MEMBERS PRESENT:  
Cameron Labunski, Chair  
Jim Bochat, VC/Planning  
Kristin Schaefer, VC/Operations  
Hank Bagheri  
Fred Betz  
Charlie Henck  
Mo Hosni  
Rob Risley  
Jeremy Smith  
Kay Thrasher  
Branko Todorovic  
Bill McQuade, BOD ExO  
Chuck Gulledge, PEC Chair

MEMBERS ABSENT:  
Vincent Tse

GUESTS:  
Billy Austin  
Michael Brandemuehl  
Don Brandt  
Walid Chakroun  
Tim Dwyer  
Lindsey King  
Bill Klock  
Keith Reihl  
Tyler Lewis  
Dennis Wessel  
Michael Whitford

STAFF PRESENT:  
Karen Murray, Staff Liaison  
Steve Comstock, Director
### ACTION ITEMS

<table>
<thead>
<tr>
<th>No.</th>
<th>Page</th>
<th>Responsible</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>Staff</td>
<td>Send ExO report to the full committee.</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>Staff</td>
<td>Send PDC the list of reference materials recommended in preparing for each certification exam</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>Staff</td>
<td>Label courses in ASHRAE conference promos and programs that may be helpful for certification exams and recertification</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>Ms. Thrasher</td>
<td>Reach out to ExCom for potential locations for the HVAC Design: Level I – Essentials training.</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>Staff</td>
<td>Explore how ALI PowerPoint slides can be added to the CTTC PPT and reviewed by the PDC before release. Ms. Thrasher and Mr. Reihl agreed to review and edit as needed for CTTC use.</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>Staff</td>
<td>Reach out to Al Veeck to discuss interest in the potential course.</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>Staff</td>
<td>Terminate the remainder of the agreements with Mr. Hegberg to revise Heating Systems Self-Directed Learning (SDL) courses and compensate him accordingly</td>
</tr>
<tr>
<td>8</td>
<td>7</td>
<td>Staff</td>
<td>Seek TC review of the Fundamentals of Water System Design and Fundamentals of Heating Systems Self-Directed Learning (SDL) courses to determine need for further revisions</td>
</tr>
</tbody>
</table>
I. CALL TO ORDER
Mr. Labunski called the meeting to order at 8:04am and welcomed everyone. Members and guests introduced themselves.

II. REVIEW OF AGENDA
No changes.

III. APPROVAL OF MINUTES FROM APRIL 14, 2016 CONFERENCE CALL
Mr. Risley moved and Mr. Betz seconded approval of Minutes from the April 14, 2016 conference call without change. Motion passed unanimously (CNV). Minutes posted on PDC page, ASHRAE Website.

IV. BOARD ExO REPORT
Mr. McQuade highlighted items from the ASHRAE Update - ExO Report to Committees. A copy of the full presentation will be sent to the committee by separate email.

**ACTION 1:** Staff to send ExO report to the full committee

Mr. McQuade discussed in detail the global efforts to phase-out the use of high-global warming potential (GWP) refrigerants. Alternative refrigerants are highly flammable and draw extensive safety concerns. ASHRAE, AHRI and DOE are collaborating to fast-track research on the technical knowledge needed to facilitate safe use of these refrigerants. The project will accelerate updates to Standards 15 and 34. Mr. McQuade emphasized the importance of training to ensure safe implementation of the more flammable refrigerants. Chuck Gulledge added that the ASHRAE share of funds will come from the Research Reserve Fund.

Mr. Gulledge reported that work is being done to transfer eLearning to a new, scalable platform for easy use.

Dr. Chakroun charged the PDC to develop ways to efficiently train international members.

Dr. Hosni suggested a roadmap for international training.

Ms. Thrasher emphasized that many ASHRAE Learning Institute (ALI) courses relate to certification and recommended cross-promoting courses and exams. While the courses were not developed for exam preparation, they may serve as a useful reference. The committee generally agreed.

**ACTION 2:** Staff to send PDC the list of reference materials recommended in preparing for each certification exam

**ACTION 3:** Staff to label courses in ASHRAE conference promos and programs that may be helpful for certification exams and recertification

Mr. Labunski, Mr. Reihl and Mr. Smith volunteered to serve as liaisons with the Certification Committee to also promote cross-communications.
V. CHAIR’S REPORT
   A. Completed 2015-16 MBOs
      Mr. Labunski reviewed the completed 2015-16 MBOs. (See Appendix.)

   B. Review of 2016-17 MBOs (See Appendix B.)
      Mr. Bochat introduced the 2016-17 MBOs, emphasizing that the Objectives are intended to meet short term expectations.

VI. FINANCIAL REPORT
    Mr. Comstock reported that year to date PDC revenues are on track. He stated that HVAC design training is the highlight of the budget.

VII. STAFF REPORT/UPDATE
    Ms. Murray announced that the new 2-day Improving Existing Building Operations course developed by Dr. Julia Keen was on track for presentation August 18-19, 2016 in Atlanta. Once complete, the course will be reviewed and considered for future offerings.

    Ms. Murray reported the following course statuses:

    A. 2016 Winter Conference
       This year - 20 courses/916 attendees – Avg. 46 per course
       Last year - 20 courses/958 attendees – Avg. 48 per course

    B. 2015-16 In-Company/Chapter Programs
       In-company
       This year - 15 courses; 645 registrations – Avg. 43 per course
       Last year - 33 courses; 1,148 registrations – Avg. 35 per course

       Chapter Programs
       This year - 9 courses; 430 registrations – Avg. 48 per course
       Last year - 5 courses; 187 registrations – Avg. 37 per course

    C. 2016 Spring Online Courses
       This year - 12 courses; 278 registrations – Avg. 23 per course
       Last year - 13 courses; 270 registrations – Avg. 21 per courses

       2016 Annual Conference (not include on agenda)
       This year - 10 courses; 214 registrations – Avg. 21 per course
       Last year - 9 courses; 151 registrations – Avg. 17 per courses

    D. 2015 Fall Online Courses
       Fall 2015 – 10 courses/220 attendees – Avg. 22 per course
       Fall 2014 – 13 courses/256 attendees – Avg. 21 per course

       Fall 2016 – 12 courses are scheduled

    E. 2015-16 Courses at Other Industry Events
       This year - 6 courses/126 attendees – Avg. 21 per course
       Last year - 14 courses/624 attendees – Avg. 45 per course
F. 2015-16 HVAC Design Training
Level I Essentials: 16 courses/777 attendees – Avg. 49 per course
Level II Applications 12 courses/444 attendees – Avg. 37 per course

2014-15 HVAC Design courses
Level I: Essentials: 9 courses/506 attendees – Avg. 56 per course
Level II: Applications 7 courses/304 attendees – Avg. 44 per course

Total HVAC Design courses to date:
Level I Essentials: 41 courses/2,085 attendees – Avg. 51 per course
Level II Applications 29 courses/1,167 attendees – Avg. 40 per course

The committee discussed the value of the HVAC Design training and the importance of making it available to engineers new to the industry or in changing fields.

ACTION 4: Ms. Thrasher will reach out to ExCom for potential locations for the HVAC Design: Level I – Essentials training.

VIII. SUBCOMMITTEE REPORTS (See Appendix C - Notes of Conference Call June 8, 2016)
A. Planning
B. Operations

IX. COURSE LIAISONS
A. Assignments
Mr. Bochat explained that PDC is responsible for ALI courses from development through revision or sunset. Each PDC member will be assigned as liaison to one or more active courses. The liaison will work with staff to oversee course progress and potentially communicate with the course instructor and/or cognizant TC. Committee members will receive assignments from the Operations Subcommittee Chair. The subcommittee chair will normally ask for volunteers. However, if no one volunteers for a course or if more than one person volunteers for the same course, the subcommittee chair will make the final decision for the liaisons.

X. 2017 WINTER CONFERENCE COURSES
Will be approved by email ballot.

XI. OLD BUSINESS
A. Review of Action Items (See Appendix D)

XII. NEW BUSINESS
The committee discussed ways to keep chapter members informed of ALI course opportunities. Suggestions included reaching out to the chapters through the RVCs and including several slides about ALI offerings in the CTTC shared at each meeting.

ACTION 5: Staff to explore how ALI PowerPoint slides can be added to the CTTC PPT and reviewed by the PDC before release. Ms. Thrasher and Mr. Reihl agreed to review and edit as needed for CTTC use.
XIII. BRAINSTORMING

Presidential Initiatives
Mr. Labunsi encouraged the committee to take note of the presidential message and recognize the references to learning. The incoming President is a staunch supporter of education and the ability to demonstrate education. As previously discussed, two of his Presidential Initiatives were assigned to PDC:

Directive #1, Initiative #2 (Consulting Engineering Essentials Course) involves developing a new Consulting Engineering Essentials course modeled after the HVAC Design Essentials in the sense that it would cover the essential skills needed to be a successful consulting engineer.

Ms. Thrasher recommended Mr. Al Veeck as a potential course developer.

**ACTION 6**: Staff to reach out to Mr. Veeck to discuss interest in the potential course.

Directive #2, Initiative #3 (Building EQ Course) was assigned to PDC and partially delegated to an appointed Presidential ad hoc. The ad hoc committee is moving forward to review, modify and augment materials from Dr. Wentz’s pilot Building EQ course with the intent to create an online course for university use. PDC will be responsible for selecting new course topics and overseeing development of future courses.

SDL Progress
Ms. Murray provided an update on completion of the Fundamentals of Water System Design and Fundamentals of Heating Systems Self-Directed Learning (SDL) courses. She noted that in separate 2011 agreements Mr. Mark Hegberg agreed to complete both SDLs.

Expected completion date: 6/15/2011
Awaiting: The SI Units (in-text conversions, figures, tables, equations, etc.)
Setbacks: No response to date. The I-P version was published in late 2015. On November 12, 2015 it was sent to Mr. Hegberg to prepare the SI units. On June 1, 2016 Mr. Hegberg said he would have the SI version completed by the St. Louis meeting.

**Fundamentals of Heating Systems (M. Hegberg 2011)**
Expected completion date: 3/16/2012; revised to 12/15/2015
Awaiting: Numerous dual units in text, tables, figures, equations; Skill Development Exercise questions answers; replacement SI figures and tables that are equivalent to the I-P versions provided; indicators of where figures should be placed; responses to author queries; permissions for figures.
Setbacks: Author not adhering to the Scope of Work (SOW) in terms of providing a dual units manuscript, obtaining permissions, or updating the text from its 2007 edition.

Mr. Hegberg’s work on both SDLs has been stop and go from the start. Ms. Murray confirmed numerous attempts by staff to obtain a firm completion date for both course. Upon further request, Mr. Hegberg attended the June 2013 (Denver) PDC meeting to address concerns about his delays in completing the courses. He informed the committee then that he was actively working on the SDLs and expected a first draft of the Heating Systems course to be complete by July 30, 2013.
In addition, Mr. Hegberg has stated throughout his work that his intent is to provide what was contractually called for in the SOW at the time of bidding (2011). Unfortunately, as time has passed, many of the referenced materials have become outdated.

After lengthy discussion, the committee voiced strong concern about the value of the new ASHRAE products.

**MOTION:** Ms. Thrasher moved and Mr. Henck seconded recommending staff terminate the remainder of the agreements with Mr. Hegberg to revise the Fundamentals of Water System Design and Fundamentals of Heating Systems Self-Directed Learning (SDL) courses and compensate him accordingly. The motion passed 11-0-0 CNV.

**MOTION:** Mr. Smith moved and Ms. Thrasher seconded recommending staff seek TC review of the Fundamentals of Water System Design and Fundamentals of Heating Systems Self-Directed Learning (SDL) courses to determine need for additional revisions. The motion passed 11-0-0 CNV

**ACTION 7:** Staff to terminate the remainder of the agreements with Mr. Hegberg to revise the Fundamentals of Water System Design and Fundamentals of Heating Systems Self-Directed Learning (SDL) courses and compensate him accordingly.

**ACTION 8:** Staff to seek TC review the Fundamentals of Water System Design and Fundamentals of Heating Systems Self-Directed Learning (SDL) courses to determine need for further revisions.

**XIV. COMMITTEE MEMBER/OFFICER ROTATION**

**A. Recognition of Outgoing Members**

Mr. Labunski recognized the outgoing committee members and thanked them for their contributions to the PDC. He then turned the meeting over to the 2016-17 PDC Chair, Mr. Jim Bochat.

**B. New Chair Welcome**

Mr. Bochat thanked Mr. Labunski for his work with the PDC and welcomed the new PDC members.

**C. New Member Orientation**

Mr. Bochat announced that the new member orientation would be scheduled this fall and he encouraged everyone to attend. He noted that subcommittee member assignments would be made prior to the orientation.

**XV. NEXT MEETING**

New Member Orientation
Fall 2016 Conference Call

**XVI. ADJOURN**

Ms. Schaefer moved, Mr. Betz seconded and the meeting adjourned at 11:55pm.
# APPENDIX A: PDC ’15-’16 MBOs

**Professional Development Committee**  
*MBOs for Society Year 2015-16*  
**Chair:** Cameron Labunski  
**Date:** July 14, 2015

<table>
<thead>
<tr>
<th>Objective</th>
<th>SP 2014</th>
<th>Compl. by</th>
<th>Fiscal Impact</th>
<th>Resp. Party</th>
<th>Comment/Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Develop courses that reach a wide range of audiences</td>
<td>3D</td>
<td>Ongoing</td>
<td>None</td>
<td>Planning</td>
<td>Actively seeking proposals that align with the Strategic Plan.</td>
</tr>
<tr>
<td>2. Engage membership for new course ideas that align with the Strategic Plan</td>
<td>3D</td>
<td>Ongoing</td>
<td>Varies</td>
<td>Operations</td>
<td>Actively soliciting info through email and newsletter messages to Chapters, TAC, YEA, and CTTCs. Attention is given to written comments and recommendations from participants of HVAC Design training.</td>
</tr>
<tr>
<td>3. Develop products for international members</td>
<td>4A</td>
<td>Ongoing</td>
<td>Varies</td>
<td>Planning</td>
<td>Work towards this objective falls hand-in-hand with Objective 1. VRF course relates to international members</td>
</tr>
<tr>
<td>4. Position PDC to offer new residential courses</td>
<td>5A</td>
<td>Ongoing</td>
<td>Varies</td>
<td>Full PDC</td>
<td>Outline and SOW complete for 2 residential courses – one for homeowners and one for contractors. Each ≤1 hour in length. Likely instructor-led and eLearning courses.</td>
</tr>
<tr>
<td>5. Make PDC materials a greater value to chapters</td>
<td>3D</td>
<td>Ongoing</td>
<td>None</td>
<td>Operations</td>
<td>Continuing through the work of the “Billy Austin” team. An example is the 90.1 training offered in several locations throughout West Virginia.</td>
</tr>
</tbody>
</table>

**Additional Recommendations for Strategic Planning:** None at this time

ASHRAE Strategic Plan 2014 Initiatives addressed by Objective
## APPENDIX B: PDC 16-'17 MBOs

**Professional Development Committee**  
MBOs for Society Year 2016-17  
**Chair:** Jim Bochat  
**Date:** June 27, 2016

<table>
<thead>
<tr>
<th>Objective</th>
<th>SP 2014</th>
<th>Completed by</th>
<th>Fiscal Impact</th>
<th>Responsible Party</th>
<th>Comment/Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Develop a 5-year plan on developing young engineer training products that can reach a wider audience than just our design class</td>
<td>1C</td>
<td>June 2017</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Develop a standard guideline on the method to develop and produce courses.</td>
<td>2A</td>
<td>January or June 2017?</td>
<td>None</td>
<td>Planning Subcommittee</td>
<td></td>
</tr>
<tr>
<td>3. Develop outlines for additional practical applications courses to ‘fill the gaps’ in our current offerings.</td>
<td>3D</td>
<td>June 2017</td>
<td>None</td>
<td>Planning Subcommittee</td>
<td></td>
</tr>
<tr>
<td>4. Develop a standard guideline on the method to develop, translate and produce courses to an international market</td>
<td>4?</td>
<td>January 2017</td>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 5. Develop and launch two residential courses.  
  • Course 1  
  • Course 2 | 5A | January or June 2017? | None | Planning Subcommittee |  |
  • BEQ Task Force Prototype  
  • Develop second course | 1C | June 2017 | ? |  |  |

**Additional Recommendations for Strategic Planning:** None at this time

ASHRAE Strategic Plan 2014 Initiatives addressed by Objective
APPENDIX C: Notes from June 8, 2016 Conference Call

NOTES

PDC PLANNING and OPERATIONS SUBCOMMITTEES
CONFERENCE CALL
JUNE 8, 2016

MEMBERS PRESENT
Cameron Labunski, Chair
Jim Bochat, VC/Planning
Fred Betz
Charlie Henck
Bill McQuade
Rob Risley
Jeremy Smith
Kay Thrasher
Branko Todorovic
Vincent Tse

MEMBERS ABSENT
Kristin Schaefer, VC/Operations
Hank Bagheri
Mo Hosni

STAFF PRESENT
Karen Murray, Staff Liaison

I. CALL TO ORDER
PDC Chair, Cameron Labunski called the meeting to order at 10:35am and welcomed everyone.

II. REVIEW AGENDA
Added Item IV.A.3. SDLs in Progress.

III. PLANNING SUBCOMMITTEE
A. Review and discuss 2016-17 PDC MBOs
   Jim Bochat requested committee comments on the draft 2016-17 PDC MBOs. He emphasized his intent to establish more practical, attainable Objectives that still well align with the Strategic Plan.

B. Update on Proposed Courses
   Karen Murray informed the committee of a new course proposal expected to be submitted prior to the Annual Meeting. The new course would highlight the requirements of UFC 1-200-12 and ASHRAE Standard 189.1.

C. Review New Proposals
   No new proposals.

D. Course Liaisons
   To be discussed in St. Louis.

   No changes. Will be removed from future agendas unless noted changes.
IV. OPERATIONS SUBCOMMITTEE
A. Course Updates

1. SCs in Progress
   No short courses discussed.

2. PDSs in Progress
   No seminars in progress

3. SDLs in Progress
   Karen Murray reported the following course updates:
   
   Chilled Water Plants – Taylor (2009)
   Total chapters: 8. Awaiting information to complete chapter 8, Q&As for all chapters, PPT for group learning and SI version.

   Total chapters: 13. Course to be completed by year end.

   Total chapters: 9. Submitted IP text. Awaiting Q&As, numerous dual units, text for most of the figures and placement of figures and tables that correspond with text.

   Psychrometrics (SI) – Brandt (2014)
   Total chapters: 9. All chapter text received. Brandt is working with graphic artist to create figures.

   Total chapters: 12. Expect first draft in July.

   Water System Design (SI) – Hegberg (2011)
   I-P version complete. Awaiting SI.

B. Approved Proposals (Newly approved proposals voted on after the last meeting)
   Fall online course schedule will be released in St. Louis.

C. Review of Non-performing Courses
   Will be discussed in St. Louis.

D. Review of PDC MOP
   MOP is posted in Basecamp3 for review.

**ACTION:** PDC to review and provide comments by St. Louis meeting.
V.  OLD BUSINESS
   No old business.

VII.  NEW BUSINESS
   No other business discussed.

VIII.  2015-16 MBO DISCUSSION/FINALIZATION
   The 2015-16 MBOs are complete and will continue as ongoing projects.

VIII.  ADJOURN
   The meeting adjourned at 11:35am.
# APPENDIX D: Open Action Items

**Meeting of April 14, 2016 (Spring Conference Call)**

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<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>Staff</td>
<td>Review course development procedures and outline a plan to release an SOW for bid on each residential course. Motion to Fiscal Planning for course funding. <strong>Liaison’s Note</strong> - PEC approved additional funding in the 2016-17 PDC budget to support two residential courses.</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>Staff</td>
<td>Reach out to Tim Wentz for a status on completion of the existing bEQ Course. Complete. Received complete bEQ course on June 17.</td>
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**Meeting of January 25, 2016 (Winter Conference – Orlando)**

<table>
<thead>
<tr>
<th>No.</th>
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<th>Action</th>
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<tbody>
<tr>
<td>2</td>
<td>2</td>
<td>Cmte/Staff</td>
<td>Develop a plan to roll out the bEQ university course at the Annual Meeting in St. Louis. <strong>4/25/2016</strong>: Tim Wentz plans to establish a Presidential ad hoc committee with members from PDC, bEQ and Student Activities. Tim Dwyer and Mo Hosni agreed to serve on behalf of PDC. No action will be required until the ad hoc committee is formed. Brandemuehl will chair the ad hoc committee. See Item No. 2 from the April 14 conference call. The appointed Presidential ad hoc committee is working to re-package the Building EQ course Dr. Wentz previously presented at the University of Nebraska.</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>Staff</td>
<td>Reach out to the Variable Refrigerant Flow and Standard 188 course developers to discuss options for Level II training. (Complete.) Paul Lindahl, Chair of SSPC 188 agreed there would be value in offering a 2nd Standard 188 course. He recommended the course focus on Guideline 12 - Minimizing the Risk of Legionellosis Associated with Building Water Systems which is being discussed for revision. He also mentioned a Tool Kit prepared by the CDC which will be useful. Dermott McMorrow, course instructor and VC of TC8.7 Variable Refrigerant Flow will provide two VRF courses: #1 Fundamentals – Variable Refrigerant Flow Systems: Technology Introduction (presented in Orlando), and #2 Applications – Variable Refrigerant Flow System Design &amp; Application (to be presented in Vegas in 2017)</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>Staff</td>
<td>Obtain explanation of costs included in the proposal for revision of the</td>
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</table>
6-hour Healthcare Facilities course that relate to slide graphics. (Complete.)
Koenigshofer withdrew the proposal, opting to continue to update the course with each presentation.