THE 2015 CTI ANNUAL CONFERENCE

PROGRAM continued



Monday's Technical Sessions running simultaneously between Grand Ballrooms A&B and C

Grand Ballroom C (ES&M and P&T Sessions)

Grand Ballroom A&B (Water Treating Sessions)

continued from page 11

existing conditions, evaluating and selecting new materials and performance of respective repairs will be explained. A large field erected cooling tower operating in a harsh environment with sea water bulk recirculation will be the subject of the study.

11:30a - Noon

TP15-13

Outside/Inside Approach to Evaluating Concrete Elements in Mechanical Draft Cooling Towers

Thomas Kline, Structural Group, Inc.



With over 35 years of experience in concrete assessment and repair, M. Kline has accumulated a wealth of knowledge and experience as Engineering Services Division Manager; then Director of Investigate Design Build Services both nationally and internationally, for STRUCTURAL – USA's largest dedicated concrete repair company. Mr Kline manages and directs a diverse group of technical experts in providing design-build capabilities, developing turnkey repair strategies and implementing sophisticated and verifiable repair programs for a wide range of concrete repair customers. Mr. Kline also serves as a Guest Lecturer for various seminars, symposiums and workshops. He has served/is serving as an ICRI Director and Committee Chair and as Chairman on several CTI Committees.

The Paper will address an innovative technique for assessing the condition of reinforced concrete elements in Mechanical Draft Cooling Towers while on-line and off-line. These assessments assist Asset Owners with the preparation of Repair Budgets and in making enlightened decisions for these critical assets which are typically the last piece of equipment taken down before an outage and the first piece of equipment brought up after an outage. Case Examples will be presented as well as implemented repair programs focused on this approach.

11:00a - 11:30a

TP15-12

Can Total Bacteria Measurement Be Used To Predict Legionella Presence?

Janet E. Stout, Ph.D and Scott Duda, Special Pathogens Laboratory



Dr. Janet E. Stout is the director of Special Pathogens Laboratory, and research associate professor at the University of Pittsburgh Swanson School of Engineering in the Department of Civil and Environmental Engineering. A clinical and environmental microbiologist, Dr. Stout is internationally recognized for more than 30 years of pioneering research in Legionella. Her expertise includes prevention and control strategies for Legionnaires' disease. Toward that end, she has evaluated all major Legionella disinfection technologies in use today, and continues to explore new approaches for Legionella detection and control. Dr. Stout's research is widely published in major medical and scientific peer-reviewed publications, and she co-authors Legionella chapters in books and manuals, such as APIC Text, Hospital Epidemiology and Infection Control and the Manual of Clinical Microbiology. An advocate for prevention, she serves on the Legionella guideline committee for the Cooling Technology Institute and on ASHRAE committees: Legionella Guideline 12 and the proposed Legionella standard.

Microbiological growth in cooling water systems presents several challenges for water treatment providers. Culture methods such as heterotrophic plate count (HPC) and "dipslides" provide valuable information related to general microbiological water quality but require several days to produce results. Alternative methods using adenosine triphosphate (ATP) measurement provide faster results and have been applied when rapid water quality assessment is necessary. Our evaluation reviewed potential applications for ATP analysis in cooling water systems. We also assessed whether total bacteria measurement using culture methods or ATP analysis can predict the Legionella presence/absence using both experimental data and data collected from field observations.

11:30a - Noon

TP15-14

From Vision to Practical and Cost Effective Design

Roy Holliday, GE Water & Process Technologies, Europe; Shereif Allsayed, GE Water & Process Technologies, Middle East & Africa and Amr Eladawy, Abu Qir Fertilizer Co., Egypt



Mr. Holliday has 52 years' experience in water treatment, particularly Cooling Water Treatment, in a Technical capacity troubleshooting, program design and product development. Eight of those years he worked in Power Stations for the UK Central Electricity Generating Board; three years he was with British Steel Tubes Division at a fully integrated Iron and Steel and Finishing Plant (tubes) at Corby, Northants, UK and 41 years with GE, having the responsibilities for UK, South East Asia, Europe, Middle East and Africa. Roy has been hired as an independent consultant by International Oil Corporations and Food and Beverage Industry Companies, and most recently for the Jordanian Potable Water

Distribution System Project (Disi). He has written, presented and has published more than 15 technical papers for various organisations or conferences.

A major Middle East Fertilizer Plant, with a long history of successfully reusing water in open evaporative cooling systems, had a mission to further reduce water consumption, effluent discharge and operating costs. Various approaches were proposed and appraised. This paper discusses options available for applicable approaches to reduce water consumption, effluent and operating cost; with an ultimate aim to achieve the vision of Zero Liquid Discharge.

**This ends the Water Treating Papers for Monday's program.
Below is the schedule for Monday afternoon.**

Afternoon Schedule for Monday, February 9th

- 12:15p - 1:45p **Group Luncheon, Armstrong Ballroom**
- 2:00p - 3:30p **Water Treating Panel Discussion, Grand Ballroom A&B**
- 3:00p - 4:00p **☕ Break**
- 3:45p - 5:00p **Technical Committee Meetings**
 - Engineering Standards & Maintenance, **Grand Ballroom D**
 - Performance & Technology, **Grand Ballroom C**
 - Water Treating, **Grand Ballroom A&B**
- 5:00p - 12:00a **Hospitality Suite - Armstrong Ballroom (Bar Closes @ 9:30p)**
- 6:00p - 10:00p **Monday Night Dinner (information on page 17)**

Group Luncheon 12:15p - 1:45p Armstrong Ballroom

2:00p - 2:30p

TP15-15

Revision of the Best Available Technique (BREF) For Industrial Cooling Systems

Martin Cordelle, EDF (Electricité De France)



Martin CORDELLE is a mechanical engineer; he has been working at Electricité De France (EDF) Company since 1986. He is currently heat sink engineering coordinator, in the EDF Generation Electromechanical Department (CNEPE, France). He began his career doing R&D in hydraulic field (1986-1991). He then joined the Nuclear Engineering Department, where he held various positions in relation with heat sink of nuclear power plants, in Civil Work Department (1991-2002) then in Heat Sink Safety/operating Department, as team manager. He was directly involved in nuclear power plants new sites selection to define their cooling systems, in France (2006), South Africa (12/2007), Poland (2010) and recently in Saudi Arabia (04/2014). Since 2013, he is more particularly in charge of preparing the review of BREF (Best techniques REferences documents) about industrial cooling systems, as French member of EURELECTRIC (Association of the Electricity Industry in Europe).

The BREF (Best References documents) Industrial Cooling System (ICS) is an European Community document which gives the 'Best Available Technique' in the environment field. The previous document written in 2001 was a guide line for the design of ICS. It will be established a new version in 2015; the conclusions will become prescriptive, for all European countries. It will take into account the evolution of regulation in Europe, technological progress and new scientific knowledge. The EDF company works to establish a 'wish-list' for the next version of the BREF ICS on specific issues: Efficiency of ICS, use of biocides, emissions of chemical substances and heat into surface water, reduce water needs, entrainment of fish, and reduction of noise. The present paper shows the key points for French utilities.

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