**Course Fee: US$650**

Improve your understanding of the methods in ***X****ace* and develop new skills to model difficult cases. This short course focuses on improving thermal predictions, interpreting results, troubleshooting cases and applying workarounds. Even the most experienced thermal designers will gain new insight into how to improve thermal analyses using ***X****ace*.

Case studies may include:

- Rating natural draft (fans-off) cases
- Improving accuracy of predicted driver power
- Modeling units with redundancy fans (3x50% fans)
- Multiple service units
- Inert blanketing in air-cooled condensers

**Suggested Participants**

Experienced ***X****ace* users who rate, design and troubleshoot air-cooled heat exchangers

**Course credits:** 6 hours (PDH/CEU)

**Outline**

I. Modeling Redundancy Fans in ***X****ace*
   - Why are redundancy fans used
   - Specification procedure
   - Interpreting outputs

II. ***X****ace* Fan Driver Power
   - Importance of driver power estimate
   - Auxiliary pressure losses in air-coolers
   - Fan manufacturers' screening tools

III. Rating Natural Draft Cases in ***X****ace*
   - Air flow rate calculation
   - ***X****ace* natural draft air-cooler method
   - Specification procedure

IV. Multiple Service Air-Coolers
   - Common applications
   - Specification procedure
   - HTRI design guidelines