

ASHRAE TC 10.8  
Refrigeration Load Calculation  
2016 Annual Meeting Minutes

3:00 – 5:00 P.M.  
Sunday, June 26, 2016  
St. Louis, MO

ACTION ITEMS FROM ST LOUIS (ANNUAL) 2016 MEETING:

A.	Entire TC	Review Load Calculations chapter.	Submit comments prior to January Conference
B.	Todd Jekel	Need to review hard versus soft conversion of example in Chap 24. Need to resolve concern about the disclaimer on the example	In progress.
C.	Doug Scott	Continue development of 1434 – doorway infiltration. Review with TC10.5 for co-sponsor.	Discussed and will continue development.
D.	Doug Scott Dr. Love	Work on RTAR for a Research Survey comparing load calculations, energy model, field calibration	
E.	Doug Scott	Work on RTAR for field survey of insulation degradation.	Contact TC4.4
F.	Dan Dettmers	Continue with TC 10.8 Program development	
G.			

1. Call to order at 3:00 PM. Quorum established: Don Fenton, Doug Scott, Tom Wolgamot, Dr. Richard Love, Dr. Sherif, Todd Jekel
2. Meeting Minutes and General Business
  - A. Minutes were approved unanimously. Dr. Richard Love and Todd Jekel motioned and seconded.
  - B. Introduction of guests and attendees was done.

- C. Don Fenton noted that this was his last meeting as Chairman. Doug Scott is the incoming chair.
3. Report on Section Head Meeting from Don Fenton, and Jim Tauby, Section head.
- A. Don stated that at the TAC meeting, one of the major topics that was discussed was the Refrigeration Handbook. The Handbook committee is under scrutiny. Don reported the Handbook Committee is doing OK and that many of the subjects in the Handbook are actually relatively stable as compared to items like Refrigerants. New software options are coming to conduct meetings. This could possibly save some actual meeting time by doing some things ahead of time. This may work well for subcommittee meetings with smaller groups. The conference tracks were also discussed, and it was noted the Refrigeration track is often not included. There is no refrigeration track for Las Vegas. There is one for Long Beach. It was pointed out that generally the committee would prefer to see the Refrigeration Track occur in the Winter versus the Summer. ASHRAE seems to be pushing for written material for the conferences, as 124 Conference Paper abstracts were approved of 130 submitted. Of the 124 approved, then only 84 papers were actually received, and 7 papers presented. There has been a request for ASHRAE Journal articles.
- B. Jim stated every 2<sup>nd</sup> or 3<sup>rd</sup> meeting will have a Refrigeration Track. Long Beach will have a Refrigeration Track. Jim noted that someone from Publications also spoke and said they are looking for ideas for Guides or other items the TCs may find useful.
4. Liaison Reports
- Scott Fisher – Handbook: Scott stated this is year 3, and typically the year of doing significant work and edits on the handbook. There was a training session this AM about the Handbook process. There is an on-line collaborative tool through which people can make changes on-line.
- No other Liasons present.
4. Committee Reports:
- A. Handbook – Todd Jekel.
- Todd sent the handbook chapter out for review to the Chapter at the conclusion of the previous meeting. This is Chapter 24 – Load Calculations. The Chapter is 60 pages. Todd has broken it into sections, with the following assignments:
- |                        |              |
|------------------------|--------------|
| Product Load           | Daniel Cowan |
| Internal Load          | Doug Scott   |
| Infiltration Air Load  | Richard Love |
| Equipment-Related Load | Doug Scott   |
| Safety Factor          |              |

It was discussed that we need to treat latent loads with more significance. Todd provided the following deadlines:

Drop dead dates:           Reviewer Deadline May 15, 2016  
                                  Revised Chapter to TC for Review May 15, 2017  
                                  TC Vote for Approval July 31, 2017

It was noted the author of the example within the Chapter has voiced a strong disagreement about the statement that follows his example that comments about diversity and the possibility of oversizing the system. The author of the example thinks the system may actually be undersized after following his example due to lack of door opening considerations and other factors. It was noted the statement was intended as a notice to merely be careful of safety factors on top of safety factors depending on how the load calculations are performed. It could potentially help resolve the issue if the statement in question was clarified and moved ahead of the example. It was further noted the percentage range referenced in the statement is not supported by any studies or specific data. It would potentially be beneficial to add an example that demonstrates the effect of diversity. It should also be explained that it is not preferred to address equipment de-rating and system performance issues by using load factors. Bill Kumpf and Doug Scott volunteered to help with this statement and the example. It was targeted to have a draft by the next meeting. Doug commented that it would be nice to update the bibliography to more current references. The existing references are getting fairly old.

#### B. Research – Doug Scott.

WS 1434 –Infiltration. This will actually be a new WS. It has been revised significantly.

Doug handed out copies for review. The project will do door tests in an operating facility. Scope was limited to be only a freezer test. Doug has identified a couple of facility operators that would be willing to host this test. They want to meet face-to-face, and Doug needs to coordinate a time. Possible budget could be \$300k. May be able to negotiate a donation from a door vendor, with HCR and Mycom mentioned as possible. Ultimately this will be left in the hands of the proposer. It was decided to include 2 different ambient temp/humidity conditions – something moderate, something more extreme. There was also discussion about having the tool kit be either excel-based or an executable.

Other - Discussed other research possibilities for insulation degradation, field study of insulation values as they are in the field. Doug will discuss this with 1.8. Want to

review this at the next meeting. Doug sent an email to TC1.8 chair and got no response back. No further action occurred. It was discussed that roofs generally have more impact than walls, unless it is a mid or high-rise building, in which case it can flip. It was unknown what instruments would be used to measure heat flux in this application. TC1.8 does not necessarily apply – this is for pipes, tanks, etc. TC4.4 is Building Insulation. Doug will contact TC4.4.

Come up with Research on how to determine when building peak load occurs by using an energy model that provides an hourly analysis. The question is whether it is feasible to calculate peak load using an hourly tool. It was noted that what you use for accurate annual energy use is different than what you would use for design. Constraints and data runs used for energy is different than what is used for system selection. So what guidance can we provide that illustrates how to use the constructs of an energy model for design peak load? Handbook says to do this. Doug is concerned this can be misleading and not so simple. Review the possibility of doing a survey of various sites for load calculations, energy model, and actual calibration. Do some extremes like a big vertical, mechanized space with no lights/people, to a multi-zone area with lots of people, infiltration, etc. Maybe include a statement about the risk of having oversized systems and how they are oversized. Dr. Love agreed to help Doug with this.

Other - Research topic on defrost methods, comparison of loads developed including loads added to the coil, energy added to the surrounding air, and energy re-absorbed into the coil after restart. Possible co-sponsor with 10.1.

#### C. Programs – Dan Dettmers

Energy Efficient Industrial Buildings – lightening round: improvement from: floating suction/floating head, VFDs on fans, how to effectively load shift, defrost, reducing loads

Produce/fruit International processing

Do load calculations conference papers, ice cream, meat processing, frozen pizza, dairy, winery, blast freezer, nitrogen freezing/dough

E. Webmaster – Ryan Hoest. Everything is up to date

F. Membership – Don Fenton

Next meeting is Don's last meeting. Doug will be new incoming meeting. Tom will be new V.C. Will need a new Secretary to start at conclusion of June's meeting. Toby

will consider this role. Don asked for cards and ASHRAE #s for anyone wanting to be a CM. Don would like two more VM. DJ will come back on as a VM as would Toby. Doug is new Chair, Tom to be Vice Chair, Toby to be new Secretary.

G. ALI Coordinator – Dan Dettmers

5. Old Business

A. None.

6. New Business

A. None.

7. Announcements

A. The next meeting will be in Las Vegas.

8. Adjournment. Motion to adjourn made at 4:57. Motion was seconded and passed.