

Austin ASHRAE

Applications Design Seminar

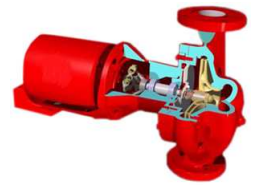
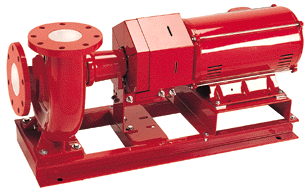
Please fill out form below, include check, & mail to address shown. Contact Randy Schrecengost at schrecengostrand@stanleygroup.com or 427-3623 for Questions.

PDHs **REGISTRATION DEADLINE: Friday, October 23, 2009** **7.0 PDHs**
Per Session **Optimizing Hydronic** **Seminar**

Pumping Systems for Energy Savings

November 4, 2009

Please Circle what you plan to attend



Name: _____

Company & E-mail: _____

Roy C.E. Ahlgren, Former Director Little Red School House - ITT Fluid Handling,
Former ASHRAE Chair TC6.1 Hydronic & Steam Heating Equipment Systems

TOPIC: Hydronic Design Considerations for Energy Savings

Site Registration begins promptly at 7:30 a.m.

Morning:	8:00 – 12:00 p.m.	Initial Design Considerations	\$75.00
Lunch:	12:00 – 12:30 p.m.	Box Lunch provided – Need Headcount	
Afternoon:	12:30 – 4:00 p.m.	Alternate Design Considerations	\$75.00

Participants will receive ITT Large Chill Water System Design Manual

Full Seminar Pricing (Proceeds to Research / Scholarships): \$150.00

Early Bird Pricing ONLY (by October 23rd): \$130.00

Seminar Location and time: DSI Training Room, 3901 South Lamar, Suite 110, Austin.
Please arrive at least 30 minutes prior to each Session. We must vacate by 4:15 p.m.

Make Check Payable to “Austin ASHRAE” (No Credit Cards) and mail with form to:
Randy Schrecengost, P.E., Seminar Coordinator; Attn: ASHRAE Seminar;
Stanley Consultants, 6836 Austin Center Blvd, Suite 350, Austin, TX 78731

Seminar Class Size is LIMITED to 60 people. Pricing Discounts apply to EARLY registration ONLY. Please register early!

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Morning session - Initial considerations

- 1. Why worry about it? A short review of the design process regarding hydronic system pumps.**
 - a. Energy saving rules apply during the pump selection process.**
 - b. Selection strategies: choosing the right impeller, the right motor**
 - c. NPSH and avoiding cavitation**
 - d. How over-sizing and arbitrary specs can waste energy.**
 - e. Special case: saving energy and avoiding problems in cooling tower pumps**
 - f. Special selection requirements**
 - g. “Free cooling” may be able to save a “ton” of energy.**
- 2. Special case: saving in closed system pumps**
 - a. Selection strategy in spite of uncertainty in the design process**
 - b. Why in the world should I trim the impeller?**
- 3. What are all these arguments about system balance?**
 - a. Some design decisions that have a not-so-obvious effect on balancing**
 - b. Do balancing valves waste energy?**
- 4. Control valve woes**
 - a. Selecting valves so they will work as intended**
 - b. While we’re at it, let’s use them to save energy too.**

Afternoon session (12:30-4:00): Alternative ideas - may be useful in large systems.

- 1. How can primary-secondary pumping save energy?**
 - a. Designing the “common pipe” connection. Some research results.**
 - b. Special issues in chilled water systems.**
 - c. What about bypass piping?**
- 2. Multiple pump systems may be able to save a lot**
 - a. Parallel constant speed pumps**
 - b. Parallel variable speed pumps**
- 3. Special case: large pumping systems**
 - a. Some attributes of well designed piping systems**
 - b. The “control area”**
 - c. Saving energy with “thermally independent “ systems**
 - d. Do we always need primary-secondary pumping? Variable flow primary only systems**