

# COOLING TECHNOLOGY INSTITUTE

## Bibliography of Technical Papers

Categorized for Technical Content  
(May be subject to multiple interest)



# Cooling Technology Institute

## Bibliography of Technical Papers

The following papers have been presented at conferences of the Cooling Tower Institute and are listed by categories. Efforts are being made to simplify our filing system. The new order number is in the first column with the old order number in parenthesis after the title. This will help in cross referencing numbers. Reproduced copies of these papers are available from the CTI office, PO Box 73383, Houston, TX 77273. Please order by the new order number. Papers are priced at \$10/each, plus processing fee. Prepayment is requested on all orders \$25 or less. Due to the total number of papers in CTI's possession any paper written before 1990 (with exceptions) is considered "Historical" and not listed in this printed document. A complete listing can be found on our website – [www.cti.org](http://www.cti.org).

### ANALYSIS METHOD

- TP10-19 ..... A Systematic Approach to Performing, Documenting and Reporting Inspections of Field .....2010  
Erected Cooling Towers  
*Casey Yurkovitch, GEA Power Cooling, Inc.; Philip Poll, OBR Cooling Towers, Inc.*
- TP10-14 ..... Automated Feed of Patented Aseptrol CW Oxidizing Biocide Provides "Best Practice" in .....2010  
Delivery of Chlorine Dioxide to Small-Scale Systems  
*Keith Hirsch, BASF Corporation; John Byrne, Richard McCaffrey, BASF Catalysts, LLC*
- TP10-05 ..... Complex Structural Analysis Simplifies Repair Phasing in Restoration of Hyperbolic Cooling .....2010  
Towers  
*Narendra Gosain, Ph.d., P.E. and Farouk Mahama, Ph.D., Walter P. Moore and Associates, Inc.*
- TP10-01 ..... Your Cooling Tower Project On Time, On Budget.....2010  
*David Suptic, David M. Suptic, P.E. LLC*

### CLEANING SYSTEMS

- TP10-08 ..... Cooling Tower Water Conservation .....2010  
*Jon J. Cohen and Henry A. Becker, H-O-H Water Technology*
- TP99-15 ..... Online Cooling Tower Cleaning and Water Division.....1999  
*Cliff Roy and John Foy, Syncrude Canada LTD; Lloyd Olson, International Cooling Towers*
- TP98-13 ..... New Technology Improves Tower Basin Cleaning.....1998  
*Randy Delenikos and Bill Leizear, LAKOS Filtration System*
- TP96-02 ..... Online Cooling Tower Cleaning.....1996  
*Mark Coyle and Gordon Barksdale, American Inland Divers, Inc.*

### CONVERSION

- TP99-14 ..... Conversion of a Crossflow Tower to a Double-Level, Multi Fan Counter Flow Tower .....1999  
*Vincent Wiltz, Cooling Tower Specialist*
- TP97-02 ..... Com Ed Co. Byron Generating Station Unit 1 Crossflow to Counterflow Conversion.....1999  
*James O. Smith, Com Ed Co.; Mark Muder, Marley Cooling Tower*

### COOLING TOWER WATER BLOWDOWN TREATMENT

- TP07-07 ..... Zero Blowdown for Cooling Towers.....2007  
*Sam Owens, Chemico International, Inc.*
- TP06-14 ..... Copper Removal From Cooling Tower Blowdowns .....2006  
*Christopher Howell and David Christophersen, Crown Solutions, Inc.*
- TP06-02 ..... Cooling Tower Blowdown Limitations: Case Studies of New Wastewater Permit Limits .....2006  
*Jennifer Cunningham, Air Liquide Large Industries US LP*
- TP01-10 ..... Hero Process - Recovery Reuse of Cooling Tower Blowdown and as a Preconcentrator for .....2001  
ZLD Application  
*Charles H. Fritz, PE, Black & Veatch Corp; V.J. Nathan, Aquatech Int'l Corp*

### COOLING TOWER WATER CHEMISTRY

- TP10-18 ..... Oil-In-Water UV Fluorescence Sensor in Cooling Tower and Other Industrial Applications .....2010  
*Vadim B. Malkov, Hach Company*

TP09-11 .....	Use of New Generation Polymer for Clarification of Water .....	2009
	<i>SanJay Kumar Dubey, Lim Aun Siong, Genting Sanyen Power Sdn Bhd</i>	
TP08-13 .....	Intermittent Feeding of Aseptrol Tablet Redefines the Role of ClO2 in Small and Mid-Sized.....	2008
	Cooling Water Systems <i>Keith Hirsch, BASF Corporation</i>	
TP06-13 .....	Experience With Monitoring and Control of Microbiological Growth Due To .....	2006
	Hydrocarbon Ingress In Open Cooling Water Systems .....	
	<i>Arif Jaffer, Fred Chastain, and Jennifer Fichter, Baker Hughes/Baker Petrolite</i>	
TP96-06 .....	Methods for Chlorine Control in Critical Cooling Towers.....	1996
	<i>Stephen A. Wortendyke, Capital Controls Co., Inc.</i>	
TP95-16 .....	Traced Biocides: A New Technology for Industrial Water Treatment.....	1995
	<i>William F. McCoy, Scott A. Borchardt, and Mark R. Hermiller, Nalco Chemical Company</i>	
TP90-09 .....	Hypohalous Acid and Haloamine Flashoff in Industrial Evaporative Cooling Systems .....	1990
	<i>William F. McCoy, Great Lakes Chemical Corporation</i>	

## COOLING TOWER WATER TREATMENT PROGRAMS

TP11-04 .....	An Improved Method For Calculating Calcium Carbonate Deposition On Heat .....	2011
	Transfer Surfaces <i>Michael Coughlin, Diversey Inc.</i>	
TP10-10 .....	What is the Best Water Treatment Program for My Tower.....	2010
	<i>Robert J. Cunningham, Arthur Freedman and Associates</i>	
TP09-19 .....	Progressing the Frontier of Cooling Water Process Control.....	2009
	<i>Kevin Milici and Gary Geiger, GE Water and Process Technologies</i>	
TP08-15 .....	Physical Water Treatment for Cooling Towers .....	2008
	<i>David McLachlan, Fluid Treatment Solutions, Inc.</i>	
TP08-09 .....	Improved Calcium Phosphate Control for Stressed Systems.....	2008
	<i>Gary Geiger, GE Water and Process Technologies</i>	
TP09-07 .....	The Design and Implementations of Physical Water Treatment Technology in Large Flow .....	2009
	Industrial Applications <i>David McLachlan and Allen Wilson, Fluid Treatment Solutions, Inc.</i>	
TP09-01 .....	Defining "Green" Technology in Cooling Water Systems Operation and Cooling Water Treatment....	2009
	<i>James Green, Heisler Green</i>	
TP08-23 .....	Tracking Molybdate in Cooling Water.....	2008
	<i>Vadim B. Malkov and Phil Kiser, Hach Company; Blaine Nagao, Chemical, Inc.;</i> <i>Steve Dumler, H2Tronics</i>	
TP08-21 .....	A Low-Cost, Safe, Effective Halogen Disinfectant for Cooling Towers.....	2008
	<i>Rodney Herrington &amp; Susan B. Rivera, Miox Corporation</i>	
TP08-19 .....	Dolphin "Pulsed Power" Cooling Water Treatment .....	2008
	<i>David Alley, Clearwater Systems; Paul Puckorius, Puckorius and Associates</i>	
TP08-07 .....	New Solutions to Old Problems: Technical Innovation in Mature Markets .....	2008
	<i>Daniel M. Cicero, Nalco Company</i>	
TP08-05 .....	The Application of Solid Water Treatment Chemistry for Cooling Towers.....	2008
	<i>Fred Lattin, and James Heimert, APTEch Group, Inc.</i>	
TP07-06 .....	Cooling Tower FRP Color Considerations.....	2007
	<i>Clinton Smith, Strongwell</i>	
TP06-18 .....	Development of an Online Multicomponent Water Treatment Analyzer.....	2006
	<i>John Richardson, Richard H. Tribble, Michael G. Trulear and Rich Geisler, ChemTreat, Inc.</i>	
TP06-16 .....	Optimizing Industrial Cooling Water System Performance With Proper Monitoring and Control .....	2006
	<i>Jean M. Gucciardi, Gucciardi Consulting, Inc. and Loraine Huchler, P.E., CMC, Martech Systems, Inc.</i>	
TP06-12 .....	Advances in Cooling System Treatment, Monitoring and Control.....	2006
	<i>Daniel M. Cicero, Nalco Company</i>	
TP06-08 .....	Realizing the Full Potential of Your Cooling Tower Lime/Soda Ash Blowdown Softener .....	2006
	<i>Robert Strandberg, Covanta Energy and Terry McCoy, ChemTreat, Inc.</i>	
TP05-19 .....	Effective, Chemical-Free Microbiological Control for Industrial Cooling Water Systems.....	2005
	<i>Joanne Kuchinski, Linda Rusznak and Edward Beardwood, Ashland Specialty Chemical</i>	

TP04-10 .....	A Novel Polymer for Effective Cooling Water Scale Control in Stressed .....	2004
	<i>Abdulmohsen D. Alamajnouni, Saudi Aramco; Arif E. Jaffer, Baker Petrolite</i>	
TP03-19 .....	Experience With On-Line Monitoring of Biofilms in Plant Applications .....	2003
	<i>George Licina, Structural Integrity Associates</i>	
TP03-10 .....	Real-Time Biological Monitoring .....	2003
	<i>Ken Davenport, Biotrace, Inc.</i>	
TP00-03 .....	A Non-Chemical Water Treatment Device.....	2000
	<i>John Lane, Clearwater Systems; Gerald Kutner, Engelhard</i>	
TP99-07 .....	Tweaking-The Art and Science of Successful Cooling Water Treatment .....	1999
	<i>M.A. (Andy) Ward and Thomas M. Laronge, Thomas M. Laronge, Inc.</i>	
TP99-03 .....	Actives Based Monitoring and Control for Improved Cooling System Management and Performance 1999	
	<i>Michael G. Trulear and John Richardson, ChemTreat, Inc.</i>	
TP99-01 .....	Halogen Stable Alkaline Cooling Program .....	1999
	<i>Dave Ritz and Gary Geiger, BetzDearborn Inc.</i>	
TP98-02 .....	Making the Best Choices in Water Treatment Additives .....	1998
	<i>Roy Manley, BetzDearborn, Inc.</i>	
TP95-08 .....	Maximizing Cooling Tower Cycles of Concentration.....	1995
	<i>Robert J. Cunningham, Chemisis Inc.</i>	
TP94-11 .....	A Mechanistic Study of Corrosion Inhibition by Phosphonates.....	1994
	<i>B.J. Hepburn and P.J. Sullivan, FMC Corporation</i>	
TP94-04 .....	Monitoring Biological Control in Cooling Systems .....	1994
	<i>Gary G. Engstrom and Jack C. Tully, Grace Dearborn</i>	
TP94-03 .....	Development of High Cycle Cooling Water Treatment Program.....	1994
	<i>Binu S. Khambatta, Daniel A.Meier and Michael A. Kamrath, Nalco Chemical Company</i>	
TP92-12 .....	Alkaline Phosphate - A New Direction for Phosphate Cooling Water Treatment.....	1992
	<i>Christine M. Stuart and Phil Eastin, Nalco Chemical Company</i>	
TP91-09 .....	Laboratory Development of Novel Multifunctional Polymers for Cooling for Water Use .....	1991
	<i>Ingrid Brase and Joseph Pasapane, National Starch and Chemical Co.;</i> <i>James H. Belcher, Alco Chemical Company</i>	

## CORROSION

TP11-12 .....	The Progression of Automation and Process Control for the Management of Open.....	2011
	Cooling Water Systems <i>Kevin Milici and Gary E. Geiger, GE Water &amp; Process Technologies</i>	
TP10-17 .....	Corrosion Protection of Concrete for Cooling Towers.....	2010
	<i>Javier Balma, Ph.D., P.E. and Dilip Choudhuri, P.E.</i>	
TP10-12 .....	Copper Corrosion Control and Minimmized Copper Discharge from Cooling Tower .....	2010
	<i>Jasbir S. Gill, Ph.d. and Ed Grodecki, Nalco Company</i>	
TP07-23 .....	A New Closed System Treatment Program for Industrial Applications.....	2007
	<i>William Beer and Rosa Crovetto, GE Water and Process Technologies</i>	
TP07-21 .....	New Liquid Biocide Products for Specific Industrial Water Treatment Requirements.....	2007
	<i>Christopher J. Nalepa, Farrah Azarnia and Tina Craft, Albemarle Corporation</i>	
TP07-08 .....	Corrosion-Induced Concrete Deterioration and Rehabilitation of Natural Draft Hyperbolic .....	2007
	Cooling Towers <i>Leandro Etcheverry, Structural Preservation System</i>	
TP07-03 .....	Cooling Water - Optimal Control of Admiralty Corrosion Utilizing Multiple Halogen Sources.....	2007
	<i>Gene Dombrowski, Chemtreat, Inc.; John Zimowski, Dupont</i>	
TP06-06 .....	Improving Localized Corrosion in a Complex Cooling Water System .....	2006
	<i>Michael H. Dorsey and Arthur F. Brunn, DuPont; Kevin Daigle, ChemTreat, Inc.</i>	
TP02-15 .....	Corrosion and Biofouling Control in a Refinery Cooling Water System Using Sewage Water.....	2002
	as a Make Up <i>Abdulmohsen Almajnouni, Saudi Arabian Oil Company; Arif Jaffer, Baker Petrolite</i>	
TP97-14 .....	Elucidation of Components of Aromatic Triazole Demand in Cooling Water Systems and.....	1997
	Development of More Environmentally Friendly Yellow Metal Corrosion Inhibitor <i>Narasimha M. Rao, Donald A. Johnson, and Frank F. Lu, Nalco Chemical Company;</i> <i>N.P. Nghiem, Oakridge National Laboratory</i>	

TP96-14 .....	Corrosion Inhibition of Ferrous Metal in Soft Water Under Cooling Water Conditions .....	1996
	<i>Colin Hogan, FMC Process Additives Division</i>	
TP96-12 .....	Analyzing Corrosion Rates of Copper for Open Re-circulating Systems.....	1996
	<i>Gary Caplan, Diversey Water Technologies Ltd.</i>	
TP96-10 .....	Cathodic Protection of the Palo Verde Cooling Towers.....	1996
	<i>William R. Schutt, Matcor, Inc.</i>	
TP94-13 .....	The Control of Ferrous Metal Corrosion in Cooling Water by a Novel Phosphonate Corrosion Inhibitor .....	1994
	<i>David A. Little, Wayne A. Mitchell and E.S. Lawson, Grace Dearborn</i>	
TP94-10 .....	Pitting Corrosion of Cooling Water Systems.....	1994
	<i>Mark A. Lisin, P.E. and Thomas M. Laronge, Thomas M. Laronge, Inc.</i>	
TP91-14 .....	Update on White Rust Corrosion and Control.....	1991
	<i>Keith M. Johnson and Joseph B. Mihelic, Drew Industrial Division</i>	
TP91-13 .....	Cooling Water Corrosion Problems in the Utility Industry: MIC Case Histories.....	1991
	<i>Paul R. Puckorius and Robert T. Hess, Puckorius and Associates, Inc.</i>	
TP90-08 .....	An Alternative Oxidizer, Bromine Offers a Northeast Chemical Plant Improved Corrosion.....	1990
	and Fouling Control <i>Mark J. Giusto, Drew Industrial Division</i>	
TP89-11 .....	Investigation of Alternative Inhibitor Programs for Highly Corrosive Alkaline Waters.....	1989
	<i>Greg Simpson and Richard Murtagh, Burmah Technical Services, Inc.</i>	
TP89-01 .....	Reducing Copper Corrosion and Discharge via a Novel Inhibitor and Applications Program.....	1989
	<i>Orin Hollander and Charles Shelton, Betz Industrial; Ronald Griffin, City of Tallahassee Electric Dept.</i>	
TP87-14 .....	Corrosive Water - A Brazilian Reality .....	1987
	<i>Jose Otavio Silva, Messias Candido Amaral and Flavio Bianchi, Aquatec Quimica, S.A.</i>	

## DRIFT

TP11-11 .....	New Methods for Drift Eliminators Performance Evaluation .....	2011
	<i>Jan Cizek and Ludmila Novakova, CTU In Prague</i>	
TP09-24 .....	A Digital Method for Analyzing Droplets on Sensitive Paper .....	2009
	<i>Dudley Benton, McHale &amp; Associates</i>	
TP09-16 .....	Meteorological Considerations in the Design of Plume Abated Cooling Towers .....	2009
	<i>Kenneth W. Hennon and David Wheeler, CleanAir Engineering</i>	
TP06-11 .....	A Review of Drift Eliminator Performance.....	2006
	<i>William C. Miller, Timothy E. Krell, Brentwood Industries, Inc.</i>	
TP05-12 .....	An Economical Solution to Cooling Tower Drift.....	2005
	<i>G.C. Pederson, Frank Power and Arthur Braren, KIMRE, Inc</i>	
TP03-08 .....	Cooling Tower Emissions Quantification Using The Cooling Technology Institute Test Code .....	2003
	ATC-140 <i>Kenneth W. Hennon and David Wheeler, Power Generation Technologies</i>	
TP99-13 .....	A Non-Metallic Air Cooled Heat Exchanger for Cooling Tower Plume Reduction .....	1999
	<i>David M. Suptic, The Marley Cooling Tower Company</i>	
TP98-16 .....	The Relationship Between SP and HGBIK Drift Measurement Results - New Data Creates a Need ....	1998
	for a Second Look <i>Jack R. Missimer, Ph.D., P.E., David E. Wheeler, P.E., and Kenneth W. Hennon, Power Generation Technologies</i>	
TP98-08 .....	Cooling Tower Plume Abatement at Chicago's O'Hare Airport.....	1998
	<i>J.D. (Doug) Randall, P.E., The Marley Cooling Tower; Michael C. Long, P.E., Black &amp; Veatch; Romesh K. Kansal, P.E., Dept of Aviation, City of Chicago</i>	
TP96-05 .....	Prediction of the Plume From a Cooling Tower .....	1996
	<i>Kazutaka Takata, Kiyoshi Nasu, and Hiroyuki Yoshikawa, Shinko Pantec Co., Ltd.</i>	
TP94-16 .....	Drift Eliminators and Fan System Performance .....	1994
	<i>Dr. Bryan R. Becker, P.E., Assoc. Professor of Mechanical Engr., Univ. of Missouri; Larry F. Burdick, P.E. Project Engineer, The Marley Cooling Tower Company</i>	
TP94-01 .....	Drift Testing - Scale Up From Test Cell To Field Acceptance Test.....	1994
	<i>David Brill, Black &amp; Veatch; Joe H. Lander, Florida Power Corp.</i>	
TP93-07 .....	Simultaneous Comparison of the CTI HBIK and the EPA Method 13A Isokinetic Drift Test .....	1993

## Procedures

*Michael R. Whittemore, Brentwood Industries, Inc.; Thomas E. Weast, Midwest Research Institute*

TP93-01 .....	Plume Abatement and Water Conservation With The Wet/Dry Cooling Tower.....	1993
	<i>Paul A. Lindahl, &amp; Randall W. Jameson, The Marley Cooling Tower Company</i>	
TP92-10 .....	Reduction of Cooling Tower PM10 Emissions Due to Drift Eliminator Modifications at a .....	1992
	Chemical Refining Plant	
	<i>Thomas E. Weast, P.E. and Nicholas M. Stich, Midwest Research Institute;</i>	
	<i>Gordon Israelson, P.E., Westinghouse Electric Corporation</i>	
TP90-12 .....	Comparison of Two Isokinetic Drift Measurement Methods .....	1990
	<i>Paul Lindahl and O.L. Kinney, The Marley Cooling Tower Company</i>	
TP87-08 .....	An Economical Solution to Cooling Tower Drift.....	1987
	<i>George C. Pedersen, P.E., Kimre, Inc.; V. Keith Lamkin, P.E., Engineered Processes, Inc.;</i>	
	<i>Mike Seich, The Dow Chemical Company</i>	
TP86-01 .....	Comprehensive Drift Measurements on a Circular Mechanical Draft Cooling Tower .....	1986
	<i>Karl Wilber, Environmental Systems Corp; Ken Vercauteren, Arizona Public Service</i>	

## DRY COOLING

TP07-04 .....	Effects of Wind on Air-Cooled Condenser Performance .....	2007
	<i>John S. Maulbetsch, Maulbetsch Consulting; Micael N. Difilippo, Consultant</i>	
TP06-09 .....	Enhancement of Air Cooled Condenser Operation in Power Plants.....	2006
	<i>Ram Chandran, Holtec International</i>	
TP06-07 .....	Evaporative Pre-Coolers for Air Cooled Heat Exchangers .....	2006
	<i>Matt Smith, L.S. Enterprises; Rich Aull, Brentwood Industries;</i>	
	<i>Robert Giammaruti, Hudson Products Corporation</i>	
TP05-06 .....	Pressure Recovery Effects in Air-Cooled Installations.....	2005
	<i>Henk Van Der Spek, Howden Cooling Fans</i>	
TP04-13 .....	Performance Improvement to Existing Air-Cooled Heat Exchangers .....	2004
	<i>Robert Giammaruti, Hudson Products Corporation</i>	
TP03-01 .....	Why Every Air Cooled Steam Condenser Needs A Cooling Tower .....	2003
	<i>Luc DeBacker, PhD and William M. Wurtz, Hamon Dry Cooling</i>	
TP98-15 .....	The New Wet/Dry Cooling Tower Without Finned Tube Dry Section (NWD) .....	1998
	<i>Toshio Miura and Osamu Gotoh, Ishikawajima Plant Engineering &amp; Construction Co., Ltd.</i>	

## ENERGY EVALUATION

TP10-16 .....	Water/Energy Nexus, Comparing the Relative Value of Water Versus Energy Resources .....	2010
	<i>Jennifer Hamilton, Tom Bugler and John Lane, Evapco, Inc.</i>	
TP10-15 .....	Enhanced Cooling Tower for Colder Water, Energy Savings and Reduced Evaporation .....	2010
	<i>Jarrell Wenger, Engineering Economics, Inc.</i>	
TP08-02 .....	Evaluating Your Cooling Tower .....	2008
	<i>Richard DesJardins, DesJardins Consulting</i>	
TP07-22 .....	Variable Frequency Drives: Operation and Application with Evaporative .....	2007
	<i>Benjamin Cohen, Baltimore Aircoil Company</i>	
TP01-07 .....	Cooling Towers and VFD's .....	2001
	<i>Rick Foree, Danfoss Drives</i>	
TP00-12 .....	Developing the Worth of Colder Water in a Steam Turbine Generating Station.....	2000
	<i>Thomas H. Hamilton, P.E., Consulting Engineer</i>	
TP96-03 .....	Variable Speed Fan Drives for Cooling Towers.....	1996
	<i>William F. Immell, The Marley Cooling Tower Company</i>	
TP91-10 .....	Strategies For Improved Cooling Tower Economy .....	1991
	<i>Steve Adams, Ecodyne Cooling Tower Services; John Stevens, Film Cooling Towers</i>	
TP87-04 .....	Counterflow Cooling Tower Design With High Energy Evaluations .....	1987
	<i>Paul Lindahl, Jr. &amp; Thomas Bugler, III, The Marley Cooling Tower Company</i>	
TP85-18 .....	A System Efficient Approach to Cooling Tower Energy Modifications .....	1985
	<i>Greg M. Kelly, The Marley Cooling Tower Company</i>	

## ENVIRONMENTAL IMPACT

TP10-13	Design Considerations for Cooling Tower Systems with Critical Demands <i>Frank Bowman and Mike Bickerstaff, Composite Cooling Solutions, L.P.</i>	2010
TP10-09	Plume Abatement – The Next Generation <i>Paul Lindahl and Ken Mortensen, SPX Cooling Technologies</i>	2010
TP09-03	Hurricane and Crawfish - A Unique Clarification Problem <i>Mike Dorsey, DuPont</i>	2009
TP05-05	Atmospheric Emissions from Evaporative Cooling Towers <i>Wayne Micheletti, Wayne C. Micheletti, Inc.</i>	2005
TP94-06	Molybdate Use in Cooling Towers: Impact of the New EPA Sludge Rule and Alternative Approaches <i>Brian Lee and Brian Vaska, Drew Industrial Division</i>	1994
TP92-02	The Latest Worldwide Technology in Environmentally Designed Cooling Towers <i>Gary R. Mirsky, Jean-Pierre Libert, and Kathy Bryant, Hamon Cooling Towers; Franz Bouton, Hamon Sobelco, S.A.</i>	1992
TP91-12	Comparison of Cooling Tower Mineral Mass Emissions by Isokinetic EPA Method 13A and Heated Cascade Impactor Tests <i>Gordon Israelson, P.E., Westinghouse Electric Corp; Nicholas M. Stich and Thomas E. Weast, P.E., Midwest Research Institute</i>	1991

## ENVIRONMENTAL IMPORTANCE

TP11-02	The 3 R's of Sustainable Water Cooled Systems Operation <i>Allen Wilson, Fluid Treatment Solutions, Inc.</i>	2011
TP07-20	Sea Water Cooling System Design <i>Naresh Shah, Ph.D., Worley Parsons</i>	2007

## FANS & ASSOCIATED EQUIPMENT

TP11-28	Electric Motors 101: What You Need To Know <i>Bill Martin and Robbie McElveen, Baldor Electric Company</i>	2011
TP11-23	Retrofit of Cooling Fans in Hybrid Cooling Towers with Energy Savings, Airflow & Vibration Improvement <i>Regina Wong Chin Pau, Genting Sanyen Power and Jos Oude Luttikhuis, Howden Cooling Fan</i>	2011
TP11-01	Effect of Air Flow on Size and Weight of Direct Drive Permanent Magnet Motors <i>Robbie McElveen and Bill Martin, Baldor Electric Company</i>	2011
TP09-21	Safely Stopping, Holding and Locking Out Cooling Tower Mechanical Sets <i>Duane Byerly, Rexnord Industries</i>	2009
TP09-18	Recent Development in Motor Technology Allow Direct Drive of Low Speed Cooling Tower Fans <i>Robbie McElveen and Bill Martin, Baldor Electric</i>	2009
TP08-16	The Cost of Noise <i>Robert Giammaruti, Hudson Products; Jess Seawell, Composite Cooling Solutions, LP</i>	2008
TP08-14	Fan Stall Problems; Cause or Effect <i>Charles Foster, Diagnostic Cooling Solutions, Inc.</i>	2008
TP08-06	Investigation on Fan Noise Generation and Its Reduction <i>Claudio Cataldo, Cofimco Srl</i>	2008
TP05-07	Fan Air Flow Testing on Cooling Towers and ACHES <i>Robert Giammaruti, Hudson Products Corporation</i>	2005
TP05-06	Pressure Recovery Effects in Air-Cooled Installations <i>Henk Van Der Spek, Howden Fans</i>	2005
TP04-04	New Fan Blade Tip Design Reduces Structural Vibrations - Verification in Practice <i>Sander C. Venema, Howden Cooling Fans; Chris B. Lazenby, Southern Company Services</i>	2004
TP03-11	Motor Efficiency - A Guide for Reduced Consumption <i>John Malinowski, Baldor Electric Company</i>	2003
TP03-05	Vibration Control: New Fan Blade Tip Reduces Pulsation <i>Henk van der Spek, Howden Cooling Fans</i>	2003
TP02-12	A Flexible Blade-To-Hub Connecting System Opposed To A Rigid Element	2002

*Riccardo Provasi, Cofimco, S.p.A. In An Axial Fan*

TP01-05 .....	Cooling Tower #4, Fan Failure.....	2001
	<i>Dennis P. Shea and Shelby Sustala, Solutia, Inc.</i>	
TP00-05 .....	Evaluation of the Unsteady Loads on a Fan Blade .....	2000
	<i>Giorgio Cipelletti, Cofimco S.P.A.</i>	
TP99-11 .....	Advanced Airfoils for Cooling Tower Fan Blades .....	1999
	<i>James Tangler and Cris Bosetti, National Renewable Energy Lab; Dan Somers, Airfoils Inc.</i>	
TP99-06 .....	Structural Design Evolution of a Large Fiberglass Fan Blade.....	1999
	<i>Larry Burdick, The Marley Cooling Tower Company</i>	
TP98-01 .....	Noise Testing of Cooling Tower Fan Drives.....	1998
	<i>Craig Burriss, Amarillo Gear Company</i>	
TP97-12 .....	Maximizing Fan Performance .....	1997
	<i>Robert C. Monroe, Hudson Products Corporation</i>	
TP97-06 .....	The Influence of Materials of Construction on Leading Edge Erosion of Fiberglass Fan Blades .....	1997
	Used on Cooling Towers <i>Larry F. Burdick, The Marley Cooling Tower Company</i>	
TP93-03 .....	Reduction of Noise Generation by Cooling Fans .....	1993
	<i>Ir. Henk F. van der Spek, Ventilatoren Sirocco Howden B.V.</i>	
TP88-14 .....	Hydraulic Cooling Tower Driver the Innovation.....	1988
	<i>John A. Dickerson, Hem, Inc.</i>	
TP88-13 .....	Auto Pitched Fans in Cooling Towers.....	1988
	<i>Charles Chittom, Chittom International</i>	
TP87-12 .....	Anomalies in Fan Efficiency Calculations .....	1987
	<i>Weyert E. De Boer, Ventilatoren Stork Hengelo</i>	

**Driveshafts:**

TP05-04 .....	Natural Frequency Characteristics of Drive Shafts .....	2005
	<i>Robert Poling, Amarillo Gear Co.</i>	
TP97-10 .....	Mechanical Damage Caused by EMF Generated From Fast Bus Reclosure.....	1997
	<i>James T. Heard, Addax, Inc.</i>	
TP91-11 .....	Composite Couplings for Cooling Towers .....	1991
	<i>Dennis Van Laarhoven, Consultant</i>	

**Vibration:**

TP08-08 .....	Wireless Vibration Monitoring for Condition Based Maintenance Cooling Towers .....	2008
	<i>Gerry Nadley, MachineTalker, Inc.</i>	
TP07-14 .....	Smart Vibration Switches .....	2007
	<i>George Zusman, Ph.D., PCB Piezotronics</i>	
TP06-23 .....	Roulette and Mechanical Vibration Switches: What Are Your Odds?.....	2006
	<i>Gene Ort</i>	
TP04-04 .....	New Fan Blade Tip Design Reduces Structural Vibrations - Verification in Practice .....	2004
	<i>Sander C. Venema, Howden Cooling Fans; Chris B. Lazenby, Southern Company Services</i>	
TP03-12 .....	Cost Effective Cooling Tower Fan Vibration Monitoring.....	2003
	<i>Talmadge D. Ward Jr., and Mickey Talley, USEC Paducah Kentucky</i>	
TP03-05 .....	Vibration Control: New Fan Blade Tip Reduces Pulsation .....	2003
	<i>Henk van der Spek, Howden Cooling Fans</i>	

**FILLS**

TP09-14 .....	Flame Retardance of Polymer Film Fills .....	2009
	<i>Dr. Nina Woicke, GEA 2H Kunststoff GmbH</i>	
TP09-10 .....	A Novel Approach to Design Compact Mass Transfer Packing for Maximum Efficiency .....	2009
	<i>Dr. Hamid Reza Goshayshi, Azad University</i>	
TP07-02 .....	Design and Operation of a Counterflow Fill and Nozzle Test Cell: Challenges and Solutions.....	2007

*Jean-Pierre Libert, EvapTech, Inc.*

TP06-21 .....	A Performance Comparison of Counterflow Reduced Fouling Fills.....	2006
	<i>Toby L. Daley, P.E., T Daley &amp; Associates, Inc.</i>	
TP06-20 .....	High Performance Ceramic Fill.....	2006
	<i>Peter Fay, Consultant; Ann Engh, Sandkuhl Clay Works, Inc.</i>	
TP06-19 .....	Guidelines for Selecting The Proper Film Fill.....	2006
	<i>Donald Zelek, Brentwood Industries, Inc.</i>	
TP01-03 .....	Recycling Contaminated and Fouled PVC Fill.....	2001
	<i>Michel Monjoie and Serge Bigier, Hamon Thermal Europe</i>	
TP01-02 .....	Low Clog Film Fill - New Approaches .....	2001
	<i>Kenneth P. Mortensen, The Marley Cooling Tower Company; Stephen N. Conley, The Marley Cooling Tower Company, Development Center</i>	
TP00-01 .....	Design Features and Their Affect on High Performance Fill .....	2000
	<i>Rich Aull and Tim Krell, Brentwood Industries, Inc.</i>	
TP99-05 .....	A Comparison of Crossflow Cooling Tower Splash-Type Fills.....	1999
	<i>Robert D. Fulkerson, Fulkerson Enterprises, Inc.</i>	
TP98-04 .....	Fill Fouling Control in Cooling Towers .....	1998
	<i>F. Philip Yu, Anthony W. Dallmier and William F. McCoy, Nalco Chemical Company</i>	
TP95-13 .....	NPF Cooling Tower Fill - Its Development and Demonstration .....	1995
	<i>E. Hobson, and T.H. Massey, National Power Plc; Paul Lindahl, The Marley Cooling Tower Company</i>	
TP95-07 .....	Innovative Application of Film Fill in Large Industrial Crossflow Cooling Towers .....	1995
	<i>David Suptic, The Marley Cooling Tower Company</i>	
TP93-08 .....	Influence of Fill Type and Flow Orientation on the Lewis Number.....	1993
	<i>Dudley J. Benton, TVA Engineering Laboratory</i>	
TP93-06 .....	Research of Fouling Film Fill.....	1993
	<i>Michel Monjoie, Hamon-Sobelco, S.A., Russell Noble, Southern Company Services; Gary R. Mirsky, Hamon Cooling Tower</i>	
TP92-09 .....	Cleaning and Maintenance of Film Fill at Florida Power Corporation .....	1992
	<i>David Pearson and Jim Witherow, Florida Power Corporation; Barbara McClung, Calgon Corporation</i>	
TP92-06 .....	Cooling Tower Film Fill Water Quality/Operations Guidelines For Successful Utilization .....	1992
	<i>James G. Kanuth and Paul R. Puckorius, Puckorius &amp; Associates, Inc.</i>	
TP91-03 .....	Evaluation of Plastic Fill For High Temperature Service.....	1991
	<i>Steven C. Blue, Paducah Gaseous Diffusion Plant; Martin Marietta, Energy Systems, Inc.</i>	
TP90-11 .....	Film Fill Recent Research and Application Data .....	1990
	<i>Gary R. Mirsky, Hamon Cooling Towers and Michel Monjoie, Hamon-Sobelco, S.A.</i>	
TP90-07 .....	Determination of the Turbulent Lewis Number From Experimental Data for Wet Cooling Tower Fill 1990 .....	
	<i>Dudley J. Benton, Tennessee Valley Authority</i>	
TP88-09 .....	The Usage of Fiber Cement as a Film Type Fill Media in Evaporative Cooling Towers.....	1988
	<i>John W. Cooper, Jr., Heinz Treuberg and Dr. Heiko Klauss, Toschi USA, Inc.</i>	
TP88-05 .....	Comparative Efaluation of Counterflow Cooling Tower Fills .....	1988
	<i>Robert D. Fulkerson, Cooling Tower Technology</i>	

## **FIRE PROTECTION**

TP10-21 .....	Fire Resistant Wall Systems for Water Cooling Tower Systems.....	2010
	<i>Mike Bickerstaff, Composite Cooling Solutions, L.P.</i>	

## **FOULING**

TP07-17 .....	Anionic Compatible Quat? .....	2007
	<i>Philip Sweeney and Doug Murray, Lonza, Inc.</i>	
TP02-06 .....	Designed To Fail (Heat Exchanger Designs That Lead To Failure) .....	2002
	<i>T.J. Tvedt, Puckorius &amp; Associates, Inc</i>	
TP02-04 .....	Anatomy of Enhanced Heat Exchanger Tubing .....	2002
	<i>Thomas M. Laronge, Thomas M. Laronge, Inc; Mark A. Lisin, Lisin Metallurgical Services</i>	
TP01-15 .....	High Efficiency 0.5 Micron Sand Filtration .....	2001
	<i>Bryan Hayward, Chemworks Filtration Inc.</i>	

TP01-08 .....	An Innovative Biodetergent for Fouling Control.....	2001
	<i>F. Philip Yu, Nalco Chemical Company; Yu-May Lu, Taiwan Nalco Chemical Company, Ltd.</i>	
TP98-14 .....	Film Fill Fouling in Counterflow Cooling Towers: Experimental & Field .....	1998
	<i>Kenneth P. Mortensen, P.E. and Stephen N. Conley, The Marley Cooling Tower Company</i>	
TP96-09 .....	Optical Monitor for Improved Fouling Control in Cooling Systems.....	1996
	<i>R.L. Wetegrove, R.H. Banks and M.R. Hermiller, Nalco Chemical Company</i>	
TP94-14 .....	Fouling of Film Forming Cooling Tower Fills - A Mechanistic Approach.....	1994
	<i>J.S. Gill, M.A. Yorke, R.M. Donlan and D.L. Gibbon, Calgon Corporation</i>	
TP94-05 .....	Film Fill Fouling in Counterflow Cooling Towers: Mechanism and Design .....	1994
	<i>Kenneth P. Mortensen and Stephen N. Conley, The Marley Cooling Tower Company</i>	
TP88-15 .....	New Application Technology For Controlling Algal Fouling in Recirculating Cooling .....	1988
	Water Systems <i>A.L. Smith, R.A. Muia &amp; M.O. Clancy, Calgon Corporation</i>	

## HISTORY OF COOLING TOWERS

TP91-01 .....	Evolution of the Water Cooling Tower .....	1991
	<i>James L. Willa, Willa, Inc.</i>	
TP71-04 .....	The Cooling Tower Institute Origin - Evolution - Future (TP-35A) .....	1971
	<i>C.D. Carlson, The Dow Chemical Company</i>	

## HVAC APPLICATIONS

TP05-01 .....	Optimization of Water Cooled Chiller-Cooling Tower Combinations.....	2005
	<i>James W. Furlong and Frank T. Morrison, Baltimore Aircoil Company</i>	
TP09-13 .....	The Determination of the Effectiveness of the Coolpuck in the Mitigation of Biofilms in.....	2009
	HVAC-Utilities <i>Shawn H. Gliner and Jan De Rijk, Aquafinesse Industrial Water</i>	

## IRON ROT ATTACK

TP95-14 .....	Iron Rot - The "New" Nemesis,.....	1995
	<i>James L. Willa, Willa, Inc.</i>	

## LEGIONELLA

TP09-25 .....	A Systematic Review of Biocides Used in Cooling Towers for the Prevention and Control of.....	2009
	Legionella spp. Contamination, <i>Kelly Rangel, University of Texas</i>	
TP09-15 .....	Cooling Towers, Drift and Legionellosis, <i>Tom Bugler and Barry Fields, Evapco, Inc.</i> .....	2009

## LEGIONNAIRES' DISEASE

TP09-05 .....	Chemical Free Bacteria & Legionella Control: A Case Study Using Hydrodynamic Cavitation.....	2009
	<i>Phil Vella, Ph.D., VRTX Technologies</i>	
TP08-11 .....	A New Method to Measure Viable Legionella and Total Heterotrophic Aerobic Bacteria.....	2008
	<i>William F. McCoy, Phigenics LLC</i>	
TP03-09 .....	One Company's Legionella Standard.....	2003
	<i>J.W. Smith, Shell Global Solutions; Jerry Ransdell and Jim McLean, Shell Chemical Company</i>	
TP02-13 .....	The Control of Bacteria On Surfaces: Effectiveness of Bromine-Based Biocides Towards Microbial..	2002
	Biofilms and Biofilm-Associated Legionella Pneumophila <i>C.J. Nalepa, J.N. Howarth and E.W. Liimatta, Albemarle Corporation; H. Ceri and C.A. Stremick, The Biofilm Research Group, University of Calgary; J.E. Stout and Y. E. Lin, VA Medical Center, Pittsburgh, PA</i>	
TP87-18 .....	Microbicidal Efficacy of BNPD Against Legionella Pheumophila.....	1987
	<i>Michael Coghlin and Gary Caplan, Bird Archer, Inc.</i>	
TP82-03 .....	Concentration, Serotypic, Profiles and Infectivity of Legionnaires' Disease Bacteria Populations.....	1982
	in Cooling Towers (TP-249A) <i>R.L. Tyndall, Zoology Dept., University of Tennessee</i>	

## LIGHTNING PROTECTION

TP05-09 .....	Lightning Protection for Cooling Towers.....	2005
	<i>James F. Blake, Jr., American Lightning Protection Systems, Inc.;</i>	
	<i>Bill Howard, American Cooling Tower, Inc.</i>	

## MATERIALS

TP11-19 .....	AEP's Experience With Polyester FRP Structure Cooling Towers.....	2011
	<i>Bob Cashner, American Electric Power</i>	
TP10-24 .....	An Investigation of Pin Bearing Strength on Composite Materials.....	2010
	<i>Dustin L. Troutman and Jeremy D. Mostoller, Creative Pultrusions, Inc.</i>	
TP10-07 .....	New Cooling Tower Nozzle Features and Performance.....	2010
	<i>Andreas Streng, Ph.D., CTS Cooling Tower Solutions GmbH</i>	
TP10-04 .....	Simultaneous Removal of Waterborne Bacteria and Total Suspended Solids Using an Antimicrobial .	2010
	Media in a Crossflow Filter System	
	<i>James W. Stephens, Sonitec, Inc.; Mark B. Miller, A.S. Filtration, LLC</i>	
TP05-03 .....	The Impact of Veil Thickness and Coating Tower FRP Composites .....	2005
	<i>Clint Smith, Strongwell</i>	
TP03-18 .....	Internal Pipe Seals for Repair of Cooling Water Piping.....	2003
	<i>John A. Charest, Universal Utility Services</i>	
TP01-14 .....	Safe Erection Procedure for Fiberglass Cooling Towers.....	2001
	<i>Jacob Moneta and Brian O'Leary, Hamon Cooling Towers</i>	
TP99-02 .....	Diagonal Bracing Connections in Fiberglass Cooling Tower .....	1999
	<i>Jamie Bland, Ceramic Cooling Tower Company</i>	
TP98-07 .....	Implementing Regulations Under The Fastener Quality Act (FQA) .....	1998
	<i>Rodrick Williams, All-Pro Fastener, Inc.</i>	
TP96-11 .....	Strength-Degradation Based Life Expectancy of Wood Cooling Towers .....	1996
	<i>Jozsef Bodig and Arun K. Pandey, Engineering Data Management, Inc.;</i>	
	<i>Jeff Hofacre, American Electric Power Serv. Corp; Mark Holmberg, Northern States Power Company;</i>	
	<i>Robert Martirosian, Potomac Electric Power Company</i>	
TP94-02 .....	Development of FRP Structural Frame For Industrial Cooling Tower.....	1994
	<i>Kanji Kato and Kesaaki Mochizuki, Ishikawajima Plant Engineering &amp; Construction Co., LTD.</i>	
	<i>Akira Hamamoto, Ishikawajima-Harima Heavy Ind. Co., LTD.;</i>	
	<i>Hideto Yabumoto, Nippon Shokubai Co., LTD.</i>	
TP87-03 .....	Design Consideration For the Installation of RTRP Piping for Cooling Tower Hot Water .....	1987
	Distribution Systems	
	<i>Michael F. Luckenbill, Fibercast Company</i>	
TP86-05 .....	The Selection and Testing of Plastics Tower Fill .....	1986
	<i>Steven C. Blue, Martin Marietta Energy Systems, Inc.</i>	

## MECHANICAL DRAFT TOWERS

TP09-08 .....	Cooling Tower Basin Evaluation and Repair, .....	2009
	<i>Tom Kline, Structural Preservation Systems</i>	
TP03-17 .....	Feasibility of Seawater Cooling Towers for Large-Scale Petrochemical Development.....	2003
	<i>Dr. Shahriar Eftekhazadeh and Dr. Muin M. Baasiri, Bechtel Corp;</i>	
	<i>Paul A. Lindahl, Marley Cooling Technologies</i>	
TP95-02 .....	Partial Collapse and Rebuild of the Conesville Unit 4 Mechanical Draft Cooling Tower .....	1995
	<i>Frank L. Michell and Walt Demjanenko, American Electric Power Service Corporation</i>	

## MISCELLANEOUS

TP11-20 .....	Traveling Water Screen Options – Innovations in the Industry.....	2011
	<i>Kristen Bridge, Superior Water Screen Company</i>	
TP11-09 .....	Seismic Qualification – Fact and Fiction.....	2011
	<i>Robert Simmons, Petra Seismic Design</i>	
TP10-03 .....	The Importance of an ISO 9001 Component Supplier for Cooling Tower Companies.....	2010
	<i>Clint Smith, Strongwell</i>	
TP00-02 .....	Experiment Investigation of an Evaporative Cooling Tower .....	2000

TP96-16 .....	Helper Cooling Towers at the Bang Pakong Power Station .....	1996
	<i>David J. Brill, David Copeland and Thomas E. Kalin, Black &amp; Veatch; Worawit Khamkanist, Electricity Generating Authority of Thailand</i>	
TP90-05 .....	Estimating Operational Service Time of Heat Exchangers.....	1990
	<i>J. Fred Wilkes, Consultant; Flavio Bianchi and Mauro C. Ramirez, Aquatec Quimica, S.A.</i>	

### **NATURAL DRAFT TOWERS**

TP11-15 .....	Breakthrough Cooling Tower Shell for FGD Discharge Piping.....	2011
	<i>Vladislav Grebik, REKO PRAH, A.s.</i>	
TP09-23 .....	Structural Modeling and Analysis of Natural-Draft Cooling Towers.....	2009
	<i>Leandro Etcheverry and Prasad Samarajiva, Walter P. Moore Associates</i>	
TP98-10	On-Line Performance Monitoring of the Natural Draft Cooling Tower at Cardinal Plant.....	1998
	<i>Frank L. Michell, Mathew J. Miller, American Electric Power</i>	
TP98-03 .....	Upgrading and Repacking Two 460 MW Natural Draft Cooling Towers .....	1998
	<i>Peter Bosman, Knight Piesold Energy LLC; Dave Stables, Knight Piesold (Pty) Ltd</i>	
TP96-08 .....	Oriented Spray-Assisted Cooling Tower .....	1996
	<i>Charles F. Bowman, Chuck Bowman Assc., Inc.; Dudley J. Benton, Ph.D., Environmental Consulting Engineers, Inc.</i>	

### **NON-OXIDIZING BIOCIDES**

TP11-16 .....	New Biocide Options for Biofouling Control.....	2011
	<i>Jeffrey Kramer, BWA Water Additives</i>	
TP95-03 .....	The Devil You Know Versus The Devil You Don't - An Evaluation of Chlorine Versus a.....	1995
	Non-Oxidizing Biocide for Zebra Mussel Control <i>Patrick H. Gill and Alan L. Smith, Calgon Corporation</i>	
TP92-13 .....	Biocide Efficacy vs. Acid Producing and Iron Oxidizing Bacteria .....	1992
	<i>Lawrence A. Grab, Union Carbide Chemical and Plastics; Leonard A. Rossmore, Biosan Laboratories, Inc.</i>	
TP90-14 .....	A New Bromine Oxidizing/Nonoxidizing Antimicrobial Combination Product for Industrial Water ...	1990
	Treatment <i>C.R. Ascolese, Betz Industrial</i>	
TP90-06 .....	Tris (Hydroxymethyl) Nitromethane: An Evaluation of a Versatile Cooling Water Treatment.....	1990
	Microbiocide <i>Kenneth Soeder, Jamestown Chemical Company; Dr. Frederick J. Passman, Angus Chemical Co.</i>	

### **OXIDIZING BIOCIDES**

TP00-09 .....	First Field Trials of Single-Feed, Liquid Bromine Biocide for Cooling Towers.....	2000
	<i>Jon Howarth and Chris Nalepa, Albemarle Corporation</i>	
TP89-14 .....	The Use of Chlorine Dioxide to Control Microbiological Growth in an Ethylene Glycol .....	1989
	Contaminated Cooling Tower...A Case History <i>Raj Dhillon and Charles Edward, Hoechst Celanese</i>	

### **OZONE**

TP05-20 .....	Reducing Cooling Tower Costs With Ozone Technology.....	2005
	<i>Andrew Conner, Cleanwater Ozone Systems, Inc</i>	
TP95-12 .....	Guidelines and Examples of Ozone in Cooling Tower Applications .....	1995
	<i>Lee C. Ditzler, TriOx</i>	
TP94-07 .....	Design Consideration for Ozone Water Treatment Systems in Cooling Towers.....	1994
	<i>Carl Nebel, PCI Ozone &amp; Control Systems, Inc.</i>	
TP92-07 .....	Biocidal Aspects of Ozone for Cooling Water Treatment - Probable Impacts of Bromide Ion.....	1992
	<i>Rip G. Rice, Ph.D., Rice Int'l Consulting Enterprises; J. Fred Wilkes, Consultant</i>	

### **PLUME ABATEMENT**

TP11-25 .....	Cooling Tower Plume.....	2011
---------------	--------------------------	------

## PSYCHROMETRICS

TP81-13 .....	Psychrometrics and the Psychrometer (TP-231A).....	1981
	<i>Ivan F. Kuharic, The Marley Cooling Tower Company</i>	

## REPAIR AND CONSTRUCTION

TP11-27 .....	Hyperbolic Repack on the Run.....	2011
	<i>James Cuchesn and Chris Lazenby, Southern Company Services, Inc and James L. Baker, Composite Cooling Solutions, LLP</i>	
TP11-17 .....	Natural Draft Hyperbolic Cooling Towers Concrete Rehabilitation & Cathodic Protection.....	2011
	<i>Nick Nowell and Bill Blennerhassett, Structural Preservation Systems</i>	
TP11-05 .....	Structural Integrity of Hyperbolic Cooling Towers in Seismic Zones During Concrete Veil Repair.....	2011
	<i>Narendra Gosain and Farouk Mahama, Walter P Moore And Associates, Inc.</i>	
TP10-26 .....	Cooling Tower Basin Leakage Assessment & Mitigation.....	2010
	<i>Thomas R. Kline, Structural Group, Inc.</i>	
TP10-23 .....	Structural Condition Assessment of Cooling Towers.....	2010
	<i>Kevin Michols and Leandro Etcheverry, Wiss, Janney, Elstner Associates, Inc.</i>	
TP10-11 .....	A New Control Scheme Provides the Most Cooling for Your Money .....	2010
	<i>Robbie McElveen, Baldor Electric Company; Michael Daley, Hudson Products Corporation</i>	
TP10-02 .....	Silica Scale Inhibition – A Kinetic Study.....	2010
	<i>Heinz Plaumann, Keith Hirsch and Joseph Lipari, BASF Corporation</i>	
TP09-02 .....	Common Industrial Cooling Tower Errors and Omissions .....	2009
	<i>James L. Willa, Willa, Inc.</i>	
TP08-22 .....	Construction Productivity Guidelines for Field Erected Cooling Towers .....	2008
	<i>James Baker, Composite Cooling Solutions, LP</i>	
TP07-24 .....	Living in a Material World.....	2007
	<i>Frank Morrison, Baltimore Aircoil Company</i>	
TP07-18 .....	Rehabilitation of Hyperbolic Cooling Towers at Electric Generating Station.....	2007
	<i>Kevin A. Michols, CTLGroup</i>	
TP07-16 .....	Etiwanda Cooling Towers, Repair or Replace.....	2007
	<i>Robert Fulkerson, Fulkerson &amp; Associates, Inc.</i>	
TP06-22 .....	Wind Load Rated Packaged Cooling Towers .....	2006
	<i>Daniel S. Kelly, Evapco, Inc</i>	
TP06-17 .....	Westar Energy Cooling Tower Rebuilds .....	2006
	<i>David Spacek, Westar Energy, Inc.</i>	
TP06-03 .....	Large Scale Mechanical Equipment Simple Steps for Success .....	2006
	<i>David M. Suptic, David M. Suptic, P.E. LLC</i>	
TP05-11 .....	Complete Structural Rebuild of Two Six Cell Crossflow Cooling Towers Using All FRP Members ...	2005
	<i>Deano Sarantakos, Kentucky Utilities</i>	
TP04-08 .....	Update on the Impact of Water Immersion for Pultruded FRP .....	2004
	<i>Clinton B. Smith, Strongwell</i>	
TP03-13	Correcting Sedimentation Problems at American Electric Power's Conesville Plant River Intake .....	2003
	<i>Frank Michell, Pedro Amaya, and C. Dannemiller, American Electric Power; Dr. Robert Ettema and M. Muste, University of Iowa</i>	
TP03-07 .....	Crossflow to Counterflow Natural Draft Tower Conversion.....	2003
	<i>Dr. John Arntson, Jamie Bland and Mike Bickerstaff, Ceramic Cooling Tower Corporation; Merwin Jones, Mirant Mid-Atlantic LLC</i>	
TP02-11 .....	Collapse of Tuttle #2 Cooling Tower and Resulting Replacement Repair Program .....	2002
	<i>Stephen Tips, City Public Service</i>	
TP02-10 .....	Avoiding Cooling Tower Catastrophe.....	2002
	<i>James L. Willa, Willa, Inc.</i>	
TP02-08 .....	Suitability of Preservative-Treated Radiata Pine for Cooling Tower Construction.....	2002
	<i>R.N. Wakeling, D.R. Page, M.J. Collins and Ronnie Heasman, Cooling Tower Fabrications</i>	

TP02-05 .....	Concrete Basics, Materials, Selection in Design and Repair .....	2002
	<i>Thomas G. Toth, Psychrometric Systems, Inc.</i>	
TP00-16 .....	Safe Construction of Field Erected Cooling Towers .....	2000
	<i>Mike Bickerstaff, Ceramic Cooling Tower Corporation</i>	
TP00-15 .....	Collapse of the Conesville 4B Seven Cell Mechanical Draft Cooling Tower .....	2000
	<i>Frank L. Michell, Walt Demjanenko and Joe Tseng, American Electric Power</i>	
TP99-10 .....	The Retrofit of a Big Cooling Tower at an Oil Refinery in Vienna in Combination with a Significant Noise Reduction, <i>Henk van der Spek, Ventilatoren Sirocco Howden</i> .....	1999
TP99-08 .....	Improved Ower Plant Performance With Evaporative Steam Condensing .....	1999
	<i>Dave Hutton, Baltimore Aircoil Company</i>	
TP99-04 .....	Evaluation of Design Loads for FRP Composite Columns .....	1999
	<i>Dr. Robert L. Yuan, University of Texas</i>	
TP98-11 .....	Advances in Oil Mist Lubrication for Cooling Towers .....	1998
	<i>Fred Paben, Lubrication Systems Company</i>	
TP97-13 .....	PGDP Enhances Plant RCW Reliability.....	1997
	<i>Michael Talley, Teresa Gross and John Elrod, Lockheed Martin Utility Services</i>	
TP97-01 .....	Design Considerations for a Fiberglass, Field Erected, Closed-Circuit Cooling Tower.....	1997
	<i>Christopher W. Carlson, P.E., Baltimore Aircoil Company</i>	
TP96-13 .....	Cross to Counter Flow Repack on Induced Draft Operating Cooling Tower.....	1996
	<i>Michel Monjoie, Hamon Thermal Engineers &amp; Contractors; Gary Mirsky, Hamon Cooling Towers</i>	
TP92-05 .....	Design Methodology and Recommended Maintenance for FRP Composite Structured Cooling Towers .....	1992
	<i>Jess Seawell and Toby Daley, Ceramic Cooling Tower Company</i>	
TP91-15 .....	Refurbishing America's First Hyperbolic Cooling Tower .....	1991
	<i>Brian W. Deuwall, The Marley Cooling Tower Company; Frank L. Michel and Dan H. Drew, American Electric Power Service Corp.</i>	
TP91-06 .....	On-Line Rebuild of Cooling Tower Serving a 500 MW Power Station.....	1991
	<i>Roger R. Burger, Grand River Dam Authority; H. Peter Fay, GEA Power Cooling Systems, Inc.</i>	
TP90-04 .....	Removal of Asbestos Paper Fill From Large Industrial Cooling Towers.....	1990
	<i>E.D. Mittendorf, Cascade Dept. Operations Division</i>	
TP89-09 .....	Modification of the Induce Draft Cooling Tower at Cross Generating Station - Cross, South Carolina .....	1989
	<i>R.W. Lemay and Vino Verma, Santee Cooper</i>	
TP89-03 .....	Crossflow to Counterflow Cooling Tower Conversion .....	1989
	<i>Allen E. Feltzin, Airco Industrial Gases</i>	

### **SIDESTREAM SOFTENING**

TP09-17 .....	Filtration Solutions for Cooling Tower Systems .....	2009
	<i>Randy Serwan, Rain for Rent</i>	
TP06-04 .....	Filtration For Multi-Story Office Buildings HVAC .....	2006
	<i>Dr. Marcus N. Allhands, Amid Filtration Systems; Victoria Allies, TNT Technology Company</i>	
TP05-14 .....	It's Time to Rethink Cooling Tower Filtration .....	2005
	<i>Dr. Marcus N. Allhands, Amid Filtration Systems</i>	
TP04-02 .....	Cooling Tower Side Stream Filtration 101 .....	2004
	<i>Clarence Melancon, Water Filtration Technologies, Inc.</i>	

### **SOUND**

TP11-03 .....	The Cost of Noise II .....	2011
	<i>Robert Giammaruti, Hudson Products Corporation</i>	
TP07-12 .....	Sound Measurement from Field Erected Cooling Towers.....	2007
	<i>Kenneth Hennon and David Wheeler, CleanAir Engineering, Inc.</i>	
TP05-08 .....	Application of Low Noise Technology for Evaporative Equipment .....	2005
	<i>Trevor Hegg, Evapco, Inc.; Paul Nelissen, Howden Cooling Fans</i>	
TP95-01 .....	Cooling Tower Noise.....	1995
	<i>Gary R. Mirsky, Hamon Cooling Towers</i>	
TP93-03 .....	Reduction of Noise Generation by Cooling Fans .....	1993
	<i>Ir. Henk F. van der Spek, Ventilatoren Sirocco Howden B.V.</i>	

## CTI STANDARDS / SPECIFICATIONS

TP09-22	Florida Building Code Structural Requirements for Evaporative Cooling Equipment.....	2009
	<i>Greg Henschel and Mark Speckin, SPX Cooling Technologies, Inc.</i>	
TP09-04	Inspection of Pultruded Cooling Tower Components.....	2009
	<i>Dustin Troutman, Creative Pultrusions, Inc.; Jess Seawell, Composite Cooling Systems, LP</i>	
TP88-04	How To Make CTI Standards Work For You .....	1988
	<i>James L. Willa, Willa, Inc.</i>	

## TESTING

TP09-20	Affecting Test Uncertainty .....	2009
	<i>Benjamin Goddard and Eugene Culver, McHale &amp; Associates</i>	
TP09-12	A Reynolds Number Correction for Pitot Measurements.....	2009
	<i>Dudley Benton, McHale &amp; Associates</i>	
TP08-20	Seismic Qualification of Cooling Towers by Shake-Table Testing.....	2008
	<i>Panos G. Papavizas, Baltimore Aircoil Company</i>	
TP04-14	Selected Diagnostics to complement a Cooling Tower Performance Test or Status Test .....	2004
	<i>Charles W.H. Foster, Diagnostic Cooling Solutions Inc.</i>	
TP00-07	Demonstrating the Effectiveness of Field Testing Evaporative Vapor Condensers .....	2000
	<i>Glenn D. Comisac, Baltimore Aircoil Company</i>	

## THERMAL PERFORMANCE

TP11-21	Improving the Thermal Performance of Cooling Towers by Conditioning of Air .....	2011
	<i>Magose Abraham Eju, Nigeria Liquefied Natural Gas Limited</i>	
TP11-13	Maisotendo-Cycle Enhanced Cooling Towers.....	2011
	<i>Lee Gillan, Idalex; Paul Glanvill and Dr. Aleksandr Kozlov, Gas Technology Institute</i>	
TP09-06	A Continuous Monitoring System for Predictive Maintenance and Global Service On-Line .....	2009
	<i>Andrea Toffanin and Riccardo Provasi, SPIG International</i>	
TP08-12	Architectural Enclosure Influences on the Performance of Field Erected Cooling Towers .....	2008
	<i>Toby Daley, Composite Cooling Solutions, L.P.</i>	
TP08-04	Crossflow Cooling Tower Performance Calculations .....	2008
	<i>Robert Fulkerson, Fulkerson &amp; Associates</i>	
TP07-10	Seismic Rated Factory Assembled Evaporative Cooling Equipment .....	2007
	<i>Scott Nevins, Evapco, Inc.</i>	
TP06-15	Guidelines for Successful cooling Tower Installations for Campus District Energy Systems .....	2006
	<i>Frank T. Morrison, Baltimore Aircoil Company</i>	
TP06-05	Responding to a Cooling Tower Emergency .....	2006
	<i>Billy Childers, Aggreko LLC</i>	
TP06-01	Cooling Towers Work as a System .....	2006
	<i>Richard DesJardins, DesJardins Consulting</i>	
TP05-23	Hybrid Closed-Circuit Cooling Tower Solves a Water Availability Problem.....	2005
	<i>David Hutton, Baltimore Aircoil Company</i>	
TP05-10	Dynamic Load Considerations in Cooling Tower Water Distribution Piping .....	2005
	<i>David M. Suptic, David M. Suptic P.E. LLC</i>	
TP05-02	Online Refurbishment of Four Large Natural Draft Cooling Towers.....	2005
	<i>Alex Dreyer, GEA Aircooled Systems</i>	
TP04-11	Thorough Inspections Reduce Cooling Tower Mechanical and Performance Risk .....	2004
	<i>Terry McCoy, ChemTreat, Inc.; Robert Strandberg, Covanta, Inc.</i>	
TP04-03	Supplemental Cooling .....	2004
	<i>Billy Childers, Aggreko Cooling Tower Services</i>	
TP03-06	Innate Recirculation of Cooling Towers.....	2003
	<i>Hector L. Cruz, Bechtel Power Corporation</i>	
TP02-19	Network Analysis Helps Increase Cooling System Capacity .....	2002
	<i>Sushil Aggarwal, Fluor Daniel Inc.</i>	

TP02-14 .....	Vibration Control For Cooling Towers .....	2002
	<i>Robert Simmons, Amber/Booth Company</i>	
TP02-09 .....	A Temporary Cooling Tower CAN Work For You.....	2002
	<i>Billy Childers, Aggreko, Inc</i>	
TP02-03 .....	Wireless Condition Monitoring of Industrial Cooling Towers .....	2002
	<i>Lloyd D. Lee, MAARS, Inc.</i>	
TP01-04 .....	Cooling Towers, Evaporative Condensers, and ASHRAE Guideline 12-2000 .....	2001
	<i>David F. Geary, Baltimore Aircoil Company</i>	
TP97-09 .....	On-Line Performance Monitoring of the 1300 MW Natural Draft Cooling Towers on American .....	1997
	Electric Power's General James M. Gavin Plant <i>Frank L. Michell and Dan H. Drew, American Electric Power</i>	
TP96-15 .....	Enhancing Tower Performance Using Non-Uniform Water Distribution .....	1996
	<i>Adriaan J. de Villiers, Peter B. Bosman, Knight Piesold Energy</i>	
TP95-17 .....	Computerized Simulation of Closed Circuit Cooling Tower With Parallel and Counterflow Spray.....	1995
	Water-Air Flow Design <i>Branislav Korenic, Ph.D., Baltimore Aircoil Company</i>	
TP95-10 .....	Tower Demolition Safety Techniques For The 90's .....	1995
	<i>Michael F. Talley and John Elrod, Martin Marietta Utility Services, Inc.</i>	
TP92-01 .....	Using The EPRI Test Data to Verify a More Accurate Method of Predicting Cooling Tower .....	1992
	Performance <i>Richard J. DesJardins, DesJardins and Associates</i>	
TP91-07 .....	Development of Cooling Tower Performance Impacts on Utility and Process Plants .....	1991
	<i>Ken Quigley, Ecodyne Cooling Tower Services; Karl Wilber, Research Cottrell Companies</i>	
TP91-02 .....	A More Nearly Exact Representation of Cooling Tower Theory .....	1991
	<i>Allen E. Feltzin, Airco Industrial Gases/The BOC Group; Dudley Benton, Tennessee Valley Authority</i>	

## TOWER TESTING

TP08-10 .....	A Simplified Method to Evaluate Cooling Tower and Condenser Performance Using the.....	2008
	CTI ToolKit <i>Luc DeBacker and Natasha Peterson, Bechtel</i>	
TP03-02 .....	Flow Measurement and All That Jazz .....	2003
	<i>Mark S. Huber and Robert Miller, Baltimore Aircoil Company</i>	
TP02-01 .....	Analysis of Thermal Performance Test Data of Large Cooling Towers Using CTI ToolKit Software..	2002
	<i>Frank Michell, American Electric Power; Rich Aull, Brentwood Industries, Inc.</i>	
TP01-13 .....	Circulating Water Flow Measurements - A Study.....	2001
	<i>Eugene D. Culver, Ceramic Cooling Tower Corporation</i>	
TP00-06 .....	A New Look at Recirculation Analysis Including Measure of a 50 Cell Cooling Tower.....	2000
	<i>Michel Monjoie and Franz Bouton, Hamon Thermal Europe</i>	
TP97-05 .....	Accuracy and Linearity of Diamond Shaped Averaging Pitot Tubes.....	1997
	<i>Susan Mahoney, Dieterich Standard</i>	
TP97-04 .....	Characterization of Drift Rates and Drift Droplet Distribution for Mechanical Draft Cooling Towers .	1997
	<i>Jack R. Missimer and David Wheeler, Power Generation Technologies</i>	
TP94-15 .....	Testing Procedures for Wet/Dry Plume Abatement Cooling Towers.....	1994
	<i>Michel Monjoie and Jean-Pierre Libert, Hamon Sobelco</i>	
TP92-15 .....	Calibration Characteristics of a Simplex Pitot-Static Probe and Five Alternative Velocity Probes .....	1992
	<i>R.N. Partghasarathy, Robert Ettema and V.C. Patel, Iowa Institute of Hydraulic Research</i>	
TP92-11 .....	Dye Dilution Flow Rate Measurements for Cooling Towers .....	1992
	<i>Jack R. Missimer, Ph.D., P.E., Environmental Systems Corporation</i>	

## TREATMENT CONTROL

TP11-06 .....	Optimizing Treatment Cost Performance .....	2011
	<i>Robert J. Ferguson, French Creek Software</i>	
TP10-06 .....	Physical Water Treatment Utilized in Food Manufacturing and Distributio .....	2010
	<i>David McLachlan, Fluid Treatment Solutions, Inc.</i>	
TP07-05 .....	Material Balance Chemical Control and Information Systems for Cooling .....	2007

*Charles Kuhfeldt, Ashland Water Technologies*

TP05-15	..... Finally, An Alternative to Azoles.....	2005
	<i>Eric Ward, Alco Chemical</i>	
TP04-15	..... Development of an On-Site Hypobromite Generation .....	2004
	<i>Timothy Keister and Pat Gill, ProChemTech International</i>	
TP02-07	..... New All Organic Chemistry For Treatment of Closed Cooling Systems.....	2002
	<i>John Richardson and Michael G. Trulear, ChemTreat, Inc</i>	
TP02-02	..... Field Experience With A New, Novel Series of High Performance, Environmentally Friendly.....	2002
	<i>CWT Programs</i> <i>S.J. Colby, D.E. Emerich and M.C. Wangerin, Ashland Specialty Chemical Company</i>	
TP01-12	..... Water Treatment Can be Bid Successfully .....	2001
	<i>Thomas M. Laronge and Roland A. Leathrum, Thomas M. Laronge, Inc.</i>	
TP01-11	..... Removal of Copper During Start-Up of Cooling Tower .....	2001
	<i>Karen F. Pedraza and Dennis P. Shea, Solutia, Inc.</i>	
TP01-09	..... Extend the Life of Wetted Surfaces.....	2001
	<i>Mark A. Lisin, Lisin Metallurgical Services; Thomas M. Laronge, Thomas M. Laronge, Inc.</i>	
TP01-06	..... Mixed-Oxidant Use in Cooling Tower Maintenance.....	2001
	<i>Wesley L. Bradford, Los Alamos Technical Assoc., Inc.; Paul Petersen, Trident Technologies, Inc.</i>	
TP00-14	..... Recent Advances in High Alkaline Cooling Water Treatment.....	2000
	<i>John Richardson and Michael G. Trulear, ChemTreat, Inc.</i>	
TP00-04	..... Bugs and Bugaboos of Cooling System Components .....	2000
	<i>Thomas M. Laronge, Thomas M. Laronge, Inc.</i>	
TP97-15	..... The Advancing Evolution of Centrifugation .....	1997
	<i>William R. Leizear, Randall D. Delenikos, LAKOS Filtration Systems</i>	
TP97-11	..... A New Treatment for Calcium Carbonate Control in Alkaline Conditions.....	1997
	<i>Jasbir S. Gill, Jennifer R. Parson and Robert C. Gordon, Calgon Corporation</i>	
TP97-08	..... Twenty Minutes with Molybdate.....	1997
	<i>M.H.L. Garnaud, Climax Molybdenum UK, Ltd; Thomas J. Risdon, Climax Molybdenum Marketing Corporation</i>	
TP95-09	..... Highly Effective New Polymer For Calcium Phosphate Control in Cooling Water Systems .....	1995
	<i>Anne B. Austin and Michael L. Standish, Alco Chemical</i>	
TP95-04	..... Fractures in Cooling Water System Components.....	1995
	<i>Thomas M. Laronge &amp; Mark A. Lisin, Thomas M. Laronge, Inc.</i>	
TP93-11	..... Silica Stabilization in Industrial Cooling Towers: Recent Experiences and Advances .....	1993
	<i>Paul R. Young, Christine M. Stuart and Phillip M. Eastin, Nalco Chemical Company; Marshall McCormick, Chevron</i>	
TP93-10	..... A New On-Line Monitoring and Control Capability for Cooling Water Programs .....	1993
	<i>J. Richardson, K.D. Heinz and M.A. Reinsalu, Grace Dearborn, W.R. Grace</i>	
TP93-04	..... Fingerprints of Errors - Failures in Cooling Water Systems .....	1993
	<i>Arthur J. Freedman, Ph.D., Mark A. Lisin, P.E. and Thomas M. Laronge, Thomas M. Laronge, Inc.</i>	
TP93-02	..... Control of Microbiological Contaminants in Small Cooling Systems.....	1993
	<i>Daniel H. Pope, Ph.D., Bioindustrial Technologies, Inc.; William T. Osborne, Baltimore Aircoil Company</i>	
TP92-14	..... Evaluation of Alternatives to Gaseous Chlorine for Cooling Water .....	1992
	<i>Marcus Vaska &amp; Winston Go, Microbiological Control Drew Industrial Division</i>	
TP92-08	..... Automated Oxidant Control .....	1992
	<i>Phil Kiser, Stranco, Inc.</i>	
TP92-03	..... Practical Considerations in High Cycle Cooling Water Operations .....	1992
	<i>Arthur J. Freedman and Thomas M. Laronge, Thomas M. Laronge, Inc.; Chester M. Malewski and Craig W. Williams, Sierra Pacific Power Company</i>	
TP91-08	..... Precise Prediction of Cooling Water pH.....	1991
	<i>Craig W. Ballard and Jack V. Matson, Ph.D., P.E., University of Houston</i>	
TP91-04	..... Fail-Safe Cooling Water Operations.....	1991
	<i>Arthur J. Freedman and Thomas M. Laronge, Thomas M. Laronge, Inc.</i>	
TP90-13	..... Effects of Molybdate in Cooling Water Treatment Programs .....	1990
	<i>Kenneth P. Fivizzani and Sang-Hea Shim, Nalco Chemical Company</i>	

TP90-10 .....	Problems and Pitfalls in Water Treatment Specifications .....	1990
	<i>Arthur J. Freedman and Thomas M. Laronge, Thomas M. Laronge, Inc.</i>	
TP90-01 .....	Practical Applications of Tracers - Beyond Product Monitoring.....	1990
	<i>John E. Hoots, Nalco Chemical Company</i>	

### **TREATMENT EVALUATION**

TP11-14 .....	Practical Evaluation of Treatment Chemicals for Scale Inhibition in Open Evaporative.....	2011
	Sea Water Cooling <i>Roy A. Holliday and Gary E. Geiger, GE Water &amp; Process Technologies</i>	
TP11-10 .....	AWT's ASHRAE Liaison Report: NCDs and Biological Control in Cooling Water Systems .....	2011
	<i>Bill Pearson, Southeastern Laboratories, Inc.</i>	
TP07-15 .....	An Alternative Method for Delivering Cooling Water Treatment Chemicals Using Controlled .....	2007
	Release Technology <i>Dennis Kelly and Dan Dobrez, Dober Group</i>	
TP07-09 .....	Twenty-Years of Cooling Water Treatment Experience in Manhattan .....	2007
	<i>Marcus N. Allhands and Carmine Puglisi, Orival, Inc.</i>	
TP03-21 .....	Condenser Water Treatment Using Pulsed-Power .....	2003
	<i>John Lane, Clearwater Systems and David Peck, Eichleay Engineers &amp; Constructors</i>	
TP03-16 .....	Multipurpose Water Treatment In Cooling Towers.....	2003
	<i>Sukjun Kang and Jasper Lee, EEKO Bio Corporation; Jeyong Yoon and Min Cho, Seoul National University</i>	
TP03-15 .....	Practical Approach to Solving Cooling Water Treatment Problems Using Customized Chemical.....	2003
	Formulation <i>Daniel P. Curnock and Edward W. Cocetti, ChemCentric</i>	
TP96-07 .....	A Laboratory Method for Evaluating Biocidal Efficacy on Biofilms.....	1996
	<i>Michael Ludyanskiy, Steven J. Colby, Lonza, Inc.</i>	
TP88-12 .....	Pilot Cooling System Evaluation of Treatment Program Effectiveness in a Refinery Environment.....	1988
	<i>Beatrise A. Bross and Robert J. Ferguson, Chemlink, Inc.</i>	
TP88-03 .....	A Comprehensive Evaluation of Molybdate-Based Cooling Water Treatment Technology.....	1988
	<i>Joseph S. Roti and Kenneth F. Soeder, Drew Industrial Division</i>	
TP87-06 .....	Methods For Evaluating the Efficacy of Biocides Against Sessile Bacteria .....	1987
	<i>Carol A. Jones, Jane H. Leidlein and Jeff G. Grierson, Dow Chemical Company</i>	
TP86-07 .....	Microbiological Test Methods in Association With Cooling Towers .....	1986
	<i>Helen E. Crandall, Hercules, Inc.</i>	

### **USE OF BIOCIDES**

TP99-16 .....	Unique Biodispersant Removes Biofilms and Increases Biocides Efficacy .....	1999
	<i>Melvin H. Czechowski and Kurt W. Whitekettle, BetzDearborn Inc.</i>	
TP98-09 .....	A Comparison of Bromine-Based Biocides in a Medium-Size Cooling Tower .....	1998
	<i>Christopher J. Nalepa, Robert M. Moore, Albemarle Corporation</i>	
TP98-06 .....	A New Biocide for Control of Algal Biofouling in Cooling Towers .....	1998
	<i>K. Mark Wiencek, Terry M. Williams and Robert F. Semet, Rohm And Haas Company</i>	

### **UTILITY INDUSTRY**

TP11-18 .....	Assessment of Existing Galvanic Corrosion Protection Systems .....	2011
	<i>Javier Balma and Dilip Choudhuri, Walter P Moore and Associates, Inc.</i>	
TP00-11 .....	Circular Hybrid Cooling Towers .....	2000
	<i>Andreas Streng, Ph.D., Balcke-Duerr Energietechnik GmbH</i>	
TP00-10 .....	With "New-Age Brands" Into a "Brand-New Age".....	2000
	<i>Leo Vonk, Bis Both Industrial Services BV</i>	
TP90-03 .....	Operating Feedback of French Cooling Towers Civil Work and Equipment.....	1990
	<i>P. Coic, Electricite De France</i>	

## WATER MANAGEMENT

TP11-24	Potable Water Reduction Strategies <i>Jon J. Cohen and Henry A. Becker, H-O-H Water Technology</i>	2011
TP08-17	The Conversion From Gas to Tablet Chlorination: A Case Study <i>Austin Looper, PPG Industries; Billy Smith, ChemTreat, Inc.</i>	2008
TP07-13	Sewage Effluent for Cooling: A Forty-Year Experience in the Texas Panhandle <i>Bernie Wieck, Universal Utility Services</i>	2007
TP05-18	Low Cost Cooling Tower Biocide Alternative <i>David Evans and Nidhal Dossary, Saudi Aramco</i>	2005
TP03-20	Power Plant Restores Cooling System Performance With Bio-Detergent Cleanup <i>Charles W.H. Foster and Trevor Gent, ONDEO Nalco Canada Co.</i>	2003
TP03-14	San Antonio Water System's Cooling Tower Audit Program Results in Significant Water Savings <i>Eddie Wilcut, San Antonio Water System, John J. Sims and Tory Tvedt, Puckorius &amp; Associates, Inc.</i>	2003
TP03-04	Automating the Cooling Water Triangle <i>D.L. Stonecipher, S.R. Hatch, D.A. Meier, B.E. Moriarty and M. Chatteraj, ONDEO Nalco Co.</i>	2003
TP99-12	Cooling Tower Water Conservation Using Solubility Chemistry <i>Stephen E. Mitchell, S &amp; S Consulting Services</i>	1999
TP99-09	Get the Limits of Cooling Tower Design: Low Approach-Large Range-Cold Water 38°F <i>Michel Monjoie, Hamon Thermal; Rob Schwalm, Barrick Goldstrike</i>	1999
TP97-03	An Effective Method for Non-Chemical Control of Microbial Activity in Cooling Towers <i>John Dresty, Environmental Research Institute; James Fitzpatrick, Warner Lambert Corp.</i>	1997
TP90-02	Designing a Cooling Water Program With the Aid of a Three-Dimensional Cost Optimization Computer Method <i>Mei H. Hwang, Charles J. McCloskey and John A. Hvizdos, Calgon Corporation</i>	1990
TP86-09	Enhanced Water Management Using Bromine Chemistry <i>Rodney H. Sergent, Great Lakes Chemical Corporation</i>	1986
TP84-02	The Importance of Water Management in Plant Design <i>Bruce M. Webber and Albert D. Owens, Calgon Corporation</i>	1984

## WATER REUSE

TP09-09	An Integrated Approach to Water Reuse <i>Pete Elliott and Gary Geiger, GE Water &amp; Process Technologies</i>	2009
TP08-03	Recycled Water for Cooling 4000°F Melted Sand <i>Dr. Marcus N. Allhands and Tom Broderick, Orival, Inc.</i>	2008
TP08-01	Water Reuse in Cooling Towers - Current Experiences and Guidelines for Success in Refineries, Power Plants, and HVAC Systems <i>Paul Puckorius, Puckorius &amp; Associates, Inc.</i>	2008
TP07-19	Efficient One Step Phosphorous & Suspended Solids Removal from Municipal Wastewater <i>Ben Gould, Ashbrook Simon-Hartley; Clarence Melancon, Water Filtration Technologies, Inc</i>	2007
TP05-17	Monitoring Cooling Water for Potential Reuse <i>Phil Kiser, Hach Company</i>	2005
TP05-16	Bacterial Resistance to Biocides in Recirculating Cooling Water Systems <i>Dr. Chris L. Wiatr, Buckman Laboratories, Inc.</i>	2005
TP05-13	Evaluation in to the Use of Mine Drainage to Supplement Cooling Water <i>Dr. A. Harriram and D.G. Nieuwenhuis, Sasol Technology</i>	2005
TP04-01	Denver's Cooling Tower Water Conservation Program <i>Paul R. Puckorius and David A. Puckorius, Puckorius &amp; Associates, Inc.; Jim Reed, Denver Water Board</i>	2004
TP03-03	Water Reuse Experiences With Cooling Tower Systems in San Antonio, TX <i>Paul R. Puckorius, Puckorius &amp; Associates, Inc.; Ken Diehl, San Antonio Water System</i>	2003
TP02-17	Cooling Tower Systems Components and the Impact of Re-Use Water <i>Paul R. Puckorius and John M. Tiangco, Puckorius &amp; Associates, Inc.</i>	2002
TP01-04	Water Reuse in Refineries, Chemical Plants, and Utilities: Experiences Throughout the USA – Guidelines and Case Histories <i>Paul R. Puckorius, Gary A. Loretitsch and Torry Tvedt, Puckorius &amp; Associates, Inc.</i>	2001
TP95-15	Reclaimed Water as Cooling Tower Make-up for Refinery/Petrochemical Plants – Southern	1995

California's Activities and Time Table

*Paul R. Puckorius, Puckorius & Associates, Inc.; Kris Helm, West Basin Municipal Water District; Chris Spurrell, Chevron U.S.A.*

TP95-11 ..... Re-Use of Reclaimed Municipal Waste Water as Cooling Water Make-Up - Challenges and ..... 1995  
Solutions  
*Narasimha M. Rao, Nalco Chemical Company*

TP95-05 ..... Water Conservation via New Cooling Water Technology ..... 1995  
*Nicholas J. Alfano, Calgon Corporation; Dennis J. Sherren, Enron Power Corporation*

TP94-09 ..... Innovative Thinking in Water Conservation..... 1994  
*Mikel E. Goldblatt, Betz Industrial*

TP94-08 ..... Reuse of Industrial Waste Stream as Cooling Tower Makeup ..... 1994  
*Everett C. Phillips and Richard J. Strittmatter, Nalco Chemical Company*

TP93-09 ..... Water Reuse Within a Refinery ..... 1993  
*K.S. Eble and J. Feathers, Betz Industrial*

**WINTER OPERATION**

TP96-04 ..... Cold Weather Operating Guidelines and Experience for Natural Draft Cooling Towers on the..... 1996  
American Electric Power System  
*Frank L. Michell and Dan H. Drew, American Electric Power*

TP88-18 ..... Anti-freezing System on Natural Draft Crossflow Cooling Towers - Cattenom Nuclear Plant ..... 1988  
*Jean Barbaud, Electricite de France*

TP84-09 ..... Cold Weather Operation of Mechanical Draft Cooling Towers ..... 1984  
*N.E. Dolan, Ecodyne Cooling Products*

**WOOD ATTACK**

TP02-18 ..... Evaluation of a Simplified Procedure to Determine the Condition of Wood Cooling Tower ..... 2002  
Components  
*Matthew E. Anderson, Wood Advisory Services, Inc.; Yelena S. Golod, DuPont Engineering*

TP98-12 ..... Creosote Revisited..... 1998  
*James L. Willa, Willa, Inc.*

TP96-01 ..... Wood Preservation and How It Pertains to the Cooling Tower Industry..... 1996  
*Darrell R. Smith, Conrad Wood Preserving Company; Jeffrey J. Morrell, Oregon State University*

**ZERO DISCHARGE**

TP93-05 ..... Chemical Approaches to Zero Blowdown Operation ..... 1993  
*Gary E. Geiger and M.R.Hatch, Betz Industrial; J. Ogg, Stanford Linear Accelerator*



# Cooling Technology Institute

PO Box 73383 Houston, Texas 77273

281.583.4087 – Fax: 281.537.1721 – [www.cti.org](http://www.cti.org)

Printed in USA