



# CTI NEWS

COOLING TECHNOLOGY INSTITUTE • HOUSTON, TEXAS

VOLUME LI

SPRING & SUMMER 2009

NUMBER 1



### Mark Your Calendar!

**Committee Workshop**  
July 12-15, 2009  
Marriott  
Colorado Springs, CO

**Annual Conference**  
February 7-11, 2010  
the WestinGalleria  
Houston, TX

**2009 Committee Workshop**  
July 12-15, 2009  
**Registration Form**  
on our website  
[www.cti.org](http://www.cti.org)

### Inside...

- 2009 Board of Directors
- Bio's of the newest Board Members
- Pictures of the Annual Conference speakers, Ask the Expert Panelist
- A Word from our Committees
- 2009 Committee Workshop Agendas
- Press Release from Multi-Agency
- Retirement Announced
- 2010 Table Top Exhibits
- 2010 Table Top Exhibit Information
- Planned Activities for the 2009 Committee Workshop
- Hotel Information and Registration Form



*Dennis P. Shea*

## Message From The President...

Welcome to the Summer CTI News, We have a lot of information for you in this edition. CTI has gotten off to a great year beginning with our Winter Meeting. We had many informative papers, seminars, and education programs. Our technical committees continued working on guidelines and standards. Our attention now turns to preparing for the Summer Technical Meeting. I encourage everyone to make plans to attend this meeting. We have a wide variety

of issues that need your input so that we can make our standards the best to service our industry. We have seen renewed interest in Fiberglass Manufacturing Standards. CTI Manufacturing Group is sponsoring a seminar on design of cooling towers to meet seismic regulations in California. I invite everyone to plan now to attend. This meeting promises to be one of the best ever held. I hope to see you in Colorado Springs.

CTI President, 2008-2009  
*Denny Shea*

**Got a Cooling Tower Question?**

**Ask the EXPERT**

[www.cti.org](http://www.cti.org)

## Standards - Reviewed and Revised

### Revised:

**STD-111 - Gear Speed Reducers** - This standard establishes the minimum recommended rating practice and operating considerations for gear speed reducers used with propeller type fans on industrial water cooling towers.. Revised February 2009 - \$10.00

**STD-112 - Pressure Preservative Treatment of Dimensional Lumber** - This standard shall govern the treating procedure, the minimum retentions and penetrations to be obtained, and the physical condition of the lumber when pressure treating industrial water-cooling tower lumber. Revised February 2009 - \$10.00

**STD-201 - Standard for Thermal Performance Certification of Evaporative Heat Rejection Equipment** - This standard sets forth a program whereby the Cooling Tower Institute will certify that all models of a line of evaporative heat rejection equipment offered for sale by a specific Manufacturer will perform thermally in accordance with the Manufacturer's published ratings, as limited in Paragraph 4.5. Revised January 2009 - \$30.00

# 2009 CTI Board of Directors

*Serving as President for 2008 and 2009*

Dennis P. (Denny) Shea

Shea Top Dog, Inc.



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2007-2009

2008-2010

2009-2011

## Manufacturers



Jess Seawell  
Composite Cooling  
Solutions, L.P.



Ken Mortensen  
SPX Cooling  
Technologies



Tim Facius  
Baltimore Aircoil  
Company

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## Suppliers



Randy White  
C. E. Shepherd Co.,  
LP



Gary Geiger  
GE Water and  
Process Technology



Helen Cerra  
ChemTreat, Inc.

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## Owner Operators



Frank Michell  
American Electric  
Power



Chris Lazenby  
Southern Company  
Services



Mark Shaw  
Black & Veatch



# Meet 2009's Newest Board Members...



Tim Facius  
Baltimore Aircoil  
Company

**Tim Facius**, has over 30 years experience in the evaporative cooling industry. He has gained this experience in a variety of roles with Baltimore Aircoil since joining the company in 1978, after graduating from Virginia Tech with a bachelor's degree in Mechanical Engineering.

Over the years, Tim has been active in CTI through P&T Committee task groups for various codes, standards and publications. Since 2004 he has been the Marketing Committee Chair.

At BAC, Tim started his career in 1978 in the marketing department, with a progression of roles including Cooling Tower Product Manager. In 1990, he accepted a role as Corporate Materials Manager for BAC Operations, and in 1992 became Product Line Marketing Manager for BAC's European operations in Belgium. In 1995, he returned to North America as Director of Marketing. In 2000 Tim became Vice President of Marketing and Sales for North America and in 2002 assumed the additional responsibility of the Engineering Department. In 2006 he was assigned to Vice President of Global Product Marketing, and is also responsible for BAC's Global Sourcing initiative.



Helen Cerra  
ChemTreat, Inc.

**Helen R. Cerra** is the Manager of the Safety, Health, Environmental and Regulatory Affairs (SHERA) Department at ChemTreat, Inc.

She has over twenty years of professional experience in all aspects of water treatment, not limited to the environmental and regulatory areas, but also in the areas of boiler, cooling and waste treatment.

Helen began her career with the Department of Defense, followed by thirteen years with another major water treatment company. Before relocating to Richmond, VA, she had her own consulting business.

She has coauthored papers for NACE and presented at various Legionella sessions at the International Water Conference (IWC) and at the Cooling Technology Institute (CTI). She is a member of the Water Treating Committee at CTI.

Helen holds a B. S. in Chemical Engineering from Lehigh University and is a member of the American Institute of Chemical Engineers.



Jon Bickford  
Alliant Energy

**Jon Bickford** is currently a Shift Supervisor for Alliant Energy at the Ottumwa Generating Station in Iowa. Jon has been with Alliant Energy for 30 years and has been a Shift Supervisor for the past 19 years. Jon has also been the plants Cooling Tower lead person for the past 23 years.

Jon has a 2 year degree in arts and science at Indian Hills Community College. Jon is an active member of Alliant Energy's Fire Brigade, Confine Space and Hazmat teams.

Jon has most currently served as the chair person for the Owner/Operators group with Cooling Technology Institute (CTI) and is the Ad-Hoc Review Coordinator also for CTI. Jon has also been involved in numerous ES&M committees with CTI.

# 2009 Annual Conference



(l-r) Dudley Benton, McHale & Associates, Inc.; Kelly Rangel, University of Texas; Kevin Milici, GE Water & Process Technologies



(l-r) Leandro Etcheverry, Wiss, Janney, Elstner Association; Thomas Kline, Structural Group; Nina Woicke, GEA 2H Water Technologies GmbH



(l-r) Gary Geiger, GE Water and Process Technologies; Peter Elliott, GE Water and Process Technologies; Art Brunn, Honorary Life Member; Tom Weast, Cooling Tower Test Associates, Inc.



(l-r) James Green, Heisler Green; Mark Shaw, Black and Veatch Corporation; William (Bill) Martin, Baldor Electric Company; Robbie McElveen, Baldor Electric Company



(l-r) David McLachlan, Fluid Treatment Solutions, Inc.; Randy Serwan, Rain for Rent; Gregg Hentschel, SPX Cooling Technologies, Inc.



(l-r) Dustin Troutman, Creative Pultrusions, Inc.; Dennis Moran, CM Towers, Inc.; Ken Hennon, CleanAir Engineering; Duane Byerly, Rexnord Industries

# Speakers and Participants

## Ask-The-Expert Session



Front Roll (l-r) - Dave Hutton, Composite Cooling Solutions, LP; Jim Willa, Honorary Life Member; Back Roll (l-r) - Chris Lazenby, Southern Company; Richard DesJardins, DesJardins Consulting; Jim Baker, Composite Cooling Solutions, LP; Bob Cunningham, Arthur Freedman Associates, Inc.; Jabir Gill, Nalco Company



## Program Committee



(l-r) Brandon Rees, Cooling Tower Depot, Inc.; Jim Willa, Honorary Life Member; Glenn Rees, Boltoutlet.com; Paul Nelissen, Howden

## Outgoing Board Members and Committee Chair



(l-r) Anthony DePalma, Tower Performance, Inc.; Mark Shaw, Black & Veatch Corporation; Robert Giamarutti, Hudson Products Corporation; and Rich Harrison, Baltimore Aircoil Company

## Press Release

Contact: Chairman, CTI Multi-Agency Testing Committee

Houston, Texas, 1 May 2009

The Cooling Technology Institute announces its annual invitation for interested drift testing agencies to apply for potential Licensing as CTI Drift Testing Agencies. CTI provides an independent third party drift testing program to service the industry. Interested agencies are required to declare their interest by July 1, 2009, at the CTI address listed.

### WT Minutes continued on page 7

**Heat Exchanger Panel** The panel discussion on Heat Exchangers was well received and well attended. The three participants ChemTech Chemical Services (Water Treatment), Conco (Heat Exchanger Cleaning) and Testex (Non destructive testing of Heat Exchangers) presented an informative well-rounded session with great participation by CTI members. John Zibrida and Frank Michel moderated the panel discussion. Thanks to all participants.

**New Business** Water Conservation and Discharge regulations. There were topics discussed regarding water conservation and discharge. CTI held a panel discussion on water reuse and conservation and published a

new document on this subject. The discharge issues should be covered in Chapter 7 rewrite. The Environmental Issues task group, which is pending, will encompass this topic.

The affect of make-up water quality and pretreatment technology and its effect on cooling performance was brought up as a topic for a future panel discussion.

### Adjournment

The closing meeting was held on Wednesday 11 February there were 15 attendees.

# A WORD FROM OUR COMMITTEES

## Engineering Standards and Maintenance Committee

Annual Conference – The Westin Riverwalk, San Antonio, TX

February 9-11, 2009

**Chair: Jim Baker, Composite Cooling Solutions, LLC**

**Vice Chair: Chris Lazenby, Southern Company Services**

**Vice Chair: Craig Burriss, Amarillo Gear Company**



(l-r) Toby Daley, Composite Cooling Solutions, LLC; Chris Lazenby, Southern Company Services; Craig Burriss, Amarillo Gear Co.

### GENERAL SESSION

#### **Call to Order/Announcements –**

Meeting was called to order at 1:39 p.m. on February 11, 2009.

To clear up some outstanding confusion, a new procedure for Ad-hoc Review was defined as follows:

1. Documents ready for ad-hoc should be sent to Jon Bickford and copied to Jim Baker.
2. Jon Bickford sends the document and list of reviewers to the CTI Office
3. The Office sends the document out for review and receives comments/revisions back from the reviewers.
4. The compiled comments/questions/revisions are sent from the Office back to Jon Bickford for distribution to Task Chairs.

It was reiterated that all ad-hoc documents be routed through the CTI Office, which had a new system in place to better process them.

#### **Reports from Lead Task Group Chairs –**

##### **Wood, Metal, and Concrete Materials Task Group – Bill Howard**

- A general reminder was given to all Task Groups to attach attendance lists for all group meetings to the minutes of that meeting.
- STD-112 was going to the Board.
- Jess Seawell reported that Chapter 9 and ESG-138 were going to be sent to Jon Bickford for ad-hoc and that both would hopefully be ready for Board approval in July.
- The R<sub>w</sub> Factor group met and would try to get Dr. James Harris to attend their meetings at the Committee Workshop. This re-opened discussions on getting Dr. Harris to present a seminar at that meeting. Jim Baker said that he would like to

see a list of Manufacturers willing to commit to paying a portion of Dr. Harris' costs. Tom Toth said that a fixed date for Dr. Harris' presentation needed to be set and that Committee members could submit specific questions for Dr. Harris by April. Jim Baker asked how much time should be set aside on the agenda in the Summer for this presentation, and Bill Howard suggested around four hours total.

- Due to interest expressed by eleven different people, it was suggested that a new Task Group be formed to deal with Concrete Repair and Upgrade. Ideally the group could have a rough draft of a document ready for the Summer Meeting.
- The International Woods Standard group did not meet.

##### **Mechanical Equipment Task Group – Denny Moran**

- Denny Moran was not present and there was no report given in his absence.

##### **FRP and Plastics Task Group – Glenn Barefoot**

- Mike Whittimore was waiting for some outstanding comments on STD-136, and then it should be ready for ad-hoc.
- STD-131, STD-137, and ESG-152 were in ad-hoc.
- The Fan Stack groups did not meet, but they would try to get back on track in the summer.
- Denny Moran was still “a ways out” on a draft for the Wood-to-FRP Connection Guideline, but he was working on it.

##### **Tower Operations Task Group – Jess Seawell**

- No report given.

##### **Hazard & Environmental Protection Systems Task Group – James Blake**

- Denny Shea will continue overseeing review of Chapter 8 in conjunction with Dean Lamering and Bob Cunningham.

##### **General Comments –**

- Tom Bugler spoke and reported that Chapter 10 was 99% done and should be ready for Board approval by summer.
- Len Bednard reported that an outline of the Vibration Standard was ready and that it should get distributed to the members by summer. He requested two separate half-day sessions be set aside at the Committee Workshop for this task.
- Jim Baker reiterated that there is still an ongoing effort to get publications properly named. In conjunction with this, he noted that the Publication List needed some changes to promote more consistency in document labels and descriptions. He asked those in attendance to take a look at the current list and send in any comments or proposed changes.



# Water Treating Committee Meeting Minutes

Annual Conference – The Westin Riverwalk, San Antonio, TX,

February 9-11, 2009

Chair: John Zibrida, ZIBEX, Inc

Vice Chairs: Jim Kanuth, ChemTreat, Inc.; and Matt Wangerin, Ashland Water Technologies



(l-r) Jim Kanuth, ChemTreat, Inc.; John Zibrida, ZIBEX, Inc.; Matt Wangerin, Ashland Water Technologies

The meeting was called to order. John Zibrida led the opening discussions. Introductory remarks included thanks to all participants and their employers for time and effort spent on behalf of CTI. Returning and new attendees were introduced. First time attendees were introduced and recognized.

**Approval of Minutes from Feb 2008 Sub-Committee Meeting**  
Approved.

## Task Group Reports

**Environmental Issues** - Dean Lammering - The goal of the Task Group has been a revision of the Cooling Tower Manual - Chapter 7. No action was taken at 2009 Annual Conference, as the Chairman was not present.

**Water Reuse Document** - Phil Kiser - WGT-155 "Internal Plant Cooling Water Reuse" was completed and published it is now available from CTI. Phil Kiser was presented with a copy of the document. This task group was dissolved in the summer 2008 upon completion of task.

**Cooling Water Performance: Microbiological Monitoring** - This Task Group is in need of a new chairman. The draft of work completed to date will be available for Summer Meeting in Colorado Springs.

**Filtration of Cooling Tower Systems** - Clarence Melancon - An updated rewrite inclusive of individuals present at summer meeting was completed and distributed to committee members. Clarence Melancon indicates the Task Group expects to circulate a draft for peer review at summer committee workshop 2009.

**Oxidizing Biocide, WTP-141** - John Cohen - Farah Azarnia completed the redraft document was circulated to the committee and assignments were made. It is anticipated that the rewrite would be completed and available for internal review by summer 2009 in Colorado Springs. This document may be ready for ad hoc review at CTI Summer 2009 meeting in Colorado Springs.

**Instrumentation and Control** - Phil Kiser has assumed the role of chairman. Mike Dorsey was not present. Mission statement and task group goals are in development.

**Ozone Reading Lists, WTP-139 & 139.1** - Ken Mortensen - The "Ozone Reading List" has been updated and completed by Ken Mortenson and is available from CTI (WTP-138.1 July 2008)

**Task Group for Legionella** - Art Brunn - The revised "Legionella Guidelines" was published (July 2008) and is available from CTI. The document is available from CTI without charge as a public service. The

task group for this rewrite was dissolved after completion. STD-159 meeting was held on Wednesday 11 Feb and covered separately.

**Cooling Water Performance: Deposit Control Monitoring** - Gary Geiger - reported that he has collated the various sections for further editing and revision. Jaspir Gil PhD has assumed the role of chairmen of his task group. A peer review was initiated and the revision presented by Gary Geiger will be sent to Bob Cunningham, Loraine Huchler, and Jim Kanuth volunteered for the review. This document may move to Ad Hoc review at Summer 2009 meeting in Colorado Springs.

**Green Technologies in Cooling Water** - Michael Dwyer - has assumed responsibilities of Chairman. A charter and mission statement was completed. Mike Dwyer has circulated the progress of the committee. The CTI Board has recommended inclusion of member of the two other standing committees. The progress of this committee will be circulated to ES&M and P&T committees

**CTI Document Review** - Art Brunn - A review of documents with recommendations for appropriate rewrites will be presented at summer 2009 meeting. The need for appropriate task groups for this purpose will be assessed at summer 2009 meeting

## Liaison Reports

**ASHRAE** - Paul Lindahl summarized ASHRAE Std. 188 on Legionnaire's (WHO).

**AWT** - Annual Meeting will be held August in Miami, FL.

**EPRI** - EPA Rulings on Cooling Systems, Conf. on Service Water Systems - Meeting in August.

**NACE** - Meeting is in Atlanta

**IWC** - Meeting in Orlando, FL in October, 2009. Tuesday sessions involve cooling water. Joint sessions and research with IWC and CTI are being discussed. CTI and IWC will sponsor booths at each other's meetings.

## Old/New Business

All chairs of standing committees were present at the Annual Conference 2009 meeting except Chapter 7 rewrite. Task groups meetings were well attended and progress was made. John Zibrida held a discussion regarding the summer meeting and the absence of five of seven committee chairs. While progress was made in all cases, it is important for the committee chairs to appoint a substitute or contact water treating committee chair to circulate agendas to facilitate progress. The summer 2009 has several documents, which are scheduled for completion. Suppliers and End Users were reminded that participation is important in committee work to develop well-balanced documents and guidelines inclusive of CTI Members and the industries and technologies it serves.

**New Task Groups Recommended Task Groups include:**

**Non Chemical Devices** Bob Cunningham has initiated a task group for non-chemical water treatment devices. The objective of the task group is to develop a criteria on which to evaluate performance. Bob is writing a position statement and this task group will plan to meet at summer 2009 meeting.

**Environmental Issues.** The Environmental Issues task group is still seeking a Chairperson.

**Technical Program** The 2009 technical program was well attended.

WT Minutes continued on page 5

# 2009 Committee Workshop Agendas

## ENGINEERING, STANDARDS AND MAINTENANCE

**Jim Baker** - Composite Cooling Solutions, LP, Chair  
**Craig Burriss** - Amarillo Gear Company, Vice-Chair  
**Chris Lazenby** - Southern Company Services, Vice-Chair

- I. Call to Order/Announcements
- II. Introduction of Attendees
- III. Approval of 2009 Annual Conference Meeting Minutes
- IV. Professional Development Hours (PDHs)
- V. Document Approvals Since Winter Meeting
- VI. Reports from Lead Task Group Chairs
  - *Wood, Metal, and Concrete Materials Task Group*
  - *FRP and Plastics Task Group*
  - *Mechanical Equipment Task Group*
  - *Tower Operations Task Group*
  - *Hazard & Environmental Protection Systems Task Group*
- VII. Five Year Document Review Status
- VIII. Task Group Meeting Schedules
- IX. New Business
- X. Adjourn

## PERFORMANCE & TECHNOLOGY

**Ken Hennon** - CleanAir Engineering, Chair  
**David Wheeler** - CleanAir Engineering, Vice-Chair  
**Gene Culver** - McHale & Associates, Inc., Vice-Chair

- Technology Document Review
- ATC-107 Air Cooled Steam Condenser Test Code – David Wheeler
- ATC-140 Drift Test Code – Ken Hennon
- ATC-150 Acceptance Test Procedures for Wet-Dry Plume Abatement Cooling Towers – Paul Lindahl
- STD-201 Standard for Thermal Performance Certification of Evaporative Heat Rejection Equipment – Frank Michell
- STD-202 Standard for Publication of Custom Cooling Tower Thermal Performance Test Results – Paul Lindahl

## WATER TREATING COMMITTEE

**John Zibrida** - Zibex, Inc., Chair  
**Matt Wangerin** - Ashland Water Technologies, Secretary

- I. Call to Order/Announcements
- II. Introduction of Attendees
- III. Approval of Annual Conference Meeting Minutes
- IV. Task Group Reports
  - A. Environmental Issues – Dean Lammering
  - B. Water Re-Use Document – Phil Kiser
  - C. Cooling Water Performance: Microbiological Monitoring – Walt Tyler
  - D. Filtration of Cooling Water Systems – Clarence Melancon
  - E. Oxidizing Biocide, WTP-141 – Dwight Emerich
  - F. Ozone Reading Lists, WTP-139 & 139.1 – Ken Mortensen
  - G. Cooling Water Performance: Deposit Control Monitoring – Jean Gucciard
  - H. CTI Document Review - Paul Puckorius
- VI. Liaison Reports:
 

ASHRAE	ASM
AWT	EPRI
NACE	IWC
WATERTECH	
Microelectronics Water	
- V. New Business
  - Need for new Task Groups?
  - Technical paper subjects for "targeted" symposium topics.



### Retirement for a Long Time Friend of CTI's

To our CTI Friends:

Amarillo Gear announces the retirement of Clay Barbee, Sales Manager, May 1, 2009. Clay's 31 years of service to the company and its customers, knowledge of the industry, his good humor, and gentleman's spirit, will be missed.

Clay and his wife Donna, look forward to retirement on their working ranch in central Texas and will care for abandoned and abused donkeys.

Please join us in thanking Clay and wishing him "Happy Trails" in his most deserved retirement.

Amarillo Gear Company.







# Table Top Exhibits

Tuesday, February 9, 2010

4:00p - 9:00p

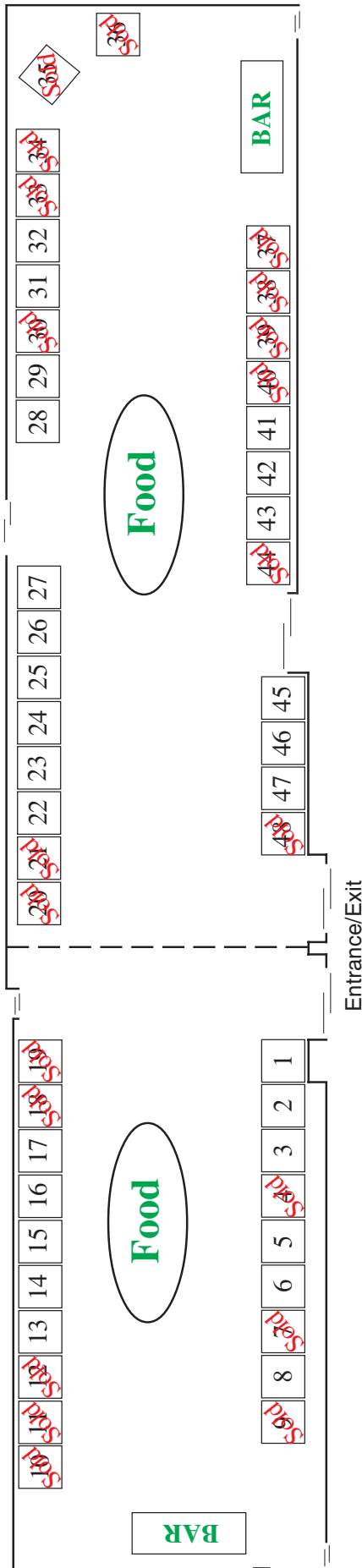
Westin Galleria, Houston, Texas

**Don't forget to reserve your space.**

**A total of 48 exhibit spaces available at \$1200/space with 1/2 already reserved**

**for more information contact**

**Virginia Manser at 281.583.4087 or vmanser@cti.org**



# COMMITTEE WORKSHOP PLANNED ACTIVITIES

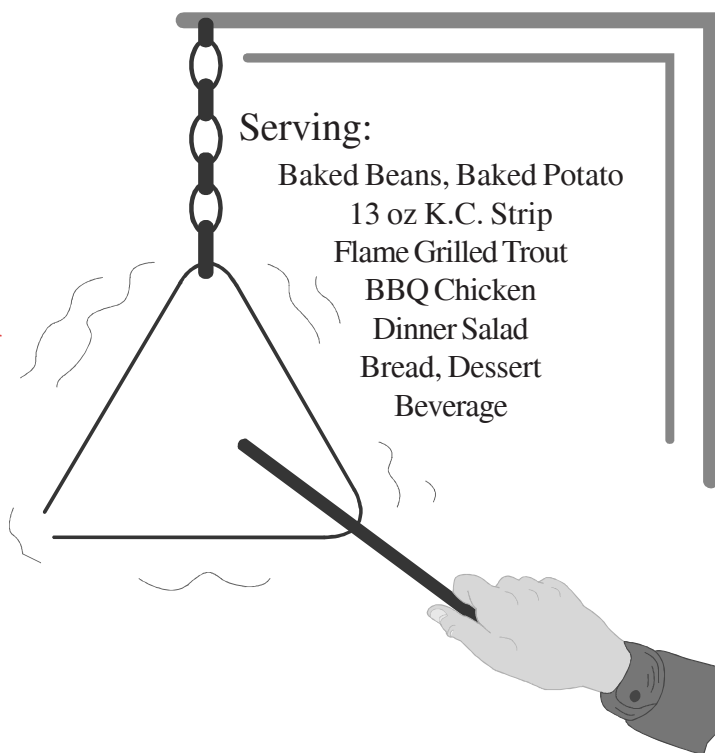


**Monday Evening,**  
**July 13, 2009**

**Winter Steak House**  
**@ the Flying W Ranch**

- Dudes and Dudettes - \$70
- lil' Polks (15 & under) - \$35

Price includes  
Dinner, Show and Drinks  
arriving at 6:00p  
and staying until 10:00p



# Registration Form

## Committee Workshop July 12-15, 2009 Marriott Hotel, Colorado Springs, Colorado

Name \_\_\_\_\_ Nickname for Badge \_\_\_\_\_  
Company \_\_\_\_\_ Spouse Name if Attending \_\_\_\_\_  
Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Phone \_\_\_\_\_ FAX \_\_\_\_\_ Email: \_\_\_\_\_

- Full 3 Day Registration** ..... \$350.00 **\$395 after July 3**
- Rw Factor Seminar**, Sponsored by ES&M Committee - Tue, July 14, 8 am - Noon ..... N/C  
(Please check if you will attend)
- Golf Tournament** (Handicap \_\_\_\_\_) Tee Time Begins @ 8:00a ..... \$130/pp Closed July 3
- Spouse Name \_\_\_\_\_ (Handicap \_\_\_\_\_) ..... \$130/pp Closed July 3
- Monday Night **at the Flying W Ranch** (No. Adults \_\_\_\_\_) ..... \$ 70/pp Closed July 3  
No. Kids 15 and under ( \_\_\_\_\_ ) ..... \$ 35/pk Closed July 3

TOTAL DUE \_\_\_\_\_

Enclosed is my check made out to CTI for \$ \_\_\_\_\_

Registration can be charged to the following cards: [ ] Visa [ ] Master Card [ ] American Express

Card# \_\_\_\_\_ Exp. Date \_\_\_\_\_ Cardholder \_\_\_\_\_  
CVV/CVC/CID Code \_\_\_\_\_ (must have to process payment).

Payment for meeting registration can be made at the meeting, but please pre-register. (All recreational activities must be paid for in advance. Events will be cancelled if we do not receive enough reservations by July 6.)

**REFUNDS WILL BE MADE IN FULL FOR CANCELLATIONS MADE PRIOR TO JULY 3, 2009.  
15% CHARGE ON ANY CREDIT CARD REFUND MADE - NO EXCEPTIONS!**

## 2009 Committee Workshop, July 12-15, 2009 Marriott Hotel, Colorado Springs, Colorado



The 2009 Committee Workshop will be held at the Marriott Hotel, Colorado Springs, Colorado, July 12-15, 2009. Plan to arrive early and participate in golf, tour the Air Force Academy, go hiking, actually the sky is the limit.

*Make your room reservations **NOW.***

**Colorado Springs Marriott Reservations: 719.260.1800**

<http://www.marriott.com/hotels/travel/cosmc?groupCode=comcoma&app=resvlink&fromDate=7/10/09&toDate=7/17/09>

**Guest Room Rates: (Cut off Date: Wednesday, June 24, 2009):**

*Single/Double Rate: \$175/plus tax • Junior Suite: \$195/plus tax*

*Hotel room rates are subject to applicable state and local taxes and fees.*

# Rw Factor Seminar

sponsored by ES&M, July 14, 2009 8:00a - 12:00p

Jim Harris of J.R. Harris & Company out of Denver, CO will be our speaker for this seminar. The itenary will be:

- Basic parameters for seismic design by linear analysis: R, C-sub-d, and Omega-Sub-zero (a very high level overview of the basis behind the current codes)
- Organizations and committees with jurisdiction over seismic codes and standards
- New developments for validation of seismic design parameters: the ATC-63 project
  - Basic statistical criterion
  - Fundamental elements of the methodology
    - Ground motions • Test data / behavioral models • Design information / requirements / limitations
    - Analysis methods • Peer review
- Cooling towers; looking forward

## 2009 Board of Directors

President ..... Dennis Shea  
Vice-President ..... Jess Seawell  
Treasurer ..... Randy White  
Secretary ..... Frank L. Michell

Director ..... Jon Bickford  
Director ..... Helen Cerra  
Director ..... Tim Facius  
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Director ..... Gary Geiger  
Director ..... Chris Lazenby  
Director ..... Ken Mortensen  
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**CTI NEWS**  
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Art Brunn - Chairperson  
Publications Committee

Virginia A. Manser, Managing Editor

Donna A. Jones, Administrative Assistant

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